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SUBSTITUTE 句型之認知釋解與訊息結構：以語料庫為本

Construals and Information Structure of SUBSTITUTE: A Corpus-based Study

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摘要

SUBSTITUTE 的特殊語言現象讓英語學習者無法依賴句法結構來判斷其意義。首先，即便使用相同的句法結構，其被動句型（$NP_{IN/OUT}$ + be + Verb-pp）的主詞可理解為 NP_{IN}（取代其他的人事物）或 NP_{OUT}（被取代的人事物）。相同地，主動句型（NP_{AGENT} + Verb + $NP_{IN/OUT}$）中的直接受詞（Direct Object）亦可能為 NP_{IN} 或 NP_{OUT}。本研究的目的為探討 SUBSTITUTE 的語意及句法結構，藉此幫助英語學習者判斷句中的 NP_{IN} 及 NP_{OUT}，以減少理解的困難。

本研究的研究工具為英國國家語料庫（British National Corpus），從中蒐集 SUBSTITUTE 作為動詞的語料。語料分析分為三個面向：（一）探究 SUBSTITUTE 所表現出的句型種類（sentence pattern）及其在語料庫中的分布、（二）分析造成語意混淆句型的原因、（三）檢測句型的訊息結構（information structure）能否協助判斷該名詞片語為 NP_{IN} 或 NP_{OUT} 的語意。

本研究採用 Fillmore（1982, 1992, 2006）所提出之框架語意學（Frame Semantics）為基礎，並融入 Langacker（1991, 1999, 2008）在認知語法（Cognitive Grammar）中的研究模式所提出，如何以語言結構反映出人類對世界的認知釋解（construal）」，進行語料分析。

研究分析顯示 SUBSTITUTE 具備不同種類的句型，其中以 [NP_{AGENT} + Verb + NP_{IN} + *for* NP_{OUT}] 最高頻，反映出 SUBSTITUTE 最常以‘TR (AGENT) + LM (IN)’之認知模式呈現，其中 ‘AGENT’ 與 ‘IN’ 的互動為該句型的焦點；而 ‘TR (AGENT) + LM (IN)’ 則反映出語言使用者經常將替換事件（event of substituting）概念化為動作鍊（‘AGENT-IN action chain’）的現象。另一方面，較為少用的句型，如 NP_{AGENT} + Verb + NP_{OUT}，反映出截然不同的認知方式 ‘TR (AGENT) + LM (OUT)’，並顯示出替換事件（event of substitution）被概念化為另一種動作鍊 （‘AGENT-OUT action chain’）。研究發現，對於相同的替換事件，

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不同的動作鍊被語言使用者使用，進而造成 SUBSTITUTE 在句法結構中產生混淆的現象。當‘AGENT’或‘IN’被語言使用者聚焦，‘AGENT-IN action chain’動作鍊會被生成，而當‘OUT’被聚焦時，‘AGENT-OUT action chain’動作鍊會被生成。根據語料庫的分析結果顯示，在 SUBSTITUTE 的使用中，因為‘AGENT’或‘IN’最常被視為焦點，因此‘AGENT-IN action chain’動作鍊是為 SUBSTITUTE 中替代事件概念化的典型。

另一方面，研究發現在句型的訊息結構（information structure）中特定名詞片語的訊息狀態與 NP_{IN} 及 NP_{OUT} 有密切關聯。當名詞片語為新訊息（‘new’ information）的時候，該名詞經片語經常為 NP_{IN}；而當名詞片語為舊訊息（‘old’ information）的時候，該名詞片語為 NP_{IN} 或 NP_{OUT} 在語料庫中呈現接近的比例。因此英語學習者可以透過檢視特定名詞片語的訊息狀態來判斷是否為 NP_{IN} 或 NP_{OUT}。

本研究透過分析 SUBSTITUTE 的句型及其反映出的認知方式，找出造成語義混淆的原因，另一方面，訊息結構中的新/舊訊息也可以幫助英語學習者理解 SUBSTITUTE 的使用與判斷。本研究提供英語學習者在 SUBSTITUTE 的理解以及使用上的建議，並提供英語教學者在 SUBSTITUTE 的教學上有更深入的了解。

關鍵字：*substitute*、語料庫、框架語義學、認知釋解、訊息結構、句法結構

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Abstract

This thesis carried out a corpus analysis of the verbal SUBSTITUTE aiming to investigate the reason for the ambiguous role of the NP in the post-verbal position of [NP_{AGENT} + Verb + $NP_{IN/OUT}$] and the pre-verbal position of [$NP_{IN/OUT}$ + be + Verb-pp]. To be more precise, the NP in question bore two opposite roles: the entity to replace others (NP_{IN}) and the replaced entity (NP_{OUT}). In addition, whether the information status of the NP could predict its role was also investigated. To investigate the ambiguous role of the NP, we analyzed the sentence patterns of SUBSTITUTE by adopting Fillmore's (1982, 1985, 2006) Frame Semantics and Langacker's (1991, 1999, 2008) Conceptual construal. Specifically, the {REPLACING} frame comprised of the 'AGENT', 'IN', and 'OUT' participants was evoked as the conceptual knowledge base of SUBSTITUTE. Then, the 'profiling' and the varying prominence conferred on the participants gave rise to different construals of SUBSTITUTE, which in turn were realized in different sentence patterns. For example, [NP_{AGENT} + Verb + NP_{IN}] reflects the 'TR (AGENT) + LM (IN)' construal in which the prominence was primarily conferred on the 'AGENT' and 'IN' participants.

In this thesis, we consulted the British National Corpus to extract the verbal SUBSTITUTE for analysis. The analysis focused on three aspects, including (a) the types and distribution of sentence patterns in the corpus; (b) the reason for the ambiguous roles in the NP in the corpus; (c) the information structure of the sentence patterns.

Some findings were suggested according to the corpus results. First, the different primary focus of the construals may give rise to two distinct conceptualizations of action chain: the 'AGENT-IN action chain' and the 'AGENT-OUT action chain'. The distinct action chains were argued to be the cause for the ambiguous role of NP in the

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sentence patterns. While [NP_{AGENT} + Verb + NP_{IN}] represented the 'TR (AGENT) + LM (IN)' construal in the 'AGENT-IN action chain', [NP_{AGENT} + Verb + NP_{OUT}] represented the 'TR (AGENT) + LM (OUT)' construal in the 'AGENT-OUT action chain' instead.

Then, the corpus results suggested that the use of SUBSTITUTE predominantly conceptualizes the 'AGENT-IN action chain', in which the 'TR (AGENT) + LM (IN)' construal is the typical construal encoding the typical sentence pattern of SUBSTITUTE, [NP_{AGENT} + Verb + NP_{IN} + *for* NP_{OUT}]. In contrast, [NP_{AGENT} + Verb + NP_{OUT}] reflecting the 'TR (AGENT) + LM (OUT)' construal in the 'AGENT-OUT action chain' is peripheral in SUBSTITUTE.

As for the information structure in sentence patterns, the 'discourse-new' NP prefers to be the NP_{IN}. In contrast, the 'discourse-old' NP shows the neutral preference to either NP_{IN} or NP_{OUT}. In addition, conforming to the 'old-before-new principle', the 'discourse-new' NP prefers to occur in the direct object of [NP_{AGENT} + Verb + NP_{IN}] while the 'discourse-old' NP prefers the subject of [$NP_{IN/OUT}$ + be + Verb-pp].

This thesis concluded that SUBSTITUTE tends to conceptualize the 'AGENT-IN action chain', in which the 'AGENT' and 'IN' are focused. However, it is the availability of the other action chain that causes the ambiguous roles of the NP in the sentence patterns. The information status of being 'discourse-new' could help interpret the role of the NP in question. The pedagogical implications of teaching and learning SUBSTITUTE were suggested in this thesis.

Keywords: *substitute*, corpus, construal, information structure, Frame Semantics

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CHAPTER 1

INTRODUCTION

1.1 Background and Motivation of the Study

SUBSTITUTE is an intriguing verb with two opposite meanings[1]. On the one hand, in (1.1a), SUBSTITUTE means 'to replace someone or something' with a replaced entity *him* (termed as NP_{OUT} in this thesis). On the other hand, the verb could be comprehended in 'to use someone or something new to replace the old ones' when it precedes an entity *new goals* (NP_{IN}) in (1.1b). In both cases, we can see that both NPs (i.e., *him* and *new goals*) occur as the direct object of SUBSTITUTE but play opposite roles if we understand as an entity replacing others (NP_{IN}) and an entity being replaced (NP_{OUT}).

(1.1) a. *If a player's fitness falls below 75% his performance is impaired - you may need to* ***substitute*** *him* (NP_{OUT}). (EB6-234)

b. *They can modify or* ***substitute*** *new goals* (NP_{IN}) *which are more readily obtainable.*(CE1-1112)

Likewise, a similar situation is found in the passive use of SUBSTITUTE that the NP as the syntactic subject can be either NP_{IN} or NP_{OUT}. In (1.2a), *Speed* (NP_{OUT}) was replaced in a soccer game, while in (1.2b) the poor churches use *painted frescoes* (NP_{IN}) to replace the more expensive mosaic.

(1.2) a. *Couldn't see why Speed* (NP_{OUT}) *was* ***substituted*** *but he wasn't playing well.* (J1J-765)

b. *...in poorer churches painted frescoes* (NP_{IN}) *were* ***substituted****.* (HWB-1097)

[1] SUBSTITUTE is in capitals, serving as a lemma which includes the word forms of *substitute*, *substitutes*, *substituted*, and *substituting*.

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In this thesis, we used 'syntactic pattern' for the pattern at the syntactic level, as in [NP_{SUBJ} + Verb + NP_{OBJ}], and 'sentence pattern' for the pattern where the NPs bear the roles at the semantic level, as in [NP_{AGENT} + Verb + NP_{IN}]. The phenomenon demonstrated above suggests that, in the same syntactic pattern, either NP_{IN} or NP_{OUT} is plausible in the same syntactic position, which in turn gives rise to two distinct sentence patterns. More precisely, in the syntactic pattern [NP_{SUBJ} + Verb + NP_{OBJ}], the direct object NP (NP_{OBJ}) could play the role as either the NP_{IN} or the NP_{OUT} in the two distinct sentence patterns [NP_{AGENT} + Verb + NP_{IN}] and [NP_{AGENT} + Verb + NP_{OUT}]. Since the syntactic position cannot predict the role of the NP in the syntactic patterns, readers need to count on the clues in the contexts to figure out the exact role of NP.

To have some initial understanding of SUBSTITUTE, four dictionaries (the *Oxford Learner's Dictionary*, the *Cambridge Dictionary*, the *Collins Dictionary*, and the *Merriam-Webster Dictionary*) were consulted and the syntactic patterns were summarized below[2].

First, in (1.3a), we found that the preposition *for* precedes the NP_{OUT} *butter* and that the NP_{IN} *oil* is the direct object of SUBSTITUTE. Taken together, they form the sentence pattern [NP_{AGENT} + Verb + NP_{IN} + *for* NP_{OUT}] in (1.3a).

(1.3) a. *You can **substitute** <u>oil</u>* (NP_{IN}) *for <u>butter</u>* (NP_{OUT}) *in this recipe.*

b. *<u>Gas-fired power stations</u>* (NP_{IN}) *will **substitute** for <u>less efficient coal-fired equipment</u>* (NP_{OUT}).

c. *<u>Butter</u>* (NP_{OUT}) *can be **substituted** with/by <u>margarine</u>* (NP_{IN}) *in this recipe.*

d. *<u>Ronaldo</u>* (NP_{OUT}) *was **substituted** in the second half after a knee injury.*

[2] We changed the entities which represent NP in the syntactic patterns into NP_{IN} and NP_{OUT}. For example, [SUBSTITUTE + A + *for* + B] is replaced by [SUBSTITUTE + NP_{IN} + *for* + NP_{OUT}].

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Similarly, (1.3b) contains the preposition *for* preceding the NP_{OUT} (*less efficient coal-fired equipment*); however, the NP_{IN} (*gas-fired power stations*) is the syntactic subject which differs from that of (1.3a) in the direct object. Thus, (1.3b) demonstrates the second sentence pattern [NP_{IN} + Verb + *for* NP_{OUT}]. Then, in (1.3c), two distinct prepositions *with* and *by* precede the NP_{IN} *margarine*. Although (1.3c) is expressed in passive voice, we followed the entry of the dictionary and formed [NP_{AGENT} + Verb + NP_{OUT} + *with/by* + NP_{IN}]. Lastly, in (1.3d), *Ronald* is the NP_{OUT} due to a knee injury. However, as indicated above, the NP could be either NP_{IN} or NP_{OUT}, (1.3d) is presented in [NP_{AGENT} + Verb + $NP_{IN/OUT}$].

In addition to these sentence patterns, the *Oxford Advanced Learner's Dictionary* (OALD) importantly makes the observation below.

> When *for*, *with* or *by* are not used, it can be difficult to tell whether the person or thing 'discourse-old' is being used, or has been replaced by somebody or something else. The context will usually make this clear.[3]

The statement in the OALD is consistent with our observation that the preposition *for* precedes NP_{OUT} and that both *with* and *by* precede NP_{IN}. These prepositions capable of predicting the role of NP are termed the 'role-predicting prepositions' in this thesis.

Aside from the observation made by the dictionaries, the syntactic behaviors of SUBSTITUTE are also delineated in Levin (1993) and Croft (1991).

Holding the view that "knowing the meaning of a verb can be a key to knowing its behavior" (p. 5), Levin (1993) proposed that "predictions about verb behavior are feasible because particular syntactic properties are associated with verbs of a certain

[3] URL: https://www.oxfordlearnersdictionaries.com/definition/english/substitute_2

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semantic type" (p. 5). In other words, the verbs with a shared meaning may have certain syntactic behaviors in common. With the shared meaning of "exchanging one thing for another" (p.143), SUBSTITUTE was classified into 'Verbs of Exchange' with other semantically related verbs like *barter*, *change*, *exchange*, *swap*, and *trade*. It follows that SUBSTITUTE should share some syntactic behaviors with the verbs in 'Verbs of Exchange'. They will be explained below, mostly summarized from Croft (1991) and Levin (1993).

Firstly, the 'Verbs of Exchange' do not show the dative alternation where the *to*-phrase indicates the 'goal' as "the location or entity toward which something moves" (Murphy & Koskela, 2010:150), as in (1.4a). Likewise, SUBSTITUTE, as a member in the verb category, is not compatible with the dative alternation either (see 1.4b).

(1.4) a. **Gwen* ***exchanged/changed/bartered/swapped/traded*** *the dress to Mary.* (Levin, 1993:143)

b. **Gwen* ***substituted*** *the dress to Mary.*

Secondly, the *for*-phrases were found as one of the syntactic behaviors of the verbs, referring to "the object that the agent receives as part of the exchange" (Levin, 1993:144) (see 1.5). Every verb in 'Verbs of Exchange' except SUBSTITUTE demonstrates this syntactic behavior. In (1.5a), *a shirt* (i.e. NP_{IN}) was received by *Gwen* (the agent) as the result of the exchange. However, according to the sentence patterns in the dictionaries, we found that the NP of the *for*-phrase in SUBSTITUTE refers to the NP_{OUT} rather than the NP_{IN}. In (1.5b), the NP_{AGENT} (*they*) uses *violence* (NP_{IN}) to replace *dialogue* (NP_{OUT}). Unlike other verbs in the 'Verbs of Exchange', for SUBSTITUTE, the NP in the *for*-phrase is NP_{OUT} rather than NP_{IN}.

(1.5) a. *Gwen* ***exchanged/changed/bartered/swapped/traded*** *the dress for a shirt* (NP_{IN}). (Levin, 1993:143)

b. *They were* ***substituting*** *violence for dialogue* (NP_{OUT}). (*Collins Dictionary*)

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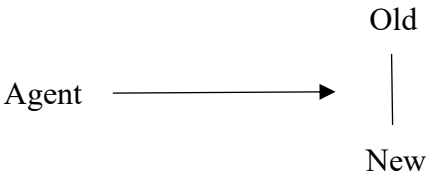

Figure 1.1 *Representation of substitution events (Croft, 1991, 225)*

The discrepancy of the *for*-phrases between SUBSTITUTE and other semantically related verbs was discovered and explained in Croft (1991). Croft (1991:225) suggested that SUBSTITUTE belongs to another lexical set, distinct from that of *exchange* and *trade*. The difference between these two lexical sets, Croft (1991) argued, resides in "a variation in the linguistic expression of old-new relation" (p.225). The variation is illustrated in more detail below.

Croft (1991:225) argued that the variation derives from a more fundamental representation of substitution events (see Figure 1.1). As demonstrated in Figure 1.1, Croft (1991) explained that "the substitution situation consists of an initiator (i.e. the agent), the old entity, and a new entity" (p. 225). The 'old entity' and the 'new entity' correspond to the NP_{OUT} and the NP_{IN} of our terminology in this thesis, respectively. In Figure 1.1, the agent could choose to initiate the action of substituting either to the old entity or to the new entity first. Croft (1991:225) argued that the two lexical sets choose differently by adopting two opposite "strategies" (p. 225). The "strategy" is the interaction between the entities (i.e. agent, new, and old), and it may be reflected in the linguistic expressions below.

In SUBSTITUTE, Croft (1991) argued that it chooses the new entity first by adopting the "new-first strategy" (p. 225) (see 1.6). The adoption of the "new-first strategy" is directly reflected in (1.6) that the direct object (*Cindy*) comes first as the new entity (NP_{IN}), and thus the *Jane* in the *for*-phrase is the old entity (NP_{OUT}).

(1.6) *The director* ***substituted*** *Cindy for Jane in the Virgin's part.*

(agent) (new) (old) (Croft, 1991:225)

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In contrast, the lexical set consisting of *exchange* and *trade* adopts the "old-first strategy" (p. 226) where the agent firstly chooses the old entity first in the representation of substitution events, which in turn is reflected in the linguistic expression that the old entity comes first as the direct object of the predicate. In (1.7), the direct object *my Volvo* comes first as the old entity (NP_{OUT}), and *a Datsun* in the *for*-phrase is the new entity (NP_{IN}).

(1.7) *I* ***exchanged/traded*** *my Volvo for a Datsun.*

(agent) (old) (new) (Croft, 1991:226)

In Croft's point of view, the different strategies adopted by distinct verbs was reflected in their corresponding linguistic expressions, which in turn led to the semantic discrepancy in the role of NPs between SUBSTITUTE and other semantically related verbs (i.e. *exchange* and *trade*). More precisely, SUBSTITUTE was argued to adopt the "new-first strategy", in which the *for*-phrase represented the old entity. In contrast, *exchange* and *trade* adopted the "old-first strategy", which designated the *for*-phrase to be a new entity.

Croft's explanation of the distinct strategies adopted by verbs may account for some of the sentence patterns of SUBSTITUTE in which the direct object NP refers to NP_{IN}, as in [NP_{AGENT} + Verb + NP_{IN} + *for* NP_{OUT}]. However, the explanation may not be compatible with other sentence patterns (e.g., [NP_{AGENT} + Verb + NP_{OUT} + *with/by* + NP_{IN}]) in which the old entity (NP_{OUT}) comes first. The occurrence of [NP_{AGENT} + Verb + NP_{OUT} + *with/by* + NP_{IN}] suggests that not only the "new-first strategy" but the "old-first strategy" is adopted by SUBSTITUTE. Therefore, Croft's explanation concerning the role discrepancy of the *for*-phrases between SUBSTITUTE and the lexical set of *exchange* and *trade* cannot account for the phenomenon in SUBSTITUTE, that is, the compatibility of both "new-first" and "old-first" strategies in the substitution events.

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Although Croft's (1991) explanation only accounted for part of the event of substituting, it demonstrated that linguistic expressions are related to the conceptual representation of the event. For example, the linguistic expression that the verb *substitute* selects the new entity (NP_{IN}) as its direct object reflects the event of substituting in which the new entity is selected firstly in the conceptual structure. The variation of linguistic expressions of the verbs (for here, the verbs in 'Verbs of Exchange') may reflect the distinct conceptual representations of the event adopted by the verbs, respectively. Yet, Croft (1991) is not the only scholar putting forward this argument. Fillmore and Baker (2010) and Langacker (2008) shared the similar notion. Specifically, Fillmore and Baker (2010:330) used the term "perspective" in which "different lexical items (e.g., *buy* and *sell*) evoke frames with different perspectives on an abstract event (commercial transaction)" (p. 330). As for Langacker (2008:43), the different selection of the event in the conceptual structure was one of the manifestations of "construal" which represents "our manifest ability to conceive or portray the same situation in alternate ways" (p. 43).

In this thesis, we adopted the notion of "construal" (Langacker, 2008:43) and investigated the construals that SUBSTITUTE possesses through examining the sentence patterns of SUBSTITUTE in natural language use.

We briefly summarized the knowledge of SUBSTITUTE that we have so far and indicated the gap for research in this thesis as follows.

First, four distinct sentence patterns were collected from the dictionaries, namely: [NP_{AGENT} + Verb + NP_{IN} + *for* NP_{OUT}], [NP_{IN} + Verb + *for* + NP_{OUT}], [NP_{AGENT} + Verb + NP_{OUT} + *with/by* NP_{IN}], and [NP_{AGENT} + Verb + $NP_{IN/OUT}$]. Possibly, some others could be uncovered in natural-occurring language.

Second, although the role-predicting prepositions are able to predict the role of their following NPs, the proportion of these role-predicting prepositions in the

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sentence patterns of SUBSTITUTE remains unknown in natural-occurring language. This knowledge matters in that the distribution of the prepositions reflects the proportion which the readers (or hearers) could rely on to distinguish the role of NPs.

Another question relates to the ambiguous role of the NP in the sentence patterns without the 'role-predicting preposition', as in [NP_{AGENT} + Verb + $NP_{IN/OUT}$].

Although the OALD indicated that "the context will usually make this clear", it remains unclear how the context could help the identification of the role. In this thesis, the management of information structure in the context is argued to be helpful in predicting the ambiguous role of the NP. Arnold et al. (2013) defined information structure that "[h]uman languages are organized in ways that reflect the content and purpose of utterances – that is, the information that is contained in the words and structures that make up sentences. This organization is called information structure" (p. 403). In the information structure, the entity (usually NP) which represents the reader's/hearer's degree of familiarity to the NP was termed "information status" by Prince (1992:298).

In this thesis, information structure is argued to be helpful due to the two hypothesis of ours. First, the less familiar information (i.e. new information) is predicted to show the preference for NP_{IN}. What motivates this hypothesis is based on live experience that we seldom remove something which is newly introduced in the discourse context. For example, in (1.8) the NP *thick oil* is firstly mentioned in the context as new information. Being new information, the NP (*thick oil*) is the NP_{IN} used to reach the goal (*to prevent further leakage*) as a new method or alternative.

(1.8) *I own a 1976 SWB Series III which is leaking oil from the seal round the offside swivel pin housing. As the housing is not pitted I cleaned it and replaced the seal, however it is still leaking some oil. Can I avoid renewing the housing by* ***substituting*** *thick oil to prevent further leakage?* (AN2-652)

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The opposite interpretation of being the removed entity (i.e. NP_{OUT}) can be hardly accepted because new information is seldom introduced to be the replaced entity (NP_{OUT}) in our live experience.

In addition, we hypothesized that if the NP is old information, it would show the neutral preference for either NP_{IN} or NP_{OUT}. This hypothesis was based on the intuition that something discussed or mentioned in the prior context could be reasonable to be either NP_{IN} or NP_{OUT}.

The two hypotheses demonstrate the potential of old/new information to distinguish the role of NP if both of them were attested in the natural language use. In particular, the first hypothesis that new information prefers NP_{IN} may help distinguish the ambiguous role of the NP in the sentence patterns without the role-predicting preposition, e.g., [NP_{AGENT} + Verb + $NP_{IN/OUT}$].

Lastly, since linguistic expressions may reflect the variant construals (Langacker, 2008) of the event in conceptual representation, we will uncover the different construals of the substitution event by examining the sentence patterns of SUBSTITUTE in natural-occurring language.

1.2 Research Questions of the Study

In this thesis, four research questions will be addressed for investigation:

1. What sentence patterns of SUBSTITUTE are displayed in natural language use?
2. What is the distribution of each sentence pattern in natural language use, especially the sentence patterns with and without the role-predicting prepositions?
3. What is the tendency between 'old/new' information in the information structure and the role of the NP in the sentence patterns of SUBSTITUTE?
4. What construals does SUBSTITUTE possess in the event of substitute?

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The present thesis is structured as follows. In Chapter Two, we will review the related literature of (a) construal and its relation to linguistic expressions in conceptual approach and (b) the impact of the information structure on sentence patterns in discourse. In Chapter Three, we will present the methodology, specifically the annotation of the participants in the event of substitution and the information status of the NPs in sentence patterns. In Chapter Four and Five, we will present the results of the conceptual analysis of the sentence patterns and the relation between information status and sentence patterns, respectively. Lastly, in Chapter Six we will conclude the findings of the thesis by answering the four research questions. In addition, according to the findings, we will propose the pedagogical implications and indicate the limitations of the thesis.

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CHAPTER 2

LITERATURE REVIEW

To tackle the issue pertaining to the configuration of grammatical structure, we review the linguistic theories explaining the configuration of simple clause structure, defined as "a sentence with one main clause" in Carter & McCarthy (2006:488).

The chapter is structured as follows. In section 2.1, we will introduce the conceptual approach to simple clause structure in Langacker (1991, 1999, 2008). Fillmore's (1982, 1985, 2006) Frame Semantics will be introduced as well. Then, in section 2.2, the scope is extended beyond the boundary of clauses and information structure will be reviewed. In section 2.3, we will summarize this chapter.

2.1 Conceptual Approach to Clause Structures

In this section, we present two notions advocating that humans describe their experience of events by means of conceptual structure. First, we introduce the notion of 'Frame Semantics' (Fillmore, 1982, 1985, 2006) as the foundation of conceptual approach in section 2.1.1. Then, on the ground of 'Frame Semantics', we review Langacker's (1991, 1999, 2008) proposals of 'construal' in section 2.1.2 and demonstrate the influence of 'construal' in the encoding of clause structure in section 2.1.3. Lastly, in section 2.1.4 we will present the approach adopted in this thesis.

2.1.1 Frame Semantics

The theory of Frame Semantics was proposed to respond the criticisms and limitations of semantic roles (Fillmore, 1982, cited in Fillmore, 2006). Specifically, Fillmore acknowledged that semantic roles fail to offer detailed semantic description:

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> This theory of semantic roles fell short of providing the detail needed for semantic description; it came more and more to seem that another independent level of role structure was needed for the semantic description of verbs in particular limited domains.
>
> (Fillmore, 1982:377)

Fillmore (1982:115) proposed the abstract 'scenes' as the basis in Frame Semantics ('scene' was later replaced by 'frame' in Fillmore (1985), we use 'frame' hereafter). As explained in Fillmore and Baker (2010:314), Frame Semantics is "the study of how, as a part of our knowledge of the language, we associate linguistic forms (words, fixed phrases, grammatical patterns) with the cognitive structures—the frames" (p. 314). In other words, Frame Semantics advocated the continuities between language and our experience or encyclopedic knowledge in conceptual structure.[4] The 'frame' is the schematic and conceptual representation which entails the necessary properties, experiences, and knowledge as the basis and premise to understand the semantic structures and meanings of the verb. That is, frames are the presupposed knowledge and experience to understand the meanings of a word. For example, the meanings of a set of semantically related verbs, including *buy*, *sell*, *spend*, etc. can be understood by knowing what takes place in a commercial transaction in the {COMMERCIAL TRANSACTION} frame (Fillmore & Atkins, 1992:78).[5]

The {COMMERCIAL TRANSACTION} frame is the knowledge base comprising our experiences in a commercial transaction event, for example, buying books in a bookstore. Progressively, the experience of commercial transaction events establishes

[4] In this thesis, we used 'conceptual structure' and 'cognitive structure' interchangeably.
[5] Note that the name of frames is presented in lower capital embedded in curly brackets.

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the required knowledge and concepts in the {COMMERCIAL TRANSACTION} frame. For instance, as indicated by Fillmore and Atkins (1992:78), there is a 'BUYER' purchasing 'GOODS' and a 'SELLER' selling the 'GOODS' in exchange of the 'MONEY' from the 'BUYER'.[6] These four elements were termed the 'frame elements' (FEs) (Fillmore & Baker, 2010:321) of the {COMMERCIAL TRANSACTION} frame. Since the lack of each element may cause the commercial transaction event incomplete (the 'BUYER' cannot buy the 'GOODS' without paying 'MONEY'), these elements are the 'core FEs' of the {COMMERCIAL TRANSACTION} frame. In contrast, the 'TIME' in which the commercial transaction event occurs is negligible in the frame, and thus 'Time' is the non-core (or peripheral) FE of the {COMMERCIAL TRANSACTION} frame.

In a different point of view, Petruck (1996) indicated that "the words, that is, the linguistic material, evoke the frame (in the mind of a speaker or hearer); the interpreter (of an utterance or a text in which the words occur) invokes the frame" (Petruck, 1996:1). In other words, the verbs, e.g. *buy*, *sell*, and *spend*, are the linguistic prompts which activate our knowledge base of the {COMMERCIAL TRANSACTION} frame to encode or interpret the event of commercial transaction.

It is important to clarify that the requirement of core FEs in a frame does not mean their realization in a sentence is required as well. While all the core FEs could be realized (see 2.13a), oftentimes not every core FE is realized, as in (2.1b).[7]

(2.1) a. [BUYER *Carla*] ***bought*** [GOODS *the computer*] [SELLER *from Sally*] [MONEY *for $100*]. (Petruck, 1996:3)

b. [SELLER *Sally*] ***sold*** [GOODS *the computer*] *yesterday*.

[6] In this thesis, the frame elements are presented in lower capitals within single quotations, for example, 'BUYER', in order to be distinguished from the semantic roles (e.g., 'Agent').

[7] In this study, we only annotated the core FEs in the sentence. Since *yesterday* refers to the non-core FE 'Time', we did not label its frame element in (2.13b).

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Therefore, the core FEs are necessary in the sense that none of the core FEs could be deleted in the knowledge base of the frame. For example, the {COMMERCIAL TRANSACTION} frame would be incomplete if one of the core-FEs (e.g., 'SELLER') is not part of the frame.

Another important concept in Frame Semantics is 'perspective'. Fillmore and Baker (2010) proposed that "different lexical items (e.g., *buy* and *sell*) evoke frames with different perspectives on an abstract event (commercial transaction)" (p. 330). Consider (2.1) again. On the one hand, in (2.1a) the verb *buy* takes the perspective of the 'BUYER', so that the 'BUYER' is realized as the subject of *buy*. On the other hand, in (2.1b), the verb *sell* takes the perspective of the 'SELLER', and thus the 'SELLER' is realized as the subject of *sell*. While (2.1a) and (2.1b) describe the same event that 'Sandy sold the computer to Carla', the two verbs take different perspectives on the event, and thus give rise to different realizations of core FEs in the sentences.

Using Frame Semantics as the basis, the Berkeley FrameNet project has developed an online lexical resource with corpus evidence. The aim of the project is "to document the range of semantic and syntactic combinatory possibilities of each word in each of its senses" (Ruppenhofer *et al.*, 2016:7). In other words, based on the frames evoked by a word (usually a verb), the FrameNet aims to capture how the frame elements can be realized in the syntactic structure of the verb in natural occurring language. For example, in the verb *sell*, the 'SELLER' is realized as the subject while the 'GOODS' is realized as the direct object (see 2.1b). At the same time, the verb *sell* can also be expressed in *Sally sold Carla a computer* where the direct object *Carla* is the 'BUYER' rather than the 'GOODS', and the 'GOODS' (*a computer*) is realized in the indirect object. These combinatory possibilities of the verb *sell* have been documented as such in the lexical source of the FrameNet.

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Then, we consulted the FrameNet for the frames presupposed by SUBSTITUTE (https://framenet.icsi.berkeley.edu/fndrupal/framenet_search). SUBSTITUTE, as indicated in the FrameNet, evokes two different frames as its conceptual knowledge base: one is the {REPLACING} frame and the other is the {TAKE PLACE OF} frame. The definition of each frame and its core FEs are provided in Table 2.1 and Table 2.2.

In the {REPLACING} frame, 'AGENT', 'NEW', and 'OLD' were identified as the core FEs. The definition of this frame suggests the knowledge and experience that an 'AGENT' uses the 'NEW' to take the place of the 'OLD'.

Table 2.1 *The definitions of the {REPLACING} frame and its core FEs*
(https://framenet2.icsi.berkeley.edu/fnReports/data/frameIndex.xml?frame=Replacing)

Frame	REPLACING	
Definition	An 'AGENT' changes the filler of a role by placing an 'NEW' filler in the position after the 'OLD' filler ceases to occupy the position.	
Core FEs	'AGENT'	The conscious entity, generally a person, that performs actions resulting in the 'NEW' entity occupying the position.
	'NEW'	The 'NEW' entity is the person or thing that the 'AGENT' sets to fill a role
	'OLD'	The entity that formerly occupied the position.

The {REPLACING} frame could be exemplified as in (2.2). The 'AGENT' *Wilkinson* could be a coach or a manager who instigates the action of substituting by introducing the 'IN' (*David R.*) as the new player to take the place of the 'OUT' (*Frank Strandli*). As for *with 8 minutes remaining*, it is not annotated with a frame element in this thesis due to its status as a non-core frame element, 'Time'.

(2.2) [AGENT *Wilkinson*] ***substituted*** [NEW *Frank Strandli*] [OLD *with David R.*] *with 8 minutes remaining.* (FrameNet)

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According to FrameNet, the other frame evoked by SUBSTITUTE is the {TAKE PLACE OF} frame, in which three core FEs are displayed in Table 2.2. The first two are the 'NEW' and the 'OLD', and the third core FE could be either 'FUNCTION' or 'ROLE'. In general, this frame describes the knowledge and experience that a 'NEW' takes the place of an 'OLD' by occupying the former 'ROLE' or 'FUNCTION' of the 'OLD'.

Table 2.2 *The definitions of the {TAKE PLACE OF} frame and its core FEs*
(https://framenet2.icsi.berkeley.edu/fnReports/data/frameIndex.xml?frame=Take_place_of)

Frame	TAKE PLACE OF	
Definition	A 'NEW' filler occupies a 'ROLE' or serves a 'FUNCTION' after the 'OLD' filler ceases to occupy the position. In many cases, the 'ROLE' or 'FUNCTION' is implicit.	
Core FEs	'NEW'	The new filler of the 'ROLE' that was previously occupied by the 'OLD' filler.
	'OLD'	The entity that occupied the 'ROLE' or served the 'FUNCTION' before the 'IN' filler.
	'FUNCTION'	The (generally desirable) state of affairs that the 'NEW' and 'OLD' entities are involved in bringing about.
	'ROLE'	The category that the 'NEW' and 'OLD' entities fit into as a result of the 'FUNCTION' they serve.

The {TAKE PLACE OF} frame could be exemplified as in (2.3).

(2.3) [NEW *Charcoal*] *can also* ***substitute*** [OLD *for fossil fuels*], *which in some places is an urgent need.* (FrameNet)

In (2.3), *Charcoal* is the 'NEW' realized as the subject of SUBSTITUTE and takes the place of the 'OLD' which is realized as the oblique, *for fossil fuels*. As for the third core-FE, either 'ROLE' or 'FUNCTION', is absent in (2.3).

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This section has presented the point of view of Frame Semantics which emphasizes that linguistic expressions relate to the evoked knowledge structure or experience of the words (i.e. frames) and that different linguistic expressions are the results of the realizations of the frame elements in the frames. For here, the realizations of the core FEs of SUBSTITUTE was exemplified to illustrate this notion. In general, Frame Semantics hold the tenet that the use of language reflects the experience and knowledge embedded in the frame underlying the words.

In the next section, we will introduce Langacker's (1991, 1999, 2008) notions that language is the conceptual symbolization providing different devices for us to encode the experience of events.

2.1.2 Construal in Cognitive Grammar

On the ground of cognitive approach, Langacker (1991, 1999, 2008) developed the linguistic theory known as Cognitive Grammar. The basic tenet of Cognitive Grammar is that language is "symbolic in nature" (Langacker, 2008:5). To be more specific, language is structured by symbols, that is, the symbolic assemblies which are the form-meaning pair in nature (Langacker, 2008). For example, a simple lexical item, for example, *cat*, is symbolic in that its alphabetically structured form (*cat*) or its phonological structure /*kæt*/ is paired with its meaning. Furthermore, even the grammar of a language, known as the system which combines elements into complex expressions, is considered symbolic. As indicated by Langacker (2008), "lexicon and grammar form a gradation consisting solely in assemblies of symbolic structures" (p. 5). For instance, the grammatical categories (e.g., 'nouns') are symbolic because they carry the more schematic meaning of 'things'. In this regard, Cognitive Grammar rejects the 'autonomous' nature of syntax, that is, the separation of syntax and semantics, in Generative Grammars (Chomsky, 1986).

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As indicated above, a symbolic assembly contains a form-meaning pairing. Then, a question arises: where does the meaning come from? Evans & Green (2006) explained that "[t]he meaning associated with a linguistic symbol is linked to a particular mental representation termed a concept. Concepts, in turn, derive from percepts" (p. 7). Consider the meaning of *cat* again. We interact with cats in the physical world through our sensory perceptions, such as vision and touch. Through vision, we know the appearances and colors of cats, and through touch we feel the fluffy furs of cats. All these are our 'percepts' of cats. Then, progressively, these percepts of cats are integrated into the mental (or conceptual) representation, which, in turn, forms the 'concepts' of cats. Imagine a scenario in which you are directing your friend's attention to a cute cat on the street by *Look at the cat!* In your utterance the *cat* derives from your concept of *cat* in the conceptual representation. This scenario demonstrates that the meaning of the symbolic assembly *cat* comes from the conceptual representation of cat rather than any specific cat in the physical world.

With this understanding, Langacker proposed that "a meaning consists of both conceptual content and a particular way of construing that content" (p. 43). While the 'conceptual content' refers to, for example, the concept of cat in the conceptual representation, the term 'construal' is defined as "our manifest ability to conceive or portray the same situation in alternate ways" (p. 43).

Langacker adduced a half-full glass of water for illustration (see Figure 2.1). At the conceptual level, the conceptual content is in the "neutral manner" without any imposed construals on it, as the left-most diagram in Figure 2.1. Then, as we encode the conceptual content into language, inevitably, different construals may be imposed on the conceptual content. In (2.4), Langacker displayed the encoded sentences corresponding to the four possible construals in Figure 2.1.

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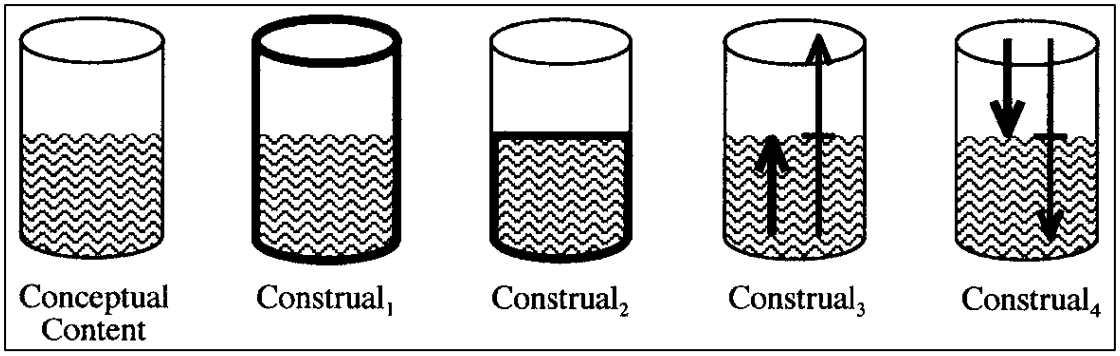

Figure 2.1 *Construals in conceptual content (adapted from Langacker, 2008:44)*

(2.4) a. *the glass with water in it* (Langacker, 2008:43)

b. *the water in the glass* (*ibid*)

c. *the glass is half-full* (*ibid*)

d. *the glass is half-empty* (*ibid*)

Sentence (2.4a) represents the first construal which designates the container, *the glass*; (2.4b) takes the second construal designating the liquid, *the water*, in the container; (2.4c) designates the relationship between the container (*the glass*) and the half-filled water; (2.4d) designates the relationship between the container and the half-void space in the container. Sentences in (2.4) demonstrate how the identical conceptual content can be construed differently in language from (2.4a) to (2.4d), respectively.

As demonstrated in (2.4), different locus of the conceptual content could be selected in these four construals. In (2.4a), the container is selected; in (2.4b), the liquid is selected; in (2.4c), the relationship between the container and the liquid is selected; in (2.4d), the relationship between the container and the void is selected. The selection of locus of the conceptual content, as proposed by Langacker (2008), reflects the mechanism of "prominence" (p. 66) in construal. In this thesis, among others, we concentrate on two kinds of prominence in language structure: the

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'profiling' and the 'trajector-landmark alignment', the two main notions used in this thesis later.

2.1.2.1 Profiling

Within the conceptual structure, the conceptual content, as the glass of water in Figure 2.1, is considered the conceptual 'base' as "the immediate scope in active domains" (Langacker, 2008:66). The proposal of the conceptual 'base' is akin to the 'frame' in the Frame Semantics, that is, the encyclopedic knowledge or experience. For 'profiling', it refers to the "the specific focus of attention" (Langacker, 1999:7) in the conceptual 'base'. Taken together, 'profiling' is defined in Langacker (2008) as follows.

> Within this onstage region, attention is directed to a particular substructure, called the **profile**. Thus an expression's profile stands out as the specific focus of attention within its immediate scope.
>
> (Langacker, 2008:66)

In the example of the half-full glass of water, the integrity of the whole conceptual content, including the container, water, and the void, is the conceptual 'base' for selection. Then, the selected locus (i.e. the particular substructure) of the 'base' is the 'profile' of a certain construal. For instance, in *the glass with water in it*, the 'profile' is the container encoded by the noun phrase, *the glass*; then, the whole conceptual content in Figure 2.1 is the 'base' of the 'profile'.

Furthermore, in the same base, the profile could be either a 'thing' or a 'relationship' (Langacker, 2008:67). In *the glass with water*, the expression profiles

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the 'thing' in *the glass*.[8] In contrast, the preposition *with* profiles the 'relationship' between *the glass* and *the water*. The fundamental distinction between the 'thing' and the 'relationship', as indicated by Langacker (1991), lies in whether the conception can be conceptualized independently. While the 'thing' can be conceptualized independently, the 'relationship' "does not exist independently of its participants" (Langacker, 1991:14). For example, in *John broke the glass*, we can independently form the conceptions of 'thing', such as *John* and *the glass*. However, we cannot conceptualize the verb *break* without referring to its participants, *John* and *the glass*. Therefore, Langacker argued that the profiling of a 'thing' is "conceptually autonomous" (p. 14) and that a 'relationship' is "conceptually dependent" (p. 14).

On top of that, Langacker (2008:369) applied profiling to the force-dynamic event of glass breaking, as in *Floyd broke the glass with a hammer*. As a mechanism directing attention to a certain portion of the conceptual base, Langacker (2008:369) argued that different linguistic expressions demonstrate the varying profiled portion of the event. For instance, the sentence *A hammer broke the glass* shows that the attention directed to the interaction between the hammer and the glass, and another expression *The glass broke* only focuses on the result of the glass. These three expressions show that language allows us to focus on different portion of an event, and 'profiling' is the cognitive mechanism underlying these expressions.

This sub-section illustrates the notion of profiling which represents the highlighted part of a given conceptual content as part of the story of prominence. In the next sub-section, the other kind of prominence, 'trajector-landmark alignment', will be introduced.

[8] Note that the term 'profile' can be used verbally with the meaning of selecting a locus in the 'base'.

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2.1.2.2 Trajector-landmark alignment

In the previous section, 'profiling' has been introduced as a kind of prominence in which language users impose different construals on the same conceptual content (i.e. base) by selecting different elements in it. It allows language users to focus on the profiled ones while others remain part of the base. However, these profiled participants do not receive equivalent prominence. As indicated by Langacker (2008), "[w]hen a relationship is profiled, varying degrees of prominence are conferred on its participants" (p.70). The varying degrees of prominence between the profiled participants are the second kind of prominence: the "trajector-landmark alignment" (Langacker, 2008:70).

It is not uncommon to find different expressions to describe an identical scene in the physical world. For example, in Figure 2.2, Langacker (2008:71) adduced the relative spatial location of a lamp (X) in the higher position and a table (Y) beneath the lamp in the physical world. Two expressions describe the scene in (2.5).

(2.5) a. [*The lamp*]^{TR} *is* ***above*** [*the table*]^{LM}. (Langacker, 2008:71)

b. [*The table*]^{TR} *is* ***under*** [*the lamp*]^{LM}. (*ibid*)

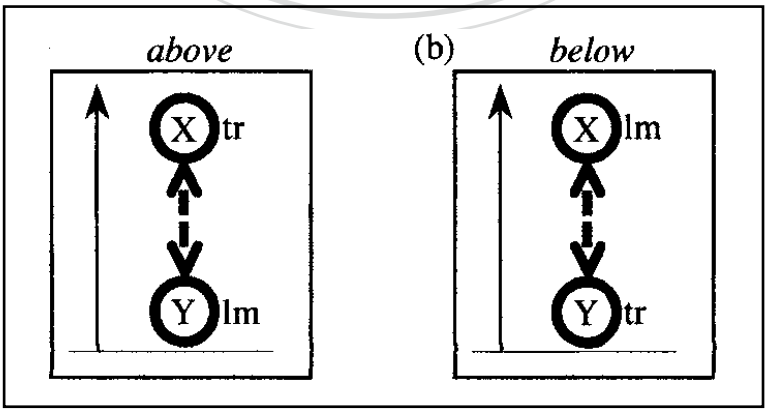

Figure 2.2 *Trajector-landmark alignment in table and lamp (Langacker, 2008:71)*

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Truth-conditionally, both (2.5a) and (2.5b) have the same proposition referring to the identical scene in the physical world. However, despite being identical in the physical world, as argued by Langacker, (2.5a) and (2.5b) are semantically distinct in that "[t]he semantic contrast resides in the degree of prominence conferred to the relational participants" (p. 71). In other words, although both participants (i.e. *the lamp* and *the table*) are profiled in (2.5a) and (2.5b), the degree of prominence conferred on the profiled participants varies in each sentence.

Specifically, among the profiled participants, Langacker proposed that the most prominent participants is the 'trajector' defined as "the entity construed as being located, evaluated, or described" (Langacker, 2008:70), and which in turn is "the primary focus within the profiled relationship" (p. 70). Then, the other participant is the 'landmark' (LM) made prominent as a "secondary focus" (p.70). Therefore, in (2.5a), we identify the location of *the lamp* as the 'trajector' in reference to the other prominent participant, *the table*, as the 'landmark'. On the contrary, in (2.5b), *the table* is located as the most prominent participant (the 'trajector') in reference to *the lamp* (the 'landmark'). Therefore, in Langacker's (2008) account, the identical scene with different meaning in (2.5a) and (2.5b) comes from the different selection of 'trajector' and 'landmark'. In a nutshell, the varying degrees of prominence in the profiled participants reflect the different construals of the scene, which in turn result in the variation of meaning. The two participants selected as the 'trajector' and 'landmark' are called "focal participants" (Langacker, 1991:301).

Based on this, Taylor (2003:214) further proposed that, in some cases, more than one landmark is needed in a profiled relation. The more prominent landmark is the 'primary landmark', while the other is the 'secondary landmark'. In this thesis, we used the 'LM' in the upper case as the abbreviation for the 'primary landmark' and the 'lm' in the lower case for the 'secondary landmark'.

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In (2.6), Taylor (2003:214) compared the two verbs, *rob* and *steal*, with the same knowledge base: "a person illegally takes a thing away from its rightful owner".

(2.6) a. [*The thieves*]^{TR} ***robbed*** [*the Princess*]^{LM} [*of her diamonds*]^{lm}.

(Taylor, 2003:214)

b. [*The thieves*]^{TR} ***stole*** [*the diamonds*]^{LM} [*from the Princess*]^{lm}. (*ibid*)

The three participants in the base are: the person who takes the thing, the thing to be taken, and the rightful owner of the thing. In (2.6a), the verb *rob* emphasizes the interaction between *the thieves* (TR) and *the Princess* (LM), that is, the act of robbing initiated by *the thieves* affects *the Princess*. Then, the oblique (*of her diamonds*) is the secondary landmark (lm) specifying the way *the Princess* was affected. In contrast, in (2.6b), the verb *steal* highlights the interaction between *the thieves* (TR) and *the diamonds* (LM). The oblique (*from the Princess*) describes that *the diamonds* are affected in being taken away from its rightful owner.

By the comparison between *rob* and *steal*, Taylor (2003) demonstrated the value of identifying the secondary landmark (lm) in prominence distribution. Specifically, aside from the trajector, it presents different selections of primary and secondary landmarks in verbs. The different prominence distribution in participants of the two verbs reflects different construals in each verb. Taylor's observation, in fact, echoes with the notion of 'perspective' (Fillmore & Baker, 2010:330) in Frame Semantics. Indeed, as indicated in section 2.1.1, Frame Semantics proposes that different verbs present variant perspectives of the frame, for instance, the verb *buy* presents the perspective of 'BUYER' while *sell* presents the perspective of 'SELLER' instead. The 'perspective' resembles the 'construal' in Cognitive Grammar, which is accounted for by the different prominence distribution of participants in verbs.

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In section 2.2, we have illustrated 'prominence' as a crucial cognitive mechanism of construal in conceptual structure. The 'profile' of the conceptual content demonstrates the highlighted portion of the 'base'. Then, the varying degrees of prominence conferred on the profiled participants form the 'trajector-landmark alignment', reflecting the different construals imposed on the conceptual content. In the next section, we focus on how the cognitive mechanism of prominence is manipulated and manifested in event coding at the clause level.

2.1.3 Construal and event coding

In the previous section, we have illustrated how different construals impose prominence on the profiled participants in varying degrees, which in turn influences the encoding of event in language. However, the underlying mechanism which poses the trajector to the subject and the landmark to the direct object remains unclear.

Answering this question, Langacker (2008) indicated that clause structure is "grounded in basic human experience" (p. 355), and one of the ubiquitous experience is the interaction between entities through force and energy. Specifically, Langacker (1991) use the 'billiard-ball' metaphor (p. 13) to describe this kind of experience in our conceptual structure:

> We think of our world as being populated by discrete physical objects. These objects are capable of moving about through space and making contact with one another. Motion is driven by energy, which some objects draw from internal resources and others receive from the exterior. When motion results in forceful physical contact, energy is transmitted from the mover to the impacted object, which may thereby be set in motion to participate in further interactions.
>
> (Langacker, 1991:13)

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The fundamental nature of the 'billiard-ball' metaphor is the force-dynamic interaction between objects. The transmission of energy starts from the physical object which exerts its force to another, and the object receiving the energy, in turn, transmits the energy to the other. This force-dynamic interaction continues until one object receives the energy and ceases to affect others.

The "action chain" (also known as the "causal chain" in Croft (1991, 2012)) was proposed by Langacker (1991:283)) in Figure 2.3.

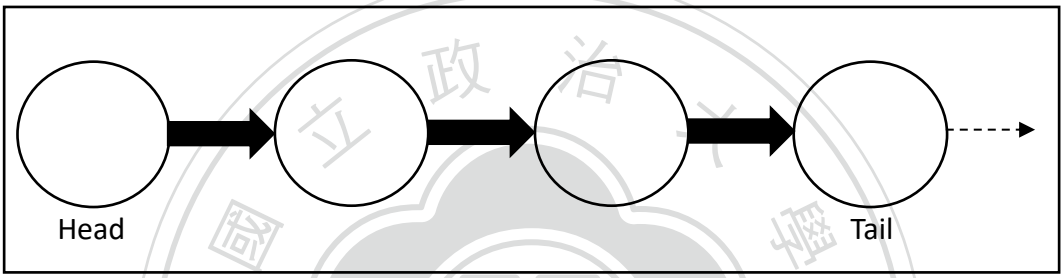

Figure 2.3 *Action Chain (adapted from Langacker, 2008:356)*

In Figure 2.3, each circle represents an object, the solid arrow represents the transmission of energy, and the dashed arrow represents the potential change of location or state of the last object. The objects are ordered in the direction of the transmission of force from the 'head', which initiates the force, to the 'tail', which ceases to transmit the force, of the action chain. Also noted by Langacker (2008), an action chain can be of any length. Minimally, it could be a "degenerate action chain in which the same participant is both the source of energy and the locus of its manifestation: a one-participant action" (p. 356), as in *she jumped*.

An event of breaking, as in *Floyd broke the glass with a hammer*, was used to illustrate its representation in the action chain (Langacker, 2008:369).

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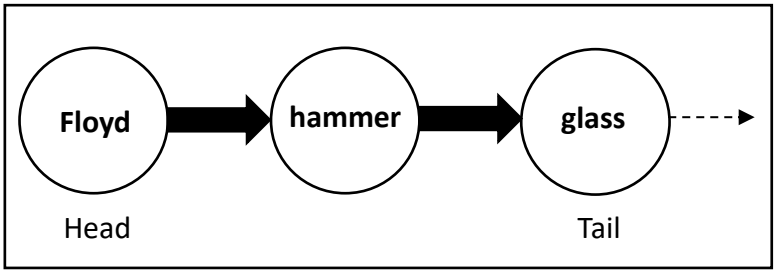

Figure 2.4 *The action chain of the event of breaking*

In Figure 2.4, *Floyd* is the 'head' of the action chain. It exerts the force onto the second object (*hammer*), and the *hammer* transmits the force to the *glass*, which ceases to transmit the force as the 'tail' of the action chain. The relations between the objects in the event of breaking are force-dynamic in nature.

Using the notion of action chain, in an event of force-dynamic interaction, Langacker (2008) argued that "[i]n the default coding of canonical events, primary focal prominence is conferred on the head of an action chain, the agent who initiates the chain of interactions constituting the profiled occurrence" (p. 367). This is because the agent is an active participant which exerts the force, and thus it strongly receives attention. Since English is the language well-known for this 'agent orientation' tendency, Langacker (2008:369) further indicated that, in addition to the agent, the trajector can be even conferred on the most agent-like profiled participant, namely the object closest to the profiled action chain.

For example, the event of breaking in (2.7) is represented in the action chain in which *Floyd* is the agent who uses *hammer* as an instrument to break the entity (*the glass*). Each sentence profiles the different portion of the action chain in which the profiled participant closest to the source of energy (i.e. 'head') varies, and thereby the realization of the subject in the clause structure differs.

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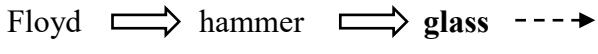
(2.7) a. *Floyd broke the glass with a hammer.* (Langacker, 2008:369)

b. *A hammer broke the glass.* (*ibid*)

c. *The glass broke.* (*ibid*)



Specifically, in (2.7a), the entire action chain is profiled, and thus the agent *Floyd* is the subject of the clause. In (2.7b), both *hammer* and *glass* are the profiled participants in the action chain. We can observe that when the agent *Floyd* is not profiled, the most agent-like participant (*hammer*) is realized as the clausal subject. This observation also holds in (2.7c) where only the tail of the action chain (*the glass*) is profiled. *The glass* is the clausal subject which denotes the result of losing the structured integrity. Therefore, we conclude that, in the default encoding of events, the clausal subject receives the most prominence since it corresponds to the participant closest to the 'head' of the action chain.

The participant as the 'tail' of the action chain also receives different degrees of prominence and has its consequence to grammatical behaviors. For clauses which select the most agent-like participant as the trajector, as in (2.7a) and (2.7b), the participant *glass* is the 'tail' which receives the secondary focus (i.e. landmark) in the position of direct object. Then, what makes *the glass* the landmark instead of *the hammer*? This is because each verb profiles a particular relationship or interaction between participants in alignment with trajector and landmark. For example, in (2.7a), the verb *break* profiles the interaction between *Floyd* and *the glass*, and thus *Floyd* receives the primary focus and *the glass* is the landmark in the clause. In contrast, in *Floyd used the hammer to break the glass*, the verb *use* particularly profiles the

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interaction between *Floyd* and *the hammer*. The primary focus is given to *Floyd* and the secondary focus to *the hammer*, and as predicted the landmark (*the hammer*) is the direct object of the clause.

In addition to the landmark, the participant *glass* in (2.7c) could be the trajector in the one-participant clause. The occurrence of the one-participant clause, Langacker (2008) argued, comes from two kinds of source. One is that the agentive participant is the source of energy of the action; for example, in *She laughed*, the participant *she* is the energy source conducting the action of laughing. Since the verb is used intransitively, the process is termed 'agentive intransitive process' (Langacker, 2008:374). In contrast, in *The glass broke*, Langacker (2008) termed it the 'thematic process' defined as "a minimal single-participant process in which the theme's role is passive (i.e. it is not construed as a source of energy)" (p. 370). In other words, *the glass* is the theme which cannot be construed as the source of energy but the consequence of the force-dynamic interaction. Due to the several occurrences of the 'thematic process' in SUBSTITTUE, as in *The medicine substitutes poorly*, it will be introduced in detail below.

Although the 'thematic process' cannot be the source of energy, it is self-contained and conceptually autonomous in itself; for example, we can easily imagine a scene where a glass is broken without the reference to other participants. Langacker (2008) illustrated it by indicating that "the profiled occurrence can be apprehended without explicitly invoking an agent or an energy source. When conceived autonomously in this fashion, its construal is said to be absolute" (p. 371). In other words, we can construe a particular portion of the action chain as an autonomous one detached from the whole. Importantly, Langacker noted that this is not to say the force-dynamic interaction does not exist. Instead, other participants in the action chain

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remain part of the knowledge base; for instance, in *the ice cream melted*, we know the heat comes into play and melts the ice cream.

In addition, it is worth noting that not any portion of the action chain could be construed as conceptual autonomous. Specifically, Langacker (2008) argued that:

> The absolute construal of such a process […] is conceptually coherent. But the converse does not hold: by its very nature, an agentive process incorporates a thematic process, without which it is conceptually incoherent.
>
> (Langacker, 2008:371)

We adduce Figure 2.5 for illustration.

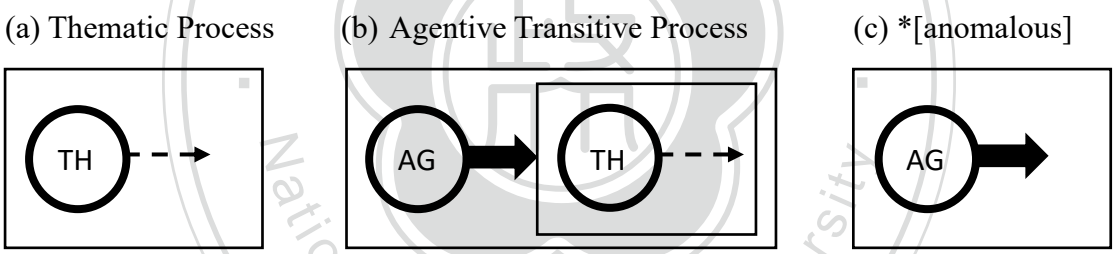

Figure 2.5 *Conceptualization of process (adapted from Langacker, 2008:372)*

In diagram (2.5a), it represents the theme in the thematic process which is conceptually coherent due to the conceptually autonomous nature of the thematic process, such as *The glass broke*. In diagram (2.5b), the agentive transitive process entails an agentive act and a thematic process which is initiated due to the agentive act; for example, *Floyd broke the glass*. The agentive act itself is conceptually dependent because the lack of the thematic process renders the agentive act conceptually incoherent, as in **Floyd broke*. Diagram (2.5c) represents the incoherence of process conceptualization of this kind.

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So far, we have illustrated three kinds of process in the action chain. One is the transitive agentive process in which an agentive participant brings about the thematic process of the theme, as in *Floyd broke the glass*. Another is the intransitive agentive process where the agentive participant is the source of energy without any other participants, as in *She laughed*. The last is the thematic process in which language users impose absolute construal on the action chain, as in *The glass broke*. Then, due to the strong agent orientation in English, the trajector is conferred on the most agent-like participant as the subject of the clause, and the participant with which the trajector interacts is the landmark realized as the direct object in the clause.

Now that the default event coding in active voice has been illustrated above, we are on the ground to other voices that language provides for alternative construals on the event. In certain occasions, the trajector is not conferred on the most agent-like participant as in active voice; rather, the alternative options like passive construction and middle construction are available. Since a number of sentence patterns of SUBSTITUTE were found in both constructions, we introduce them below.

2.1.3.1 *Passive construction*

Passive construction, in Langacker's view, is an alternation of the trajector-landmark alignment in the action chain. Specifically, the trajector is not conferred on the most agent-like participant as in the default coding; instead, the landmark in the default coding becomes the trajector and occupies the subject position in the clause. For example, (2.8a) represents the trajector-landmark alignment in the default coding where the agent (*Floyd*) is the trajector and the theme (*the glass*) is the landmark.

(2.8) a. [*Floyd*]^{TR} *broke* [*the glass*]^{LM}.

b. [*The glass*]^{TR} *was broken* [*(by Floyd)*]^{lm}.

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However, in passive construction, the trajector-landmark alignment is reversed. In (2.8b), the theme (*the glass*) becomes the primary focus as the trajector while the agent (*Floyd*) loses its status of a focal participant and is realized as the oblique *by*-phrase. If the *by*-phrase is expressed, it is the secondary landmark at best. On the contrary, if the agent is unexpressed, it remains part of the base.

The analysis of the reversal of trajector-landmark alignment, in fact, echoes with Shibatani (1985) that "agent defocusing" (p. 830) is argued to be the primary function of passive construction. The "agent defocusing" function is useful in certain occasions where the agent is less important or generalized, as in *the resource is wasted (by people)*. Since we direct attention to the wasting of resource, together with the generalized agent (*people*), the trajector is conferred to *the resource*.

The passive construction provides an alternative construal imposed on the action chain, in which the agent is de-focused and downgraded as the participant with less prominence. In the passive construction, the agent could, at best, be realized as the oblique *by*-phrase or even not realized in the clause. In the next section, the middle construction which imposes another construal on the action chain will be introduced.

2.1.3.2 *Middle construction*

Middle construction (so-called 'middles' or 'middle voice') has been in the great interest between linguists in terms of its features and the comparison with other constructions (Langacker, 1991; Kemmer, 1993; Yoshimura & Taylor, 2004; Davidse & Heyvaert, 2007). A typical middle construction, as indicated by Yoshimura and Taylor (2004:294), is in the construction of [NP + Verb + (Adjunct)], for example, *the door opened easily*. Since the construction only takes one participant in the subject position, middle construction is a subcategory of intransitives. Yoshimura and Taylor (2004:303) offered the characterization of middle construction:

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> A middle expression presents a non-Agent participant as possessing certain inherent properties which significantly facilitate, enable (or, as the case may be, impede) the unfolding of the kind of process designated by the verb phrase; at the same time, the contribution of the Agent to the process, though not erased, is backgrounded.
>
> (Yoshimura & Taylor, 2004:303)

Some properties of middle construction could be elicited. First, the participant of the grammatical subject cannot be the agent but others. In *The door opened easily*, the subject NP *the door* is the theme, and thus fulfills the property of middles. Then, the second property is that the inherent property of the subject NP should be able to facilitate or enable (so-called "letting" in Davidse & Heyvaert, 2007:39) the process the verb phrase designates. For example, in *The door opened easily*, the door could be opened easily possibly due to its property, say, a high-quality pivot hinge. Note that it is the verb phrase, *opened easily*, that the subject NP (*the door*) enables. In other words, a good pivot hinge, the inherent property of *the door*, not merely enables the door to *open* but to *open easily*.

Equally important is that, as argued in Langacker (2008:385), the adverb *easily* is critical to distinguish middle construction from absolute intransitive construction (so-called 'unaccusatives' in Yoshimura & Taylor, 2004:299). In *The door opened easily*, the adverb *easily* in the middle construction "implies the willful effort of an agent" (Langacker, 2008:385). However, without the adverb *easily,* the expression *The door opened* "construes a thematic process in absolute fashion" (p. 385) in absolute intransitive construction. The similarity between middle construction and absolute intransitive construction is the trajector conferred on the profiled theme. The major

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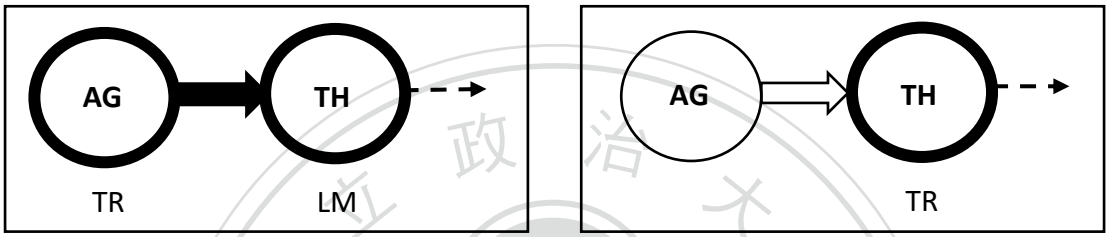
difference between them resides in the prominence of the unprofiled agent. While middle construction implies the existence of agent (though not prominent enough to be profiled), absolute intransitive construction particularly reduces the agentivity "without explicitly invoking an agent" (Langacker, 2008:371).

Langacker (1991:335) illustrated the constructions above by the diagrams below.

(a) Active Transitive: *I opened the door.* (b) Middle: *The door opened easily*



(c) Absolute Intransitive: *The door opened.* (d) Passive: *The door was opened by me.*

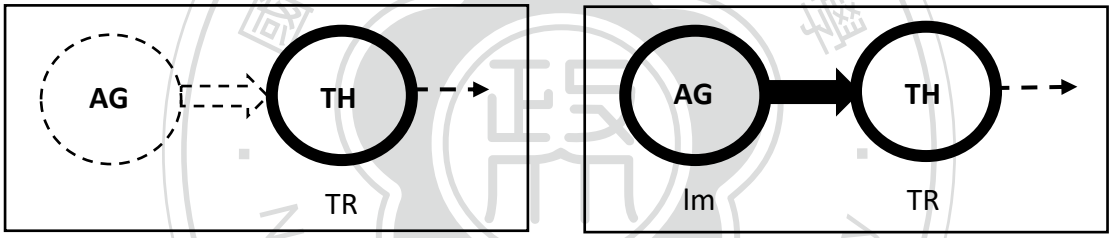


Figure 2.6 *Constructions with trajector-landmark alignment (Langacker, 1991:335)*

Diagram (2.6a) represents the default coding in active transitive construction where the trajector is the agentive participant and the landmark is the theme. Other diagrams except for diagram (2.6a) represent different construals of the same opening event. The similarity among the three alternative construals is to defocus the energy source, that is, the agent. Then, the difference among the three construals resides in the degree of 'agent defocusing'. To illustrate, in diagram (2.6d), passive construction allows the agent to be realized in an oblique as a secondary landmark or unprofiled in the base. In contrast, both middle and absolute intransitive construction do not allow the profiling of agent. For instance, **The door opened (easily) by me* is unacceptable. However, as indicated above, the adverb *easily* in middle construction implies the

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agent, and thus the circle is still in solid line. As for the absolute intransitive construction in diagram (2.6c), it reduces the prominence of agent the most by the absolute construal, the circle representing agent is dashed.

2.1.4 The approach of the thesis

In this sub-section, we discuss and justify the adjustments made in this thesis. To start with, as for the frame (or the conceptual base) evoked by SUBSTITUTE, although the difference between the {REPLACING} and the {TAKE PLACE OF} frame has been recognized in the FrameNet, this thesis argues that the {REPLACING} frame alone is sufficient for the following reasons.

As indicated in section 2.1.1, the omission of core FEs may render the frame incomplete, yet, we observe that the {TAKE PLACE OF} frame still holds even if the core FE, 'FUNCTION' or 'ROLE', does not exist in the frame. In our perspective, it seems that the 'FUNCTION' or the 'ROLE' only provide a more detailed description of the {TAKE PLACE OF} frame.

For example, in (2.9), the 'ROLE' of the 'NEW' (*Angel*) could be a substitute player in a football game although the 'ROLE' is not presented in the sentence.

(2.9) *Now* [NEW *Angel*] *would have to* ***substitute*** [OLD *for Lorenzo*]. (FrameNet)

However, it seems that either the 'ROLE' or the 'FUNCTION' of the 'NEW' is trivial in the {TAKE PLACE OF} frame because their absence in the frame does not make the event (i.e. the 'NEW' takes the place of the 'OLD') incomplete. Both of them ('FUNCTION' and 'ROLE') function to provide the more detailed description of either the 'NEW' or the 'OLD' of the frame, they may not be essential in nature. Note that the 'absence' of the core-FEs in the frame refers to the absence in the knowledge structure

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rather than in the linguistic expressions. What we are arguing is that both 'FUNCTION' and 'ROLE' should not be part of the core-FEs of the {TAKE PLACE OF} frame since the absence of the core-FEs in the frame renders the frame incomplete; however, we observed that the {TAKE PLACE OF} frame still holds without 'FUNCTION' and 'ROLE'.

In addition, as indicated in the definition of the frame, both 'FUNCTION' and 'ROLE' are "implicit" in many cases (cf. Table 2.2); in other words, they are usually not expressed in sentences, as in (2.9). Since the occurrence of 'FUNCTION' or 'ROLE' is limited, the annotation of these two FEs appears to be less necessary. Therefore, we argue that only 'NEW' and 'OLD' are the real core-FEs of the {TAKE PLACE OF} frame, and 'FUNCTION' and 'ROLE' should be considered to the non-core FEs.

Then, a further question arises: is it necessary to distinguish the {REPLACING} frame and the {TAKE PLACE OF} frame? By comparing these two frames, it seems that the only difference resides in the existence of 'AGENT'. If the event is instigated by a conscious entity (usually humans), it evokes the {REPLACING} frame (see 2.10a); if not so, it evokes the {TAKE PLACE OF} frame (see 2.10b).

(2.10) a. [AGENT *He*] ***substituted*** [NEW *lower price labels*] [OLD *for those on the goods*]. (HXE-272)[9]

b. [NEW *The lower price labels*] ***substituted*** [OLD *for those on the goods*]. (self-constructed example)

However, the argument that the lack of 'AGENT' makes the {TAKE PLACE OF} frame distinct from the {REPLACING} frame may be greatly challenged in (2.10b). In (2.10b), although the 'AGENT' is not explicitly realized in the sentence, according to

[9]All examples, unless otherwise stated, were taken from one corpus, the BNC corpus.

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our experience and world knowledge, *the lower price labels* does not automatically take the place of *those on the goods*. Presumably, there may be an implicit 'AGENT' instigating the action of substituting, as in (2.10a). Alternatively, (2.10b) could be comprehended as the profiled portion in the event of substituting. In other words, while the 'AGENT' is included in the event, as in (2.10a), the participant is not profiled or focused in (2.10b). It follows that the boundary between the {REPLACING} frame and the {TAKE PLACE OF} frame could be understood as a matter of profiling in the sense that the {TAKE PLACE OF} frame is part of the {REPLACING} frame. Therefore, it is argued that SUBSTITTUE should only evoke the {REPLACING} frame, in which the {TAKE PLACE OF} frame is incorporated.

Then, we change 'NEW' to 'IN' and 'OLD' to 'OUT' in order to avoid the confusion with the terms in the later chapters of information structure.

Therefore, in this thesis, SUBSTITUTE only evokes the {REPLACING} frame in which 'AGENT', 'IN', and 'OUT' are the core FEs of the frame, as in Table 2.3.

Table 2.3 *The definitions of the {REPLACING} frame and its core FEs (adapted from the FrameNet)*

Frame	REPLACING	
Definition	An 'AGENT' changes the filler of a role by placing an 'IN' filler in the position after the 'OUT' filler ceases to occupy the position.	
Core FEs	'AGENT'	The conscious entity, generally a person, that performs actions resulting in the 'IN' entity occupying the position.
	'IN'	The 'IN' entity is the person or thing that the 'AGENT' sets to fill a role
	'OUT'	The entity that formerly occupied the position.

Then, a new question may arise if we adopt Langacker's (2008) action chain model to analyze the underlying construals of the sentence patterns. Sentences like

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They could substitute new goals which represent the event of substituting may not be force-dynamic in nature. Then, could the event of substituting be compatible with the action chain model which is, in general, force-dynamic in nature? Croft (2012:231) discussed the event of substituting in the 'noncausal' (i.e. not force-dynamic) category. However, Croft (2012:232) still applied the action chain to represent the noncausal events for the reasons below.

> The fact that the most common noncausal relations to lexicalized in verbs, space and possession, are generally construed as causally asymmetric, suggests that the causal organization of event structure is a powerful factor in the human conceptualization of events for linguistic expression.
>
> (Croft, 2012:232)

In other words, although the event of substituting may not be force-dynamic in nature, it could be construed to have force-dynamic relations in the action chain. Therefore, in this study, the action chain model was adopted to represent the event of substituting.

In section 2.1, we have reviewed the conceptual approach which holds the thesis that the encoding of clause structure comes from the conceptual structure. We started from Frame Semantics (Fillmore, 1982, 1985, 2006) in which the conceptual structure (i.e. frame) of a verb serves as the background and against which the frame elements are realized in clauses. Furthermore, Langacker (1991, 1999, 2008) proposed the cognitive mechanisms related to the conceptual structure and the encoding of clause structure. Specifically, prominence is one of the fundamental mechanisms which represents different construals that language users may impose on the same event. For one thing, profiling makes the selected participants prominent in the conceptual base. Then, different degrees of prominence conferred on the profiled participants forms the

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trajector-landmark alignment which reflects different construals imposed on the same event. Therefore, the coding of event in clauses is argued to be the manifestation of variant construals in different constructions. Conversely, each construction represents a particular construal of the event.

In the next section, we review the information structure of the constructions in discourse.

2.2 Information Structure and Constructions

As indicated in Langacker (1991), there are two basic sources for the different choice of constructions. One is the construal, as illustrated in the previous section, and the other is the "discourse consideration motivate[ing] the departure from unmarked coding" (van Oosten, 1986, as cited in Langacker, 1991:298). In other words, discourse is the other factor resulting in the choice of alternative construction (e.g. passive construction) other than the default coding in active transitive construction.

As defined by Langacker (2008), 'discourse' referred to "where any number of sentences (or fragments thereof) are connected to form a coherent linguistic production—be it a conversation, a monolog (e.g. a speech), or a written text" (p. 457). Indeed, the communication in our daily lives is seldom achieved within a single sentence. We mostly produce a sequence of sentences to express complex meanings. Therefore, the investigation of the clause structure should not be confined in a sentence level but a discourse level.

Communication is interpersonal, which means the considerations of sentence production entails not only speakers/writers but hearers/readers. When speaking to hearers, we, to some extent, put ourselves in hearers' shoes in order to engage in a successful communication. Specifically, successful communication, as indicated by Hilpert (2014), "depends in a large measure on presenting new information in such a

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way that hearers can easily integrate that information with things that they already know" (p. 102). In other words, one crucial factor in achieving successful communication is the effort the hearers expend to 'get' the information. The less effort hearers expend, the more possible the communication can be successful. Therefore, to minimize the effort required for hearers, speakers particularly make new information built on the information that hearers already know (i.e. old information) in information structure. In doing so, hearers can get new information by integrating with old information without much expense of effort. In fact, this strategy or tendency has been well recognized in English by 'old-before-new principle' (Chafe, 1994; Ward & Birner, 2004); specifically, it is defined by Ward and Birner (2004) that "information that is assumed to be known tends to be placed before that which is assumed to be new to the hearer" (p. 163).

Then, with a view to exploring the relation between the 'old-before-new principle' and the constructions, we need to recognize the distinction between 'old' and 'new' information in the information structure. In the next section, we review Prince's (1992) taxonomy of old/new information due to its continuous adoption in discourse-related language studies, as in Netz & Kuzar (2019) and Zeyrek (2019). We focus on Prince's (1992) taxonomy in the next section.

2.2.1 Prince's (1992) taxonomy of old/new information

'Old/new' information, as indicated by (Prince, 1992), refers to the "information status of the discourse entity it represents" (p. 298). In other words, the term 'information status' represents the 'old/new' status of a discourse entity (mostly NP) in information structure. Prince (1992:309) proposed that 'old/new' information falls into two models: one is 'Discourse-Model' and the other is 'Hearer-Model'. We illustrate these two models of information status below, respectively.

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The Discourse-Model presents the information status of entities in the discourse. Prince (1992:303) explained this dimension as follows.

> [A]n NP may refer to an entity that has already been evoked in the prior discourse-stretch, or it may evoke an entity which has not previously occurred in the prior discourse-stretch.
>
> (Prince, 1992:303)

In other words, the distinction between 'new' and 'old' in Discourse-Model resides in whether the NP has been mentioned in the prior discourse. If the NP has been mentioned in the discourse, the NP is 'discourse-old'. On the contrary, if the NP occurs for the first time in the discourse, it is 'discourse-new'.

To illustrate, Prince (1992:303) adduced a conversation in which (2.11b) is the response to (2.11a).

(2.11) a. *I'm waiting for it to be noon so I can call Sandy Thompson*.
(Prince, 1992:303)

b. *Why are you trying to get in touch with Sandy Thompson?* (*ibid*)

In (2.11a), the NP *Sandy Thompson* occurs for the first time in the discourse, and thus it is 'discourse-new'. On the contrary, the same NP *Sandy Thompson* in (2.11b) has been mentioned in (2.11a), and thus it is 'discourse-old'.

In contrast to the Discourse-Model, the distinction of information status in the Hearer-Model resides in "the speaker's beliefs about the hearer's beliefs" (Prince, 1992:301). In other words, the speaker's assumption of what the hearer knows and what the hearer does not know is the major concern in 'hearer-status'.

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For illustration, Prince (1992:301) presented a scenario as follows. Imagine the scenario that you are having a conversation with your neighbor, and you believe that your neighbor does not know *Sandy Thompson*. In other words, you believe that *Sandy Thompson* is 'new' information to your neighbor. You may utter the sentence like (2.12a) in which the NP *someone in California* is 'hearer-new' in Hearer-Model.

(2.12) a. *I'm waiting for it to be noon so I can call someone in California.*

(Prince, 1992:303)

b. *I'm waiting for it to be noon so I can call Sandy Thompson.* (*ibid*)

On the other hand, if you change your addressee to your colleague who knows well about *Sandy Thompson*, you would not utter (2.12a) but (2.12b) since you believe your colleague knows *Sandy Thompson*. That is, *Sandy Thompson* is old information to your colleague. Therefore, in (2.12b), the NP *Sandy Thompson* is 'hearer-old' in the Hearer-Model.

Importantly, we should clarify that the 'hearer-status' is all about the belief or assumption that a speaker holds to the hearer's mind rather than the actual information status of the entity in the hearer's mind. For example, it is possible that the speaker has a false belief in what the hearer knows. In (2.13), from the hearer's response, we can tell that the speaker has a false assumption that the hearer knows *Sandy Thompson*, and thus the NP *Sandy Thompson* is 'hearer-old'.

(2.13) SPEAKER: *I'm waiting for it to be noon so I can call Sandy Thompson.*

(Prince, 1992:303)

HEARER: *Who is Sandy Thompson?*

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Whether the hearer knows *Sandy Thompson* is inconsequential in 'hearer-status'. Instead, the belief which the speaker holds is crucial. The NP *Sandy Thompson* in (2.13) remains 'hearer-old' since it only presents the speaker's belief.

The Discourse-Model and the Hearer-Model represent different aspects of the information status of a NP in information structure. In other words, in Prince's (1992) taxonomy, the information status of a NP entails these two models. The Discourse-Model and Hearer-Model cross-cut each other and give rise to four kinds of information status as follows.

2.2.1.1 *'Discourse-new' and 'Hearer-new'*

The combination of 'discourse-new' and 'hearer-new' demonstrates that the NP is the first occurrence in the discourse and that the speaker believes the hearer knows nothing about the NP. In (2.14a), the NP *someone in California* corresponds to this combination. Since the speaker assumes the hearer has little knowledge of the person the speaker is talking about (i.e. 'hearer-new'), the speaker chooses the NP *someone in California* instead of specifying the person, for example, by a name.

(2.14) a. *I'm waiting for it to be noon so I can call someone in California.*

(Prince, 1992:303)

b. *I'm waiting for it to be noon so I can call Sandy Thompson.* (*ibid*)

2.2.1.2 *'Discourse-new' and 'Hearer-old'*

In contrast to the combination of 'discourse-new' and 'hearer-new' in (2.14a), the NP *Sandy Thompson* in (2.14b) is uttered due to the information status of 'hearer-status'. Since the speaker believes the hearer knows the person the speaker is referring to (i.e. 'hearer-old'), the NP *Sandy Thompson* is chosen to specify the person.

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2.2.1.3 *'Discourse-old' and 'Hearer-new'*

According to Prince (1992:309), this combination hardly exists for the reason as follows.

> [I]f an entity has had a prior evocation in a discourse-model, then it follows that it is now Hearer-old, as well as Discourse-old: hearers are assumed to remember the entities we have told them about, at least for the duration of the discourse.
>
> (Prince, 1992:309)

Since the entity is 'discourse-old' in the prior discourse, in normal circumstances, hearer would pay attention to the NP, and thus it was impossible to be 'hearer-new'.

However, it is necessary to clarify the part of 'hearer-old' in the reasoning above since it may be misleading to some extent. The description "hearers are assumed to remember the entities we have told them about" (Prince, 1992:309) creates an illusion that the entities are 'hearer-old' due to the storage of the entities in the hearer's mind, which may, in turn, cause a false understanding that the 'hearer-old' is derived from the hearer's perspective. In other words, since the entities are stored in the hearer's mind, they are 'hearer-old' to the hearer. However, this understanding misunderstood Prince's (1992) definition of 'hearer-status'. Note that the definition of 'hearer-status' emphasizes 'the speaker's belief in the hearer's knowledge' from the speaker's perspective. Therefore, the entities are 'hearer-old' because the speaker believes that the hearer would notice the entities in the prior discourse and that the entities should be old information to the hearer.[10] Therefore, the combination of 'discourse-old' and 'hearer-new' does not exist.

[10] We use the verb *notice* instead of *know* in Prince (1992:301) in order to be consistent with the argument that when the entity is 'discourse-old', it should be 'hearer-old' as well. In other words, the

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2.2.1.4 *'Discourse-old' and 'Hearer-old'*

This combination represents the situation in which the NP has been mentioned in the prior discourse (i.e. 'discourse-old') and that the speaker believes the NP is old information to the hearer due to its previous occurrence in the discourse (i.e. 'hearer-old'). In *I'm waiting for it to be noon so I can call Sandy Thompson. I figure she will be up by 9, her time* (Prince, 1992:309), the pronoun *she* corresponds to this situation. The fact that *she* can be referred anaphorically to *Sandy Thompson* demonstrates the pronoun *she* is 'discourse-old'. Then, since the speaker assumes the hearer has noticed *Sandy Thompson* in the prior discourse, *she* is believed to be 'hearer-old' in hearer's head.

2.2.1.5 *Inferrables*

While the distinction of the four combinations is seemingly clear-cut, Prince (1992:304) proposed 'Inferrable' as an information status in the gray area of this taxonomy that:

> [W]hen a speaker evokes some entity in the discourse, it is often the case that s/he assumes that the hearer can infer the (discourse-) existence of certain other entities, based on the speaker's beliefs about the hearer's beliefs and reasoning ability.
>
> (Prince, 1992:304)

In *He passed by the Bastille and the door was painted purple.*, *the door* could be an 'Inferrable' which rests on the assumption that the speaker believes the hearer

use of *notice* allows the possibility that the hearer does not know the entity but remember its form (cf. the 'name' of *Sandy Thompson* uttered by the hearer).

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knows *the Bastille* is a building and that *the door* could be inferred as the door of *the Bastille*. However, Prince (1992:305) acknowledged that this inference is uncertain in that it impinges on "the special prior knowledge" (p. 305). In the case of *the Bastille*, this prior knowledge refers to the knowledge that *the Bastille* is a building. In other words, for those who do not know *the Bastille*, *the door* would be treated as 'discourse-new' and 'hearer-new' in that the hearer cannot find the link between *the Bastille* and *the door*, and thus the use of inference is impossible.

In this section, we have reviewed Prince's (1992) taxonomy of information status in old/new information. By combining the 'discourse-status' and 'hearer-status' in the information status, three different kinds of information status are identified, including 'discourse-new and hearer-new', 'discourse-new and hearer-old', and 'discourse-old and hearer-old'. In addition, Prince (1992) proposed 'inferrable' as a special kind information status with fuzzy boundaries with other kinds of information status.

Having introduced the taxonomy of old/new information in Prince (1992), we are on the ground to explore how the information status of the NP conforms to the 'old-before-new principle' in the configuration of clause structure. In the next section, we will introduce 'Preferred Argument Structure' (Du Bois, 2003) which integrates the factor of the 'old/new' information into the configuration of the argument structure.

2.2.2 Preferred Argument Structure

Argument structure, the combination of a verb and its arguments required by the verb, was mostly focused on its interface between the syntactic and semantic level (Levin & Rappaport Hovav, 2005; Mateu, 2014). Du Bois (2003) re-examined argument structure in the discourse level. Specifically, Du Bois proposed the 'Preferred Argument Structure' which displays some statistical tendencies of 'old/new' information in argument structure in spontaneous language.

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Two “soft constraints” (Du Bois, 2003:34) are proposed at both syntactic and discourse level: one concerns the quantity while the other concerns the argument realization (i.e. lexical NP or pronoun). In addition, note that Du Bois (2003) used the terms ‘A role’ for the subject of a transitive verb, ‘S role’ for the subject of an intransitive verb, and ‘O role’ for the direct object of a transitive verb. However, since we do not need these terms in this study, we used the ‘transitive subject’ for the ‘A role’, the ‘intransitive subject’ for ‘S role’, and the ‘transitive object’ for the ‘O role’.

The two ‘soft constraints’ will be illustrated below. We start with the constraints in the syntactic level and then move on to the discourse level.

In the syntactic level, the soft constraint of quantity stipulates that “no more than one lexical NP appears among the predicator’s core argument” (p. 34). Du Bois (2003:35) adduced the sentence *I still miss my grandmother* to illustrate the constraint. This sentence conforms to the constraint in that only one argument (*my grandmother*) of the predicate is a lexical NP and the other is a pronoun (*I*). Note that the constraint sets the maximum limitation but not the minimum. It is possible that none of the argument was lexical NP, as in *And so you would hit that* (Du Bois, 2003:35). In addition, it should be noted that these constraints were argued to be “soft” in that they can be violated in actual language use even though the occurrence may be rare.

Then, the soft constraint of argument realization in the syntactic level (Du Bois, 2003:34) stipulates that ‘the lexical NP excludes the transitive subject’.[11] As demonstrated above, both the subject arguments in *I still miss my grandmother* and *And so you would hit that* conform to this constraint, and thus they are preferred.

[11] Du Bois (2003) used the terms ‘A role’ for the subject of a transitive verb, ‘S role’ for the subject of an intransitive verb, and ‘O role’ for the direct object of a transitive verb. However, since we do not need these terms in this study, we used ‘transitive subject’ for the ‘A role’, intransitive subject for ‘S role’, and transitive object for ‘O role’.

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In fact, the two soft constraints in the syntactic level are related to the two soft constraints in the discourse level as follows. The soft constraint of quantity in the discourse level stipulates that "no more than one new information is allowed in the predicate's arguments" (Du Bois, 2003:34). This is relevant to the quantity constraint in the syntactic level which stipulates the quantity of lexical NP can be one at most. Since lexical NP mostly carries new information, the quantity constraint in the discourse level represents the consequence to that of syntactic level. Likewise, the soft constraint of argument realization in the discourse level stipulates that 'new information excludes the transitive subject'. Since the transitive subject does not prefer the lexical NP, as stipulated in the syntactic level, new information (usually represented by lexical NP) tends to exclude transitive subject. The two soft constraints in the syntactic and discourse level were summarized in Table 2.2.

Table 2.2 *Two soft constraints in the syntactic and discourse level (adapted from Du Bois, 2003:34)*

	Syntactic Level	**Discourse Level**
Quantity	no more than one lexical NP	no more than one new information
Argument Realization	Lexical NP excludes transitive subject.	New information excludes transitive subject

The soft constraints in the Preferred Argument Structure, as argued by Du Bois (2003), reflect both the cognitive and functional factors.

> It is tied to cognitive and pragmatic factors like information management, which influence the realization of arguments as lexical or pronominal, with consequences as described in the previous two constraints.
>
> (Du Bois, 2003:37)

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To illustrate, the choice of argument realization either by a lexical NP or a pronoun may be influenced by the cognitive and functional factors that "as a first mention in the discourse, it is relatively less accessible and thus requires a more substantial lexical realization" (p. 38). In other words, since new information demands the more effort (termed 'activation cost' in Chafe (1994)) from the hearer, it needs more lexical resources. For example, in *He named like half a dozen viruses*, since *half a dozen viruses* is the first mention in the discourse (i.e. 'new' information), it demands more lexical resource and thus realized in the lexical NP. In contrast, since the pronoun *he* has been mentioned in the prior discourse (i.e. 'old' information), it does not require much lexical resource and thus realized in the pronoun.

With these soft constraints, we examine the preferred argument structures in transitive verbs and intransitive verbs; as for intransitive verbs, since they are not found in SUBSTITUTE, we do not review them below.

2.2.2.1 *Transitive verbs*

Transitive verbs require two arguments. Following the soft constraints in the syntactic and discourse level, the argument structure has one argument as new information at most, and the transitive subject excludes new information. In other words, new information is preferred in the transitive object. Du Bois (2003) argued that "the general pattern for two-place predicates is that only one core argument typically carries new information, and this argument is not the A" (p. 38). Thus, (2.15a) is the preferred argument structure of the transitive SUBSTITUTE since it only includes new information *the rights* and new information is not the transitive subject ('A role').

(2.15) *He may have sold the rights.* (Du Bois, 2003:38)

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2.2.2.2 *Intransitive verbs*

The argument structure in intransitive verbs requires one argument as the intransitive subject. Du Bois (2003) presented the observation of preferred argument structure in intransitive verbs as follows.

> As for one-place predicates, once again they are the least constrained, because the quantity constraint on new arguments does not affect them. This gives them special importance as a site for the introduction of new information. The S role freely realizes new information.
>
> (Du Bois, 2003:38)

In other words, since only an argument is required, the argument structure of intransitive verbs is free from the one lexical NP constraint in the syntactic level and one new information constraint in the discourse level.

Then, as indicated above, new information is preferred in intransitive subject of the argument structure. In (2.16), *this new wave of people* is new information realized in intransitive subject.

(2.16) *This new wave of people* ***comes*** *in.* (Du Bois, 2003:38)

Du Bois's (2003) observations of the preferred argument structures of the transitive and intransitive verbs are summarized as follows. In the syntactic level, the lexical NP is preferred to occur once at most either in intransitive subject or transitive subject but excludes transitive subject. Then, in the discourse level, the 'new'

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information is preferred either in intransitive subject or transitive object but not the transitive subject.

The findings in the Preferred Argument Structure (Du Bois, 2003) are consistent with the 'old-before-new principle' (Chafe, 1994; Ward & Birner, 2004) in that 'new' information prefers the transitive object which is subsequent to the transitive subject. In particular, Du Bois (2003) emphasized that the Preferred Argument Structure is "a preference in discourse for a certain grammatical configuration of argument realizations" (Du Bois, 2003:53), which means that the configuration or the choice of argument realizations may reflect the impact of information status of the NPs. It further substantiates the notion that the information status of a given entity in the discourse may influence the configuration of argument structures.

Importantly, we should exercise caution with Preferred Argument Structure in its nature of the preferred tendency in "spontaneous language" (Du Bois, 2003:33). However, Du Bois (2003:39) argued for its compatibility in written genres in that "some written language genres follow the constraints was presented for Brazilian Portuguese by Brito (1996)" (p. 39). In addition to Portuguese, some literatures, including Everett (2009) and Okugiri (2014), reported the consistent result as that in spoken data in English written texts. Therefore, we believe that the Preferred Argument Structure should be applicable in both spoken and written genres of English.

In this section, we have reviewed the discourse factors in the configuration of clause structure. In section 2.2.1, we reviewed the more fine-grained distinction of information status in old/new information in Prince (1992). Then, in section 2.2.2, Du Bois (2003) proposed Preferred Argument Structure in which old/new information comes into play in the configuration of argument structures. It is evident that the

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analysis in the discourse level should be included in the investigation of clause structure.

2.3 Summary of the Chapter

In this chapter, we have reviewed theories and approaches relating to the configuration of clause structures. In section 2.1, we started with the conceptual approach toward clause structures, specifically Fillmore's (1982, 1985, 2006) Frame Semantics and Langacker's (1991, 1999, 2008) notions of construals, including 'profiling', 'trajector-landmark alignment', and 'action chain model'. Then, in section 2.2, our review went beyond the sentence level and reviewed the information structure at the discourse level. Specifically, Prince (1992) provided a fine-grained taxonomy of information status, and Du Bois (2003) demonstrated the Preferred Argument Structure in which information structure came into play in the configuration of constructions. The review in section 2.1 and 2.2 has demonstrated that both the construal underlying linguistic expressions and the information structure could be the contributing factors of the configuration of constructions. In other words, by analyzing the construal and information structure in the sentence patterns of SUBSTITUTE, we could reveal how language users construe the event of substituting and how they arrange the information structure of the sentence patterns. In the next chapter, we move on to introduce our methodology to analyze these two aspects of the sentence patterns of SUBSTITUTE.

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CHAPTER 3

METHODOLOGY

This study aims to investigate the use of SUBSTITUTE as a verb in the following aspects: (a) the construal of each sentence pattern, particularly the trajector-landmark alignment in profiled participants; (b) the distribution of each sentence pattern in natural occurring language; (c) the information status of the profiled participants in sentence patterns. In this chapter, we introduce the methodology we took to address these issues.

3.1 The Corpus

In order to investigate SUBSTITUTE in natural occurring language, we used the British National Corpus (BNC) as the source to retrieve the language data. It possesses a 100 million word collection including written and spoken language. In written data, BNC covers newspapers, academic books, and other written texts. Its spoken collection ranges from business to government meetings in different contexts.

3.2 The Method for Extracting Data

In this study, we used '{substitute}_V*' as the query term of the BNCweb. The result of the search returned 1314 hits in 659 different texts with the frequency of 13.37 instances per million words.

After the extraction of the corpus data, the filtering of the corpus data was conducted manually. Two kinds of concordance lines were excluded in our study. First, the wrong POS-tagging in the concordance lines were removed. For example,

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the *substitute* in (3.1) is used as the noun modifier which presents the identity of *Andy Payton* as a substitute player.

(3.1) ***Substitute*** *Andy Payton had a chance after Stuart Ripley went off with a dead leg.* (K4T-3754)

Since the SUBSTITUTE in (3.1) is not a verb, we removed it from our analysis. In addition, we also ruled out any repeated concordance lines and kept one for analysis.

Then, according to the *Oxford English Dictionary*, in mathematics, SUBSTITUTE specifically means that 'to put (a quantity) into an equation, formula, etc., in the place of an existing quantity wherever the latter occurs'. Due to its conventional meaning in mathematics, we do not include the SUBSTITUTE in mathematics in our analysis of construal and information status. However, being the verbal SUBSTITUTE, they are counted as part of the total number.

Then, after filtering the corpus data, 1104 concordance lines (excluding the 'mathematics' category) were left for analysis. Among them, 95.5% of instances are in written texts (1055 hits), while only 4.5% of uses belong to spoken data (49 hits).

3.3 Data Analysis

In this section, we introduce the criterion of the annotations required to answer the research questions. First, to answer the first two research questions concerning the types and distribution of sentence pattern, the criterion of recognizing a distinct sentence pattern is introduced in section 3.3.1. Then, as for the construals underlying the sentence patterns, the annotation of the profiled participants is introduced in section 3.3.2 and the trajector-landmark alignment is in section 3.3.3. Then, in section 3.3.4, the geometrical representation of the construals in action chains will be

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illustrated. Lastly, the hypotheses and the criterion of annotating information status will be offered in section 3.3.5.

3.3.1 Recognition of Sentence Patterns

In the present study, the recognition of sentence patterns follows Langacker's (2008) notion that language is "symbolic in nature" (p. 5). Simply put, language is a system constituted by the form-meaning pairs. This view is shared in the community of Cognitive Linguistics that "syntactic structures at various levels of schematicity are considered meaningful in their own right" (Croft & Cruse, 2004, as cited in Gries & Stefanowitsch, 2007:2). This view denies the postulate in Generative Grammar (Chomsky, 1986) that the surface form of language is derived from the deep structure through the process of transformation. For example, the surface form of the passive construction (see 3.2a) is considered the result of transformation from deep structure of (3.2b). In other words, in Generative Grammar, the passive construction does not have its own right but a derivative surface form of the active transitive form.

(3.2) a. [OUT *The drugs*] *was* ***substituted*** [IN *with another substance*] [AGENT *by Customs officers*].

b. [AGENT *Customs officers*] ***substituted*** [OUT *the drugs*] [IN *with another substance*]. (K4M-734)

However, as we follow the view that language is the form-meaning pairs in nature, we recognize that the passive construction of (3.2a) is meaningful and has its own right. In other words, (3.2a) is the passive construction distinct from the active transitive construction of (3.2b). Then, in the passive construction, (3.2a) forms the more specific sentence pattern in the brackets: [NP_{OUT} + be + Verb-pp + *with* NP_{IN} +

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by NP_{AGENT}]. That is, the sentence pattern [NP_{OUT} + be + Verb-pp + *with* NP_{IN} + *by* NP_{AGENT}] is one of the manifestations of the passive construction. In contrast, (3.2b) forms the sentence of [NP_{AGENT} + Verb + NP_{OUT} + *with* NP_{IN}] as one of the manifestations of the active transitive construction. In addition, the tense and aspect of SUBSTITUTE are considered negligible, and thus the past tense in (3.2c) is neither labeled in the sentence pattern nor recognized to form a distinct sentence pattern.

3.3.2 Annotation of the Profiled Participants

We briefly recapitulate Langacker's (1991, 1999, 2008) proposal of profiling as follows. First, the frame (or base) entails the knowledge and experience of the event, such as the commercial transaction event. Then, to describe the experience of the event, language users encode different expressions by profiling different frame elements (i.e. participants) in the frame (i.e. the base) to direct the attention. By making the profiled participants prominent and leaving others unspecified in the base, a certain expression entails the conceptual content and against which a particular construal is imposed, that is, the participants that language users direct attention to.

The notion of 'profiling' is applied in our analysis of SUBSTITUTE, and the 'base' which SUBSTITUTE is profiled against is the {REPLACING} frame, in which three core FEs, 'AGENT', 'IN', and 'OUT' (see Table 2.2, repeated here as Table 3.1), could be profiled to encode the scene as the profiled participants. In this thesis, the terms 'participant' and 'frame element' are used interchangeably, and both refer to the required element of the conceptual base.

In this thesis, the terms 'participant' and 'frame element' are used interchangeably, and both refer to the required element of the conceptual base.

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Table 3.1 *The definitions of the {REPLACING} frame and its core FEs*

Frame	REPLACING	
Definition	An 'AGENT' changes the filler of a role by placing an 'IN' filler in the position after the 'OUT' filler ceases to occupy the position.	
Core FEs	'AGENT'	The conscious entity, generally a person, that performs actions resulting in the 'IN' entity occupying the position.
	'IN'	The 'IN' entity is the person or thing that the 'AGENT' sets to fill a role
	'OUT'	The entity that formerly occupied the position.

Then, since SUBSTITUTE is a verb which profiles a 'relationship' (or 'relational profile' in Taylor, 2003:205), which designates the relation between core FEs in the {REPLACING} frame. In other words, SUBSTITUTE profiles the relationship, specifically the interaction between the core-FEs in the {REPLACING} frame. For example, in *gas can substitute petrol*, SUBSTITUTE designates the relation between the first 'thing' (the 'IN', *gas*) and the second 'thing' (the 'OUT', *petrol*).

The annotation of the profiled participants conforms to the definition of the core FEs in the frame (see Table 3.1). In concordance lines, a given segment would be considered the realization of the profiled participant if the segment fulfills the definition of the participant. The annotation of participant is labeled in the subscript of the particular segment. For example, in (3.3), the NP *you* is the agent performing the action of substituting, and thus 'AGENT' is labeled in the subscript of *you*.

(3.3) [AGENT *You*] *can* ***substitute*** [IN *lime juice*] [OUT *for lemon juice*] *in a recipe.*

Then, since the NP (*lime juice*) is the entity that the 'AGENT' sets to replace the 'OUT', it is labeled with the subscript of 'IN'. As for the prepositional phrase (*for lemon*

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juice), since the lemon juice is the entity being replaced and it is realized in the prepositional phrase, the *for*-phrase is labeled with 'out'. The realization of the three participants makes 'AGENT', 'IN', and 'OUT' are the three profiled participants in (3.3); put it in another way, 'AGENT', 'IN', and 'OUT' are profiled in (3.3).

However, some difficulties were encountered. Given that the concordance lines of SUBSTITUTE came from a wide variety of domains (e.g., sports news and chemistry), the recognition of the profiled participant in the concordance lines may be difficult. If the interpretation of the concordance lines requires less technical knowledge of a specific domain (e.g., sports news), we brought the concordance lines to the members of the Corpus-based research group at National Chengchi University for further examination. Then, as for those requiring some technical knowledge, we looked up *the Oxford English Dictionary* (*OED*) for reference and consulted the resources with the specialties in the specific domain. For example, (3.4) was found in the chemistry domain relating to the substitution between atoms.

(3.4) *Olah, however, managed to perform Friedel-Crafts reactions on these polychlorinated fullerenes, which showed that at least 22 phenyl groups had been* ***substituted****.* (ALW-360)

However, according to *the OED*, the entry of the verbal SUBSTITUTE in chemistry could be either "to put (an atom or group) in the place of an existing atom or group in a molecule" or "to replace (an existing atom or group in a molecule) with a different one". In other words, the NP in the subject position (*22 phenyl groups*) could be either NP_{IN} or NP_{OUT}. Now that the entry of *the OED* is less helpful in distinguishing the role of the NP in question, we turned to the resources with the specialty in chemistry and consulted the online resources, such as Wikipedia, for

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reference.[12] With these resources, we could be certain that the NP (*22 phenyl groups*) in (3.4) is NP_{OUT}.

The other difficulty relates to the annotation of the profiled participants realized by the prepositional phrases. This difficulty comes from the polysemous nature of the prepositional phrases. For example, in (3.5a) the *for*-phrase indicates the 'reason' rather than the 'OUT' participant in the {REPLACING} frame. Similarly, in (3.5b) the *with*-phrase indicates 'having or including something' rather than the 'IN' participant.

(3.5) a. *But the jury accepted that a page of the statement had been **substituted** for legitimate reasons.* (K23-954)

b. *These are my preferences, but many other professional art materials could be **substituted** with similar results.* (CFL-516)

Therefore, to annotate the prepositional phrases accurately, we did not rely on the forms (e.g., *for*-phrase) alone but examine the contexts. Some of the concordance lines were discussed in the corpus group for further examination if they were difficult to pin down.

3.3.3 Annotation of Trajector-Landmark Alignment

Different degrees of prominence are conferred on the profiled participants to reflect the particular construal of language users. As reviewed in last chapter, the primary focus, trajector (TR), is conferred on the subject of the verb, and the secondary focus, landmark (LM), is conferred on the direct object of the verb. In addition to the 'focal participants' as the trajector or landmark, the profiled participant

[12] URL: https://zh.wikipedia.org/wiki/%E5%82%85-%E5%85%8B%E5%8F%8D%E5%BA%94

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in the oblique (e.g. prepositional phrase) is the secondary landmark (lm) in the clause. We label the prominence of each participant in the superscript of the corresponding segment. For example, in (3.4), the 'AGENT' (*Customs officers*) is the syntactic subject of the verb, and it receives the prominence of being the trajector in the clause. The annotation of trajector is labeled in the subscript of the NP *you*. Then, the direct object (*the drugs*) is the primary landmark of the clause, and the landmark (LM) is labeled in the subscript as well. Lastly, the oblique (*with another substance*) is the secondary landmark in the clause with the label 'lm' in the subscript of the prepositional phrase.

(3.4) [AGENT *Customs officers*]^{TR} ***substituted*** [OUT *the drugs*]^{LM} [IN *with another substance*]^{lm}. (K4M-734)

The trajector-landmark alignment in (3.4) reflects the construal in which the interaction between 'AGENT' and 'IN' is the focus, while the 'OUT' participant is made relatively peripheral by realizing it in the oblique.

3.3.4 Diagram as the Representation of Construal

As indicated by Croft (2012:6), "the semantic representations in cognitive linguistics are intended to represent the conceptual structure rather than truth conditions in the world" (p. 6). We follow the tradition of cognitive linguistics that "semantic representations tend to be diagrammatic" (Croft, 2012:6) by drawing the diagram of the conceptualized 'action chain' (Langacker, 1991, 1999, 2008).

Following Langacker (1991, 1999, 2008), we draw the diagram of (3.4) in Figure 3.2 for illustration. In Figure 3.2, each circle represents a participant in the action chain. If the circle is bold, it is profiled in the conceptual base, and thus the three circles are all bold in Figure 3.2. Then, a solid arrow represents the force vector, that

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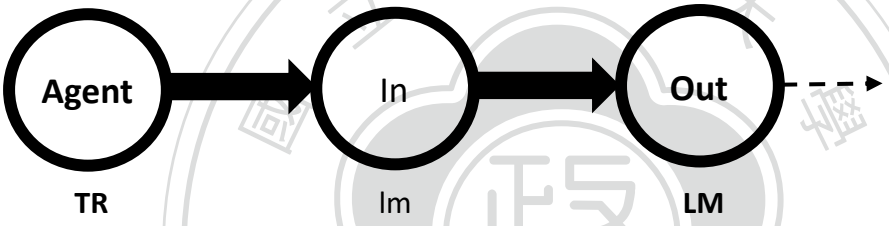
is, the flow of energy in the action chain. In Figure 3.2, the 'AGENT' exerts force to the 'IN' participant, which in turn transfers the energy from the 'AGENT' and affects the 'OUT'. Also, the dashed arrow represents the possible change of state or location in 'OUT' without affecting other participants. While 'AGENT' and 'OUT' are the 'head' and the 'tail' of the action chain, the 'IN' participant is in the central position used as an instrument which affects the 'OUT' by taking the place of it. We take the 'head' and the 'tail' of the action chain, and call it the 'AGENT-OUT action chain'.

Figure 3.2 *Diagram of the 'AGENT-OUT action chain'*



Therefore, in (3.4), it describes the event that the 'AGENT' (*Customs officers*) uses the 'IN' (*another substance*) as the instrument to replace the 'OUT' (*the drugs*). However, the attention is particularly directed to the portion that the 'AGENT' replaces the 'OUT'.

However, the participants are not always included in the energy transmission. In (3.5), the interaction between the 'AGENT' and 'IN' is the focus, while the 'OUT' is realized in the oblique (*for lemon juice*). Despite the equated number of the profiled participants with (3.4), different construals imposed on the event give rise to different action chains. The action chain of (3.5) is diagrammed in Figure 3.3.

(3.5) [AGENT *You*]^{TR} *can* ***substitute*** [IN *lime juice*]^{LM} [OUT *for lemon juice*]^{lm} *in a recipe.* (CEK-4699)

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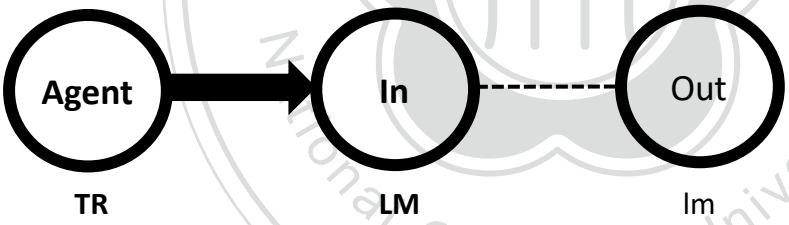
In Figure 3.3, the 'AGENT' exerts force to the 'IN' participants, as in Figure 3.2, but the 'IN' participant does not transfer the energy from the 'AGENT' to the 'OUT' (diagramed in the dashed line). Instead, the dashed line indicates the 'OUT' is merely relevant to the 'IN' participant in the sense that the replaced entity is specified. In other words, in Figure 3.3, 'AGENT' and 'IN' are the 'head' and 'tail' of the action chain, while 'OUT' is merely relevant to the 'IN' participant by specifying the replaced entity. The 'OUT' participant does not hold the force-dynamic relation with the 'IN' participant, and thus it is not part of the action chain. We take the 'head' and the 'tail', and call the action chain in Figure 3.3 the 'AGENT-IN action chain'. It reflects the construal which focuses on the interaction between the 'AGENT' and the 'IN', while the 'OLD' is relatively peripheral.

Figure 3.3 *Diagram of the 'AGENT-IN action chain'*



By comparing Figure 3.2 and Figure 3.3, we can see that different action chains can be conceptualized in the event of substituting. Then, different degrees of prominence are conferred on profiled participants, and in turn represent distinct construals in each action chain. For example, the event of substituting in (3.5) can be realized in another sentence pattern representing different construal, as in (3.6).

(3.6) [IN *Lime juice*]^{TR} *can be* ***substituted*** [OUT *for lemon juice*]^{lm} *in a recipe.*

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While (3.5) and (3.6) share the 'AGENT-IN action chain' in Figure 3.3, they differ in the prominence conferred on the participants. In (3.6), the primary focus is conferred on the 'IN' participant, the 'OUT' is still the secondary landmark, and the 'AGENT' is not profiled. The varying degree of prominence in participants gives rise to distinct construal of an action chain.

However, note that the conceptualization of the event of substituting in different action chains is also a matter of construal. The action chains reflect how language users construe the event of substituting. Specifically, in the 'AGENT-OUT action chain', the event is conceptualized that an 'AGENT' uses 'IN' as an instrument to replace the 'OUT'. However, in the 'AGENT-IN action chain', the event is conceptualized that an 'AGENT' chooses an entity as an 'IN', which occupies the former position of 'OUT'. No force-dynamic interaction occurs between 'IN' and 'OUT' in 'AGENT-OUT action chain'.

In the present study, we draw the diagram for the representation of different construals which encompass an action chain and the degree of prominence conferred on profiled participants.

3.3.5 Annotation of Information Status in Information Structure

Information structure is argued to be potential in distinguishing the role of the particular NP, especially the information status of the NP in the direct object position (e.g., *You can **substitute** margarine in the recipe*) and the NP in the subject position (e.g., *Margarine can be **substituted** in the recipe*). The potential, we argue, comes from the constraint that we can hardly regard new information as the NP_{OUT}. Instead, in the event of substituting, new information tends to be the NP_{IN} as the alternative. For example, imagine the scenario of discussing the ingredients of a meal in the recipe. It is common to use (i.e. NP_{IN}) or remove (i.e. NP_{OUT}) the ingredient that

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originally exists in the recipe as old information. Then, during the discussion, someone proposes to use a new ingredient (i.e. NP_{IN}) that does not exist in the recipe and thus new information to everyone. However, we can hardly introduce a new ingredient while at the same time removing it as an NP_{OUT}. In fact, it would be absurd to claim the newly introduced ingredient (new information) as the NP_{OUT}. In general, it could be more intuitive to propose something new in the discourse as an NP_{IN} rather than an NP_{OUT}. This constraint demonstrates the potential of information status to distinguish the role of NP in SUBSTITUTE, and two hypotheses are proposed as follows. The first hypothesis predicts that the NP being new information tends to be NP_{IN} rather than NP_{OUT}. Then, the second hypothesis predicts that the NP which is old information shows the neutral preference to either NP_{IN} or NP_{OUT} since the constraint of the 'discourse-new' NP as indicated above is precluded.

To attest these two hypotheses, the annotation the information status of the NP in question is needed. In section 2.3.1, we have reviewed the taxonomy of information status proposed by Prince (1992:309). However, we should exercise caution with the context where the taxonomy is used. In particular, the taxonomy of information status in Prince (1992) is mostly applied in conversations between interlocutors, that is, the spoken language. Apparently, this differs from the 95.5% written language in our corpus results of SUBSTITUTE. However, two advantages justify the adoption of Prince's (1992) taxonomy in this study. First, its wide citation and the recent adoption in discourse-related language studies (e.g. Netz and Kuzar (2019) and Zeyrek (2019)) confirmed the validity of the taxonomy. Second, the distinction of information status with respect to ''hearer-status' and 'discourse-status', is straightforward in the coding scheme. Due to these two advantages, the information status of the profiled participants is annotated according to Prince's (1992) taxonomy.

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However, some adjustments of Prince's (1992) taxonomy are made to accommodate the present study. First, we leave out the hearer-status in our annotation and discussion of information status. Since the nature of hearer-status is the speakers' assumption of what the hearers know, this nature may be negligible in written language. Although we acknowledge that writers may infer the knowledge of the readers, the inference is, however, primarily based on the information in the prior written discourse, that is, the discourse-status. In addition, despite the 4.5% concordance lines in spoken language, they are only annotated in their discourse-status in order to maintain the consistency. Therefore, we only annotate the discourse-status of the profiled participants, 'discourse-new' and 'discourse-old', in the present study.

Some examples of 'discourse-new' and 'discourse-old' are given below. In (3.7a), the pronoun *he* can refer anaphorically to the NP *Andrei Kanchelskis* in the prior discourse, and thus the pronoun *he* is annotated as 'discourse-old'. On the other hand, in (3.7b), the NP *a quality, dry pale sherry* cannot be referred back in prior discourse, and thus it is annotated as 'discourse-new'.

(3.7) a. *Andrei Kanchelskis has also received the all-clear. He was* ***substituted*** *at Coventry because of a toe injury.* (K4T-1845)

b. *[Title:Rice wine] Used extensively for cooking and drinking in China, it is made from glutinous rice, yeast and spring water. A quality, dry pale sherry can be* ***substituted****, but cannot equal its unique, rich, mellow taste.* (G2D-750)

The second adjustment of Prince's (1992) taxonomy concerns the information status of 'Inferrables'. We integrate it into 'discourse-new' in the present study for the

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reason that 'Inferrables' are subject to readers and that it is relatively 'discourse-new'. To justify our first reason, we cite the possible counter-argument first. Ward and Birner (2004) argued that 'Inferrables' are the information status "which has not been evoked but can be inferred from the prior context or from a previous constituent contained within it" (p. 155). The inference, as suggested by Ward & Birner (2004), could be related to the preceding discourse "in a number of ways, including such relations as type/subtype, entity/attribute, part/whole, identity, etc." (p. 159). For example, apple and orange could be related in the "simple set inclusion relation" (Ward & Birner, 2004:159) because they are related to each other in the simple set of 'fruit'. However, we argue that being related to previous constituents does not mean the NP is inferable. Specifically, some relations require readers with "special prior knowledge" (Prince, 1992:305) of the entities. For example, in (3.6b), even if most readers may build a 'simple set inclusion relation' between *sherry* and *rice wine*, we cannot guarantee this kind of relation could always be built in readers' inference. Possibly, for someone who knows little about wine, the relation can hardly be established. In order to play safe, we consider the NP *sherry* relatively new in discourse-status since it is not explicitly evoked in the prior discourse. Therefore, 'Inferrables' is integrated in the category of 'discourse-new'.

In this study, the annotation of information status in information structure only entails 'discourse-new' and 'discourse-old'. With these two labels, it is predicted that the 'discourse-new' NP in the sentence pattern tends to be the NP_{IN} instead of the NP_{OUT}. This relation between the role of the NP and the information structure may facilitate the identification of the ambiguous role of NP in SUBSTITUTE.

This chapter has introduced the details of the methodology to analyze the concordance lines of SUBSTITUTE. In the next chapter, we move on to demonstrate the results of implementing the methodology in this chapter.

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CHAPTER 4
RESULTS OF THE SENTENCE PATTERNS AND CONSTRUAL

This chapter presents the results concerning the distribution of SUBSTITUTE in terms of the conceptualized action chains and the variant construals imposed on the action chains. Construals or conceptualized action chains can be observed in the sentence patterns. We generally categorized sentence patterns according to the construals they represent, including the conceptualization of the action chain and the varying prominence of participants in the action chain. In section 4.1, the distribution of the two conceptualized action chains representing the event of substituting is presented. In section 4.2, the distribution of sentence patterns and their underlying construals in the 'AGENT-IN action chain' is presented, and each construal is illustrated in detail. In section 4.3, the distribution of sentence patterns and their underlying construals in the 'AGENT-OUT action chain' is presented along with the detailed illustration of each construal. In section 4.4, the distribution of the profiled participants and their realizations in the sentence patterns is presented. Lastly, in section 4.5, we compare the sentence patterns derived from the different action chains.

4.1 Distribution of the Conceptualized Action Chains of SUBSTITUTE

The sentence patterns of SUBSTITUTE reflect two distinct action chains of the event of substituting. One is the 'AGENT-OUT action chain' in which the 'AGENT' exerts force to the 'IN' participant which in turn transfers the force to the 'OUT' participant, as in Table 4.1a. The other is the 'AGENT-IN action chain' in which the force-dynamic relation is limited to the 'AGENT' and the 'IN' participant only: 'OUT' is not involved in the action chain though it is relevant to the 'IN' participant, as in Table 4.1b. Thus a non-arrow (dotted line) is used to link 'IN' and 'OUT' in Table 4.1b.

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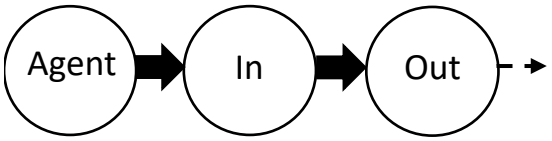
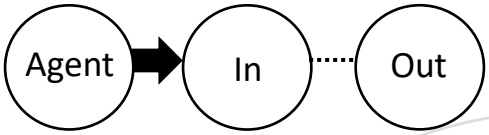
Table 4.1 *Conceptualization of the action chains in the event of substituting*

Action Chain	**Hits**	**Percentage**
(a) AGENT-OUT action chain 	204	18.5%
(b) AGENT-IN action chain 	**900**	**81.5%**
Total	**1104**	**100.0%**

The distribution of each action chain is presented in Table 4.1. It shows that the 'AGENT-IN action chain' accounts for 81.5% of all the instances of SUBSTITUTE, presenting the predominant conceptualization of the event of substituting. The 'AGENT-OUT action chain', on the other hand, accounts for 18.5% of the instances of SUBSTITUTE. The results suggest that when using SUBSTITUTE, language users mostly conceptualize the force-dynamic interaction between the 'AGENT' participant and the 'IN' participant. As for the 'OUT' participant, it is not part of the force-dynamic interaction but its presence is implied in the event.

Then, in each action chain, different construals could be created by the varying degrees of prominence conferred on the respective participants, including the trajector (TR) and the primary landmark (LM). These construals may be reflected by the different sentence patterns of SUBSTITUTE. Note that the secondary landmark (lm) is not included in the categorization of construal. We will start with the sentence patterns and their underlying construals imposed on the 'AGENT-IN action chain' in section 4.2. The sentence patterns and construals in the 'AGENT-OUT action chain' will be presented in section 4.3.

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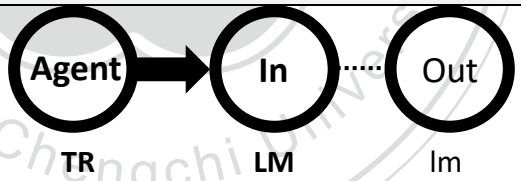
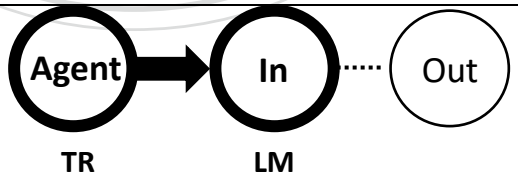
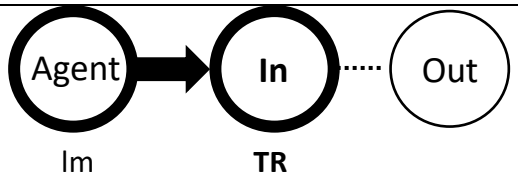
4.2 Construals and Sentence Patterns in the 'AGENT-IN action chain'

The construals imposed on the 'AGENT-IN action chain' are displayed with their corresponding sentence patterns in Table 4.2. In this section, the construals underlying the sentence patterns are introduced in order to compare their distribution and to observe the differences from one construal to another.

Two construals are reflected in the sentence patterns of the 'AGENT-IN action chain'. One is the 'TR (AGENT) + LM (IN)', as in Table 4.2 (a) and Table 4.2 (b), in which both the 'AGENT' and the 'IN' participant receive the focal prominence as the trajector (TR) and the primary landmark (LM), respectively. The other is the 'TR (IN)', ranging from Table 4.2 (c) to Table 4.2 (g), where the 'IN' participant becomes the trajector (TR) as the primary focus of the event. We illustrate the sentence patterns reflecting these two construals in sub-section 4.2.1 and 4.2.2, respectively.

Table 4.2 *Sentence patterns and construals imposed on the 'AGENT-IN action chain'*

Sentence Pattern		**AGENT-IN action chain**
(a)	NP_{AGENT} + Verb + NP_{IN} + *for/in place of* NP_{OUT} NP_{AGENT} + Verb + *for* NP_{OUT} + NP_{IN}	 *You can **substitute** margarine for butter in the recipe.*
(b)	NP_{AGENT} + Verb + NP_{IN}	 *You can **substitute** margarine in the recipe.*
(c)	NP_{IN} + be + Verb-pp + *by* NP_{AGENT}	 *Margarine can be **substituted** by you in the recipe.*

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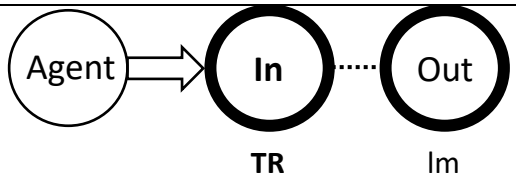
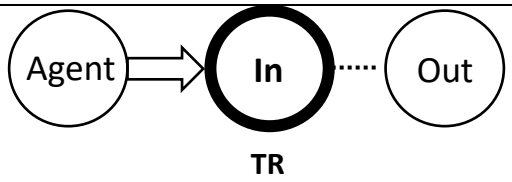
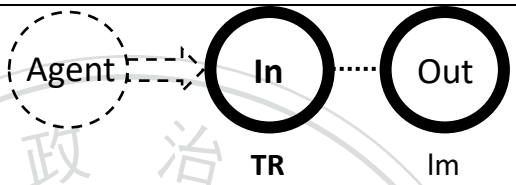
(d)	NP_{IN} + be + Verb-pp + *for/in place of* NP_{OUT}	 *Margarine can be **substituted** for butter in the recipe.*
(e)	NP_{IN} + be + Verb-pp	 *Margarine can be **substituted** in the recipe.*
(f)	NP_{IN} + Verb + *for* NP_{OUT}	 *Margarine can **substitute** for butter in the recipe.*
(g)	NP_{IN} + Verb	 *Margarine can **substitute** in the recipe.*

4.2.1 The construal of 'TR (AGENT) + LM (IN)'

The construal of 'TR (AGENT) + LM (IN)' corresponds to Langacker's (2008) 'default coding' that "[i]n the default coding of canonical events, primary focal prominence is conferred on the head of an action chain, the agent who initiates the chain of interactions constituting the profiled occurrence" (p. 367). As the 'head' of the 'AGENT-IN action chain', the trajector 'AGENT' initiates the action of substituting and affects the 'IN' participant. The three sentence patterns reflecting this construal are illustrated below.

4.2.1.1 *NP_{AGENT} + Verb + NP_{IN} + for/in place of NP_{OUT}*

This sentence pattern is exemplified in (4.1a) and (4.1b) in Table 4.3.

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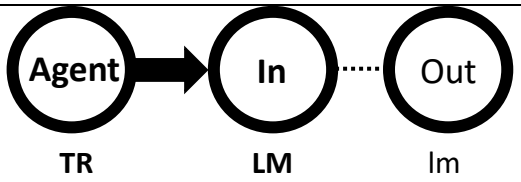
Table 4.3 *The action chain and examples of [NP_{AGENT} + Verb + NP_{IN} + for/in place of NP_{OUT}]*

Action Chain	
(4.1)	a. [AGENT *He*]^{TR} ***substituted*** [IN *lower price labels*]^{LM} [OUT *for those on the goods*]^{lm}. (HXE-272)
	b. [AGENT *You*]^{TR} *can* ***substitute*** [IN *any name you like*]^{LM} [OUT *in place of PENGUIN*]^{lm}*, as long as it has eight letters or less, but do choose something safe.* (CTX-2528)

In (4.1a), the interaction that the subject 'AGENT' (*He*) uses the direct object 'IN' (*lower price labels*) is particularly highlighted while the oblique 'OUT' (*for those on the goods*) only specifies the entity that is to be replaced. No force-dynamic interaction exists between 'IN' and 'OUT'. Similarly, in (4.1b), the subject 'AGENT' (*you*) uses the direct object 'IN' (*any name you like*), and the oblique 'OUT' (*in place of PENGUIN*) merely specifies the entity to be replaced.

This sentence pattern reflects the construal with the trajector-landmark alignment as follows. The 'AGENT' exerts force to affect the 'IN' participant, thereby receiving the primary focus as the trajector. Then, the 'IN' participant is affected by the 'AGENT', and thus becomes the primary landmark (LM). As for the 'OUT' participant, it is not involved in the force-dynamic action chain since the 'IN' does not transfer the force to the 'OUT'. Instead, the 'OUT' participant is merely relevant to the 'IN' participant. The construal underlying this sentence pattern is diagrammed in Table 4.3, in which the dashed line between the 'IN' and the 'OUT' participant represents the non-force-dynamic interaction between them.

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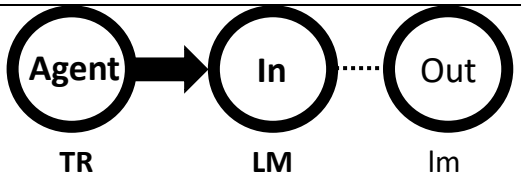
4.2.1.2 *NP_{AGENT} + Verb + for NP_{OUT} + NP_{IN}*

The sentence pattern is exemplified in (4.2) in Table 4.4.

Table 4.4 *The action chain and examples of [NP_{AGENT} + Verb + for NP_{OUT} + NP_{IN}]*

Action Chain	
(4.2)	*I suggest that* [AGENT *we*]^{TR} ***substitute*** [OUT *for this*]^{lm} [IN *what might be called a 'relative autonomy' rule*]^{LM}. (FAY-1548)

This sentence pattern reflects the same construal as that of [NP_{AGENT} + Verb + NP_{IN} + *for/in place of* NP_{OUT}]; specifically, the realization of the profiled participants is identical. However, the oblique 'OUT' is pre-posed to the position initially occupied by the direct object 'IN'. It is exemplified in (4.2) that the oblique 'OUT' (*for this*) is pre-posed to the position initially occupied by the direct object 'IN' (*what might be called a 'relative autonomy' rule*).

This sentence pattern, we argue, is created to conform to the 'old-before-new principle' (Chafe, 1994; Ward & Birner, 2004) at the discourse level. Therefore, the 'discourse-old' segment is pre-posed to precede the 'discourse-new' segment. In (4.2), the pronoun *this* is a 'discourse-old' information since it can be referred anaphorically. Then, conforming to the 'old-before-new principle', the 'discourse-old' 'OUT' participant (*this*) is pre-posed to precede the 'discourse-old' segment (*what might be called a 'relative autonomy' rule*). However, comparing the number of this sentence pattern (15 hits) and that of [NP_{AGENT} + Verb + NP_{IN} + *for/in place of* NP_{OUT}] (314 hits), we argue that the influence of the 'old-before-new principle' is negligible.

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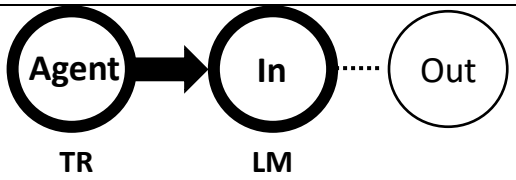
4.2.1.3 NP_{AGENT} + *Verb* + NP_{IN}

This sentence pattern is exemplified in (4.3) in Table 4.5.

Table 4.5 *The action chain and examples of [NP_{AGENT} + Verb + NP_{IN}]*

Action Chain	
(4.3)	[$_{AGENT}$ *He*]^{TR} ***substitutes*** [$_{IN}$ *an alternative*]^{LM}. (CMS-720)

In (4.3), the subject 'AGENT' (*he*) uses the direct object 'IN' (*an alternative*) while the 'OUT' is not explicitly indicated.

This sentence pattern resembles [NP_{AGENT} + Verb + NP_{IN} + *for/in place of* NP_{OUT}] but differs in that the 'OUT' participant is unprofiled. Therefore, the circle representing the 'OUT' participant is not bolded in the action chain (see Table 4.5).

The construal underlying this sentence patterns particularly focuses on the interaction between the 'AGENT' and the 'IN' participant while the 'OUT' participant to be replaced is not specified. This sentence pattern accounts for 19.4% of the use in SUBSTITUTE as the second predominant sentence pattern.

4.2.2 The Construal of 'TR (IN)'

Some other sentence patterns reflect the construal of 'TR (IN)' in which the primary focus is not the 'AGENT', as in the construal of 'TR (AGENT) + LM (IN)', but the 'IN' participant. Five different sentence patterns reflecting this construal direct the attention to the 'IN' participant in the 'AGENT-IN action chain' (see Table 4.6). The sentence patterns in the construal of 'TR (IN)' in Table 4.2 are repeated here as Table 4.6.

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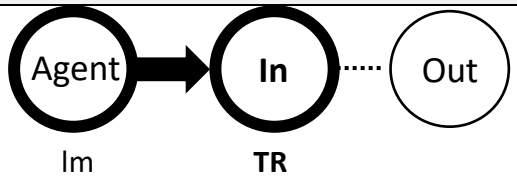
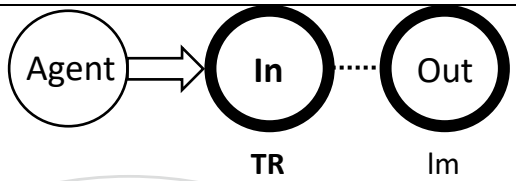
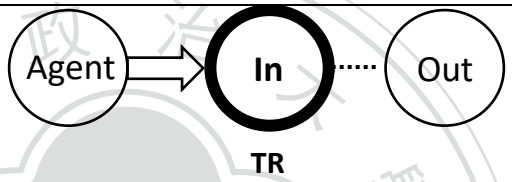
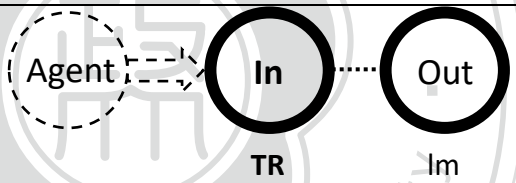
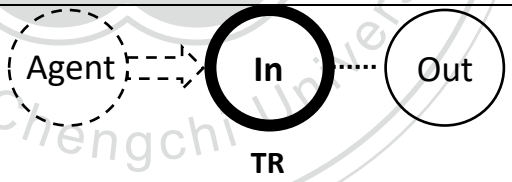
Table 4.6 *The sentence patterns and action chain in the construal of 'TR (IN)'*

	Sentence Pattern	Action Chain
(a)	NP_{IN} + be + Verb-pp + *by* NP_{AGENT}	 *Margarine can be **substituted** by you in the recipe.*
(b)	NP_{IN} + be + Verb-pp + *for/in place of* NP_{OUT}	 *Margarine can be **substituted** for butter in the recipe.*
(c)	NP_{IN} + be + Verb-pp	 *Margarine can be **substituted** in the recipe.*
(d)	NP_{IN} + Verb + *for* NP_{OUT}	 *Margarine can **substitute** for butter in the recipe.*
(e)	NP_{IN} + Verb	 *Margarine can **substitute** in the recipe.*

These sentence patterns, we argue, present varying degrees of 'defocusing' of the 'AGENT' participant. [NP_{IN} + be + Verb-pp + *by* NP_{AGENT}] (*Margarine can be **substituted** by you in the recipe*) downgrades the prominence of the 'AGENT' to the secondary landmark. Then, in [NP_{IN} + be + Verb-pp + *for* NP_{OUT}] (*Margarine can be **substituted** for butter in the recipe*), although the 'AGENT' is unprofiled, its existence is implied in the conceptual base. In contrast, in [NP_{IN} + Verb + *for* NP_{OUT}]

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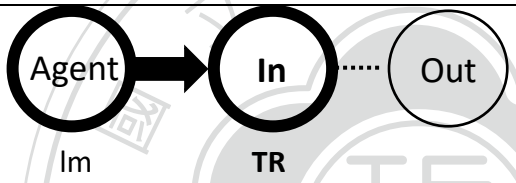
(*Margarine can* ***substitute*** *for butter in the recipe*), the existence of 'AGENT' is particularly diminished in an absolute construal, which emphasizes the capability of the NP_{IN} (*Margarine*) to substitute and diminishes the existence of 'AGENT' in the base. In the following section, these five sentence patterns will be introduced in detail.

4.2.2.1 *NP_{IN} + be + Verb-pp + by NP_{AGENT}*

This sentence pattern is exemplified in (4.4) in Table 4.7 in the context of an undercover operation.

Table 4.7 *The action chain and examples of [NP_{IN} + be + Verb-pp + by NP_{AGENT}]*

Action Chain	
(4.4)	*They belong to two genuine Iranian students here in Paris.* [$_{IN}$ *Your photographs*]^{TR} *have been* ***substituted*** [$_{AGENT}$ *by our experts*]^{lm}. (CEC-1534)

The pronoun *they* in (4.4) refers to the passports which originally belong to two Iranian students. (4.4) describes the event that the 'IN' participant *your photographs* (the photographs of the secret agent in question) has been used to replace the Iranian students' photographs on the passports by the work of the 'AGENT' *our experts*.

This sentence pattern reflects the reversed construal of [NP_{AGENT} + Verb + NP_{IN}] (*You can* ***substitute*** *margarine in the recipe*) by downgrading the 'head' of the action chain as the secondary landmark and making the 'tail' the primary focus. The construal reflects that the subject 'IN' (*your photographs*) is the most prominent one while the oblique 'AGENT' (*by our experts*) is optional. In other words, (4.4) highlights the portion that the 'IN' participant (*your photographs*) has been used.

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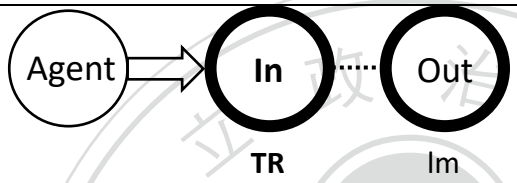
However, this sentence pattern rarely occurs (3 hits) in SUBSTITUTE. The limited occurrence may be caused by the preference of the unprofiled 'AGENT' in the 'Passive construction'.

4.2.2.2 *NP_{IN} + be + Verb-pp + for/in place of NP_{OUT}*

This sentence pattern is exemplified in (4.5) in Table 4.8.

Table 4.8 *The action chain and examples of [NP_{IN} + be + Verb-pp + for/in place of NP_{OUT}]*

Action Chain	
(4.5)	*One resource could be* ***substituted*** *for another*. (G19-1075)

It reflects the construal where both the 'IN' and 'OUT' participants are profiled. The 'IN' participant (*One resource*) receives the primary focus, and the 'OUT' participant (*for another*) serves as the secondary focus, as in Table 4.8.

As for the 'AGENT', it remains part of the conceptual base. Note that the existence of 'AGENT' is not reduced as that of the absolute construal; instead, it is merely not presented in the sentence. This argument could be attested by the allowance of the 'AGENT' participant in the sentence as follows. In [NP_{IN} + be + Verb-pp + *for/in place of* NP_{OUT}], the sentence pattern is able to take an 'AGENT' introduced by the *by*-phrase, as in *One resource could be* ***substituted*** *for another by the government*. In contrast, [NP_{IN} + Verb + *for* NP_{OUT}] fails to do so, as in #*Margarine can* ***substitute*** *for butter in the recipe by you*. This evidence suggests that the 'AGENT' remains intact in the conceptual base without being reduced. Therefore, the circle representing the 'agent' participant remains solid in Table 4.8.

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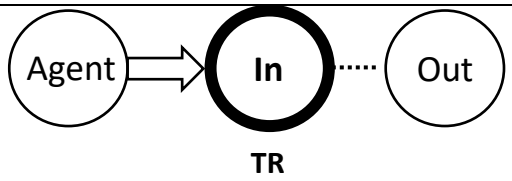
4.2.2.3 *NP_{IN} + be + Verb-pp*

This sentence pattern is exemplified in (4.6) in Table 4.9.

Table 4.9 *The action chain and examples of [NP_{IN} + be + Verb-pp]*

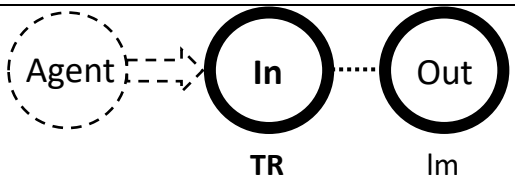
Action Chain	
(4.6)	*In important buildings the interior decoration was by mosaic over all surfaces; in poorer churches* [$_{IN}$ *painted frescoes*]^{TR} *were* ***substituted****.* (HWB-1097)

Example (4.6) describes the event that the 'IN' participant (*painted frescoes*) is used in poor churches as the substitute material. The subject 'IN' (*painted frescoes*) is the primary focus of the event. As for the 'OUT', since it has been mentioned in the prior context (*mosaic*), the 'OUT' participant is unprofiled. In addition, the sentence pattern [NP_{IN} + be + Verb-pp] in the 'Passive construction' implies the 'AGENT' in the action chain. The 'AGENT' in Table 4.9 remains intact, represented by the solid circle.

4.2.2.4 *NP_{IN} + Verb + for NP_{OUT}*

This sentence pattern is exemplified in (4.7) in Table 4.10.

Table 4.10 *The action chain and examples of [NP_{IN} + Verb + for NP_{OUT}]*

Action Chain	
(4.7)	[$_{IN}$ *P Brownless*] *will* ***substitute*** [$_{OUT}$ *for JF*] *if he cannot attend Group meetings.* (HJA-1539)

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The sentence pattern reflects the construal that primarily focuses on the 'IN' participant (*P Brownless*) while the 'OUT' participant (*for JF*) is peripheral. The 'IN' participant is realized as the subject of SUBSTITUTE and the 'OUT' is realized as the oblique in the *for*-phrase. However, one might argue against our analysis of separating SUBSTITUTE and the preposition *for* by indicating that [SUBSTITUTE *for*] should be a "complex predicate" (Langacker, 2008:242) or a "prepositional verb" (Aarts et al., 2014:325; Cowan, 2011:175) functioning as a transitive verb to take a direct object, as in *P Brownless will **substitute for** JF if he cannot attend Group meetings.*

We justify our analysis by following Langacker's (2008:242) test of the complex predicate. Langacker observed that the object of the complex predicate should "function as subject of the corresponding passive" (2008:242). To illustrate, in (4.8a), the direct object (*more information*) of the complex predicate (*send for*) becomes the NP in the subject position of the 'Passive construction', as in (4.8b).

(4.8) a. *You can **send for** more information at any time.* (Langacker, 2008:242)

b. *More information can be **sent for** at any time.* (*ibid*)

Similarly, the test was applied to SUBSTITUTE. The direct object NP of (4.9a) (*JF*) becomes the NP in the subject position of the 'Passive construction' in (4.9b). However, this corresponding 'Passive construction' in (4.9b) is unacceptable. It may be a sound evidence for us to deny [SUBSTITUTE *for*] as a complex predicate.

(4.9) a. *P Brownless will **substitute for** JF if he cannot attend Group meetings.* (HJA-1539)

b. **JF will be **substituted for** by P Brownless if he cannot attend Group meetings.*

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However, some may take issue with this analysis by pointing out that the subject NP_{IN} *P Brownless* in (4.9a) is less agent-like as the NP_{AGENT} *you* in (4.8a). To defend this possible criticism, we conduct the test again in the similar pattern, [NP_{IN} + Verb + NP_{OUT}], where the subject (*gas*) remains the NP_{IN} (see 4.10a). The result shows that the passivization from (4.10a) to (4.10b) does not create an ill-formed sentence as (4.9b) does. It means that the cause which renders (4.9b) unacceptable is not the difference in the roles of subject.

(4.10) a. *Gas can* ***substitute*** *50–80% of diesel oil.* (ACR-3228)

b. *50–80% of diesel oil can be* ***substituted*** *by gas.*

Still, some may have different opinions from our analysis by arguing that it is the double prepositions (*substituted for by P Brownless*) that make (4.9b) infelicitous rather than the complex predicate (*substituted for*). What follows this argument is that the omission of the *by*-phrase (*by P Brownless*) should make the sentence acceptable, as in *JF will be* ***substituted for*** *if he cannot attend Group meetings*. However, according to our corpus data, none of the concordance lines displays the sentence pattern [NP + be + Verb-pp + *for*]. The evidence from the corpus suggests this pattern is unlikely in natural language use.

Taken the brief discussion above, in the present study, we do not regard [SUBSTITUTE *for*] as a complex predicate functioning like a transitive verb. Instead, the preposition *for* is together with the NP_{OUT} as a prepositional phrase. Therefore, the sentence pattern is recognized as [NP_{IN} + Verb + *for* NP_{OUT}].

Since the *for*-phrase has been recognized as a whole of the 'OUT' participant, as in [NP_{IN} + Verb + *for* NP_{OUT}], we diagram the construal of this sentence pattern in

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Table 4.10. In this construal, the trajector is conferred on the 'IN' participant with a secondary landmark 'OUT'. The 'AGENT' is not profiled.

According to Langacker (1991:335), this construal varies in terms of the prominence of the unprofiled 'AGENT' in the 'Middle construction' and the 'Absolute Intransitive construction'. On the one hand, the 'Middle construction' is argued to imply an unprofiled 'AGENT' in the action chain (Langacker, 2008:385). The circle representing the 'AGENT' participant is solid, as in Figure 4.1.

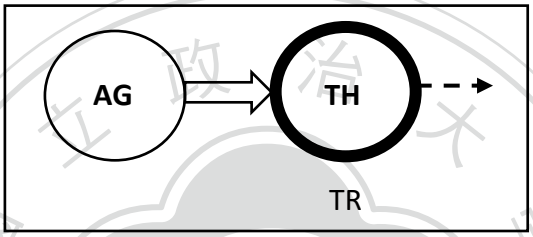

Figure 4.1 *Construal of the 'Middle construction' (Langacker, 1991:335)*

On the other hand, the 'Absolute Intransitive construction' particularly reduces the agentivity "without explicitly invoking an agent" (Langacker, 2008:371). It is diagrammed in Figure 4.2 in which the unprofiled 'AGENT' is dashed.

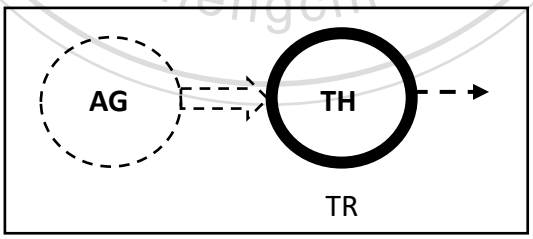

Figure 4.2 *Construal of the 'Absolute Intransitive construction' (Langacker, 1991:335)*

Then, we analyze whether these constructions (or their construals) are adopted in [NP_{IN} + Verb + *for* NP_{OUT}].

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First, as reviewed in section 2.2.3.2, the 'Middle construction' is characterized by two features. One is that the adverb in the construction "implies the willful effort of an agent" (Langacker, 2008:385), and the other is that the inherent property of the subject NP should be able to facilitate or enable the process (Yoshimura & Taylor, 2004:303). For example, in *the door opened easily* (Langacker, 1991:335), the adverb *easily* implies an implicit 'AGENT' who willfully opened the door and found the action is easy.

However, the adverbs which modify the verb SUBSITUTE scarcely imply an 'AGENT'. For example, in (4.11a), the adverb *entirely* describes the extent that the *gas* is able to take the place of the NP_{OUT} (*petrol*); in other words, the adverb *entirely* does not imply the willful effort of an agent like the adverb *easily* in *the door opened easily*. Likewise, in (4.11b), the adverb *chromatically* describes the way Chord A takes the place of Chord B without implying an 'AGENT' in the event.

(4.11) a. $[_{IN}$ *Gas*$]^{TR}$ *can* ***substitute*** *entirely* $[_{OUT}$*for petrol*$]^{lm}$*, because ignition is caused by a spark-plug.* (B78-1526)

b. *In bar 3,* $[_{IN}$ *A*$]^{TR}$ ***substitutes*** *chromatically* $[_{OUT}$*for B*]. (GVJ-1351)

Therefore, the construal with an implied 'AGENT' in the 'Middle construction', as in Figure 4.1, does not represent the construal of (4.11).

Instead, the 'Absolute Intransitive construction' provides an absolute construal which particularly reduces the agentivity in the event, which in turn is construed as a thematic process like *the ice cream melted*. In the thematic process the trajector (*ice cream*) is not the source of energy but the consequence of the force-dynamic interaction. In other words, the existence of the 'AGENT' participant in the conceptual base is not denied but decreased. The thematic process occurs due to the energy

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source from other participants. Therefore, (4.11) is argued to be perfectly compatible with this construal in that the 'AGENT' hardly plays a role in the event of substituting. Then, we argue that the sentence pattern [NP_{IN} + Verb + *for* NP_{OUT}] reflects the absolute construal, as in Figure 4.2. The circle of the 'AGENT' participant is dashed to represent the decreased existence of the unprofiled 'agent' in the conceptual base.

Summing up, [NP_{IN} + Verb + *for* NP_{OUT}] reflects the absolute construal where the 'IN' participant does not interact with the 'OUT' participant and the existence of the unprofiled 'AGENT' is decreased (see Figure 4.3).

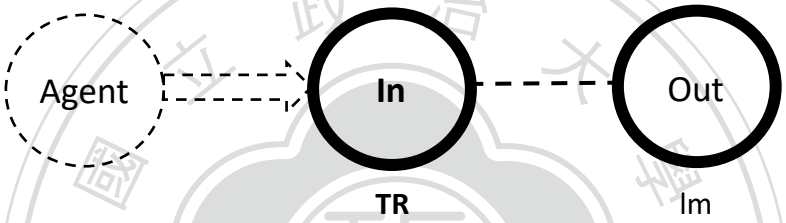

Figure 4.3 *The construal of [NP_{IN} + Verb + for NP_{OUT}]*

According to the corpus results, 131 hits are found in [NP_{IN} + Verb + *for* NP_{OUT}] as the most predominant sentence pattern in the 'TR (IN)' construal. The result suggests that when using SUBSTITUTE to describe the event that an 'IN' participant takes the place of the 'OUT' participant, language users tend to construe a thematic process where the 'IN' participant is highlighted to present its capability of substituting. As for the 'AGENT' participant, its existence is particularly diminished in this construal. For example, in *Gas can* ***substitute*** *entirely for petrol*, the capability of the *gas* to substitute is the focus of the event, and the 'AGENT' participant is not needed.

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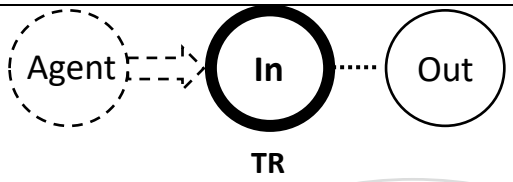
4.2.2.5 *NP_{IN} + Verb*

This sentence pattern is exemplified in (4.8) in Table 4.11. The subject 'IN' (*this*) is the pronoun referring anaphorically to *dihydrocodeine*, a kind of medicine.

Table 4.11 *The action chain and examples of [NP_{IN} + Verb]*

Action Chain	
(4.8)	*Some prefer dihydrocodeine, but* [IN *this*]^{TR} ***substitutes*** *so poorly that large quantities may be needed.* (FT5-1694)

Instance (4.8) describes the terrible performance of the NP_{IN} (*dihydrocodeine*) functioning as a substitute for another medicine. The sentence pattern reflects the construal in which only the 'IN' participant is profiled, and it receives all the attention as the trajector, as in Table 4.11.

This construal is also in the absolute fashion which decreases the existence of the 'AGENT' participant for the reason that the focus is the performance of the medicine (the 'IN' participant) and that who (the 'AGENT') uses the medicine is not the concern of the event.

In addition, it is observed that this sentence pattern may require a complement in the adverbial form in order to be felicitous. In (4.9a), the adverbial (*as a clubhouse*) representing the function of the 'IN' participant is needed, otherwise the sentence would be infelicitous, as in (4.9b).

(4.9) a. [IN *A tiny portacabin*]^{TR} ***substitutes*** <u>*as a clubhouse*</u>. (K2D-543)

b. *[IN *A tiny portacabin*]^{TR} ***substitutes***.

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This observation shares the similar view of Goldberg (2006:439) that "a wide variety of adjuncts can be used to rescue middles from infelicity" (p. 439).[13]

In a similar vein, the sentence pattern [NP_{IN} + Verb + *for* NP_{OUT}] also conforms to this observation. The deletion of the adverbial complement [*for* NP_{OUT}] may render an infelicitous sentence. For example, in *Gas can* ***substitute*** *for petrol*, the deletion of *for petrol* would yield a less acceptable sentence **Gas can* ***substitute***. Some obliques (e.g., the adverb *entirely*) may, to some extent, rescue the sentence from infelicity, as in *Gas can* ***substitute*** *entirely*.

Therefore, it seems that the sentence patterns reflecting the absolute construal which require some obliques to be felicitous. The obliques, according to the corpus results, include the [*for* NP_{OUT}] (131 hits) which specifies the replaced NP_{OUT}. Others could be adverbs which describe the extent (e.g. *entirely*) or the performance (e.g. *poorly*) of substituting.

In section 4.2.1 (the construal of 'TR (AGENT) + LM (IN)') and 4.2.2 (the construal of 'TR (IN)'), different sentence patterns are argued to reflect different construals imposed on the 'AGENT-IN action chain'. Specifically, the sentence patterns reflect the variant construals ranging from the ones where the 'AGENT' participant is the focus (i.e. the 'TR (AGENT) + LM (IN)' construal) to the ones where the focus is shifted to the 'IN' participant (i.e. the 'TR (IN)' construal). The sentence patterns seem to demonstrate a continuum in terms of the degree of the prominence conferred on the 'AGENT' participant.

Then, the distribution of the sentence patterns and their underlying construals in the 'AGENT-IN action chain' is displayed in Table 4.12.

[13] The term "Middles" of Goldberg (2006: 439) did not further differentiate the difference between the 'Middle construction' and the 'Absolute Intransitive construction' as Langacker (1991: 335) did. In other words, both the 'Middle construction' and the 'Absolute Intransitive construction' of Langacker (1991: 335) are included in the "Middle Construction" of Goldberg (2006: 439).

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Table 4.12 *Construals and sentence patterns in the 'AGENT-IN action chain'*

Construal	Sentence Pattern	Hits	Total
TR (AGENT) + LM (IN)	**NP_{AGENT} + Verb + NP_{IN} + *for* NP_{OUT}**	**314**	**553 (61.4%)**
	NP_{AGENT} + Verb + NP_{IN} + *in place of* NP_{OUT}	10	
	NP_{AGENT} + Verb + *for* NP_{OUT} + NP_{IN}	15	
	NP_{AGENT} + Verb + NP_{IN}	**214**	
TR (IN)	NP_{IN} + be + Verb-pp + *by* NP_{AGENT}	3	347 (38.6%)
	NP_{IN} + be + Verb-pp + *for* NP_{OUT}	**120**	
	NP_{IN} + be + Verb-pp + *in place of* NP_{OUT}	2	
	NP_{IN} + be + Verb-pp	83	
	NP_{IN} + Verb + *for* NP_{OUT}	**131**	
	NP_{IN} + Verb	8	
Total		**900**	**900 (100.0%)**

It shows that the proportion of the construal of 'TR (AGENT) + LM (IN)' (61.4%) is more than that of 'TR (IN)' (38.6%). The result suggests that in the 'AGENT-IN action chain', the primary focus is primarily conferred on the 'AGENT' participant.

In the construal of 'TR (AGENT) + LM (IN)', 314 hits of [NP_{AGENT} + Verb + NP_{IN} + *for* NP_{OUT}] (*You can* ***substitute*** *margarine for butter in the recipe*) and 214 hits of [NP_{AGENT} + Verb + NP_{IN}] (*You can* ***substitute*** *margarine in the recipe*) are the first and the second predominant sentence patterns. The result that the profiled 'OUT' participant (339 hits) outnumbers the unprofiled ones (214 hits) suggests the preference of the profiling of the 'OUT' participant in 'TR (AGENT) + LM (IN)'.

In the construal of 'TR (IN)', three sentence patterns are predominant. First, [NP_{IN} + Verb + *for* NP_{OUT}] (*Margarine can* ***substitute*** *for butter in the recipe*) occurs 131 times as the most predominant sentence pattern. This sentence pattern reflects the 'absolute construal' in which the existence of the 'AGENT' participant is particularly diminished. Second, [NP_{IN} + be + Verb-pp + *for* NP_{OUT}] (*Margarine can be* ***substituted*** *for butter in the recipe*) occurs 120 times as the second predominant

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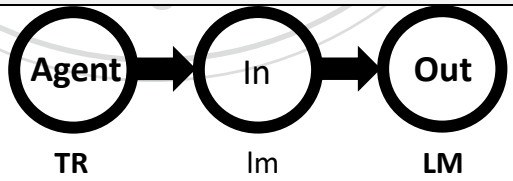
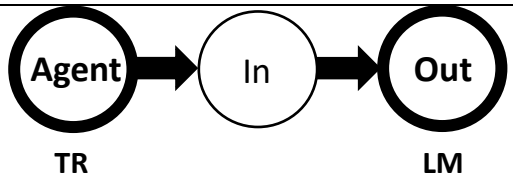
sentence pattern, featured by the 'agent defocusing' which allows the profiling of the 'AGENT' participant as the secondary landmark (lm) at best. Then, [NP_{IN} + be + Verb-pp] (*Margarine can be **substituted** in the recipe*) occurs 83 times as the third predominant sentence pattern. The less occurrence of [NP_{IN} + be + Verb-pp] (83 hits) than that of [NP_{IN} + be + Verb-pp + *for* NP_{OUT}] (120 hits) suggests that the profiling of 'OUT' participant is preferred in the passive construction. In contrast, the rare occurrence (3 hits) of [NP_{IN} + be + Verb-pp + *by* NP_{AGENT}] (*Margarine can be **substituted** for butter in the recipe by you*) suggests that the profiling of the 'AGENT' participant is not preferred in the passive construction.

In the next section, we will present the sentence patterns which reflecting different construals imposed on the 'AGENT-OUT action chain'.

4.3 Construals and Sentence Patterns in the 'AGENT-OUT action chain'

Table 4.13 displays the sentence patterns and their underlying construals imposed on the 'AGENT-OUT action chain'.

Table 4.13 *Construals and the sentence patterns of the 'AGENT-OUT action chain'*

Sentence Pattern		AGENT-OUT action chain
(a)	NP_{AGENT} + Verb + NP_{OUT} + *with/by* NP_{IN}	 *You can **substitute** butter with/by margarine in the recipe.*
(b)	NP_{AGENT} + Verb + NP_{OUT}	 *You can **substitute** butter in the recipe.*

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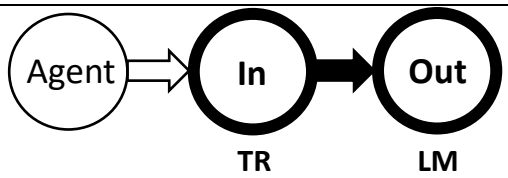
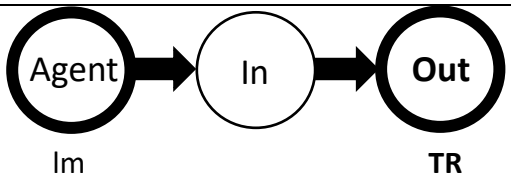
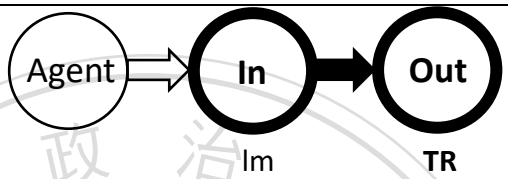
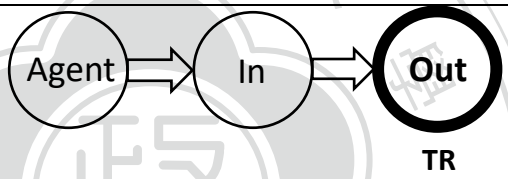
(c)	NP_{IN} + Verb + NP_{OUT}	 *Margarine can **substitute** butter in the recipe.*
(d)	NP_{OUT} + be + Verb-pp + *by* NP_{AGENT}	 *Butter can be **substituted** in the recipe by you.*
(e)	NP_{OUT} + be + Verb-pp + *with*/*by* NP_{IN}	 *Butter can be **substituted** with/by margarine in the recipe.*
(f)	NP_{OUT} + be + Verb-pp	 *Butter can be **substituted** in the recipe.*

As demonstrated in Table 4.13, three variant construals were found in the 'AGENT-OUT action chain', the action chain where all the participants are involved in the force-dynamic interaction. Notably, each participant could be the primary focus (i.e. trajector) of the event. First, the attention could be focused on the interaction between the 'AGENT' and the 'OUT' participant in the construal of 'TR (AGENT) + LM (OUT)', as in Table 4.13 (a) and (b). The attention could also be drawn to the interaction between the 'IN' and the 'OUT' participant in the construal of 'TR (IN) + LM (OUT)', as in Table 4.13 (c). Lastly, the 'OUT' participant could be the only focal participant in the construal of 'TR (OUT)', as in Table 4.13 (d), (e), and (f).

The sentence patterns reflect these variant construals will be illustrated as follows. In sub-section 4.3.1, the sentence patterns reflecting the 'TR (AGENT) + LM (OUT)'

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construal will be introduced; in sub-section 4.3.2, the only sentence pattern reflecting the 'TR (IN) + LM (OUT)' construal will be illustrated; in sub-section 4.3.3, the three sentence patterns reflecting the construal of 'TR (OUT)' will be illustrated.

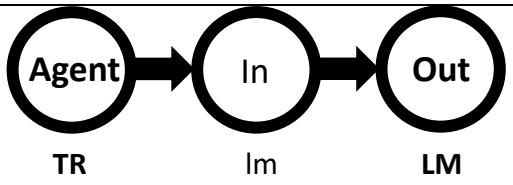
4.3.1 'TR (AGENT) + LM (OUT)' Construal

This sub-section presents the sentence patterns which reflect one of the construals imposed on the 'AGENT-OUT action chain', the action chain which involves the 'AGENT', 'IN', and 'OUT' participants in the force-dynamic interaction. The 'TR (AGENT) + LM (OUT)' construal focuses on the interaction between the 'AGENT' and the 'OUT' participant. In other words, this construal particularly focuses on the portion that 'AGENT' removes the 'OUT' participant in the event of substituting. [NP_{AGENT} + Verb + NP_{OUT} + *with/by* NP_{IN}] (*You can* ***substitute*** *butter with/by margarine in the recipe*) and [NP_{AGENT} + Verb + NP_{OUT}] (*You can* ***substitute*** *butter in the recipe*) are the two sentence patterns reflecting this construal, illustrated as follows.

4.3.1.1 NP_{AGENT} + Verb + NP_{OUT} + with/by NP_{IN}

This sentence pattern is exemplified in (4.9) in Table 4.14.

Table 4.14 *The action chain and examples of [NP_{AGENT} + Verb + NP_{OUT} + with/by NP_{IN}]*

Action Chain	
(4.9)	a. *I have seen countries where* [AGENT *you*]^{TR} ***substituted*** [OUT *a white oppressor*]^{LM} [IN *with a black one*]^{lm}. (GXK-948)
	b. If [AGENT *we*]^{TR} *substitute* [OUT *an atom in a molecule*]^{LM} [IN *by an isotope of different mass*]^{lm}*, we alter the frequencies of some modes.* (H9R-769)

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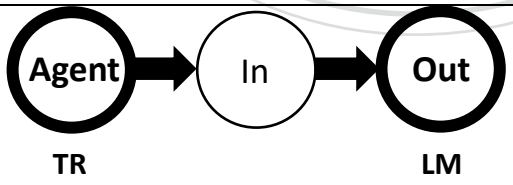
In (4.9a), the subject 'AGENT' (*you*) replaces the direct object 'OUT' (*a white oppressor*) by using the oblique 'IN' participant (*with a black one*) in the *with*-phrase. The attention of the event is direct to the portion that the 'AGENT' (*you*) replaces the 'OUT' (*a white oppressor*). Likewise, (4.9b) describes the event in chemistry that the subject 'AGENT' (*we*) removes the direct object 'OUT' (*an atom in a molecule*) by means of inserting the oblique 'IN' participant (*by an isotope of different mass*) in the *by*-phrase.

Instances in (4.9) demonstrate that the sentence pattern [NP_{AGENT} + Verb + NP_{OUT} + *with/by* NP_{IN}] reflects the construal in which the 'AGENT' removes the 'OUT' by means of the 'IN' participant, as diagrammed in Table 4.14. The 'AGENT' applies the force on the 'IN' participant and uses it as the instrument to replace the 'OUT' participant. Therefore, all the profiled participants are involved in the energy transmission of the action chain.

4.3.1.2 NP_{AGENT} + *Verb* + NP_{OUT}

This sentence pattern is exemplified in (4.10) in Table 4.15.

Table 4.15 *The action chain and examples of [NP_{AGENT} + Verb + NP_{OUT}]*

Action Chain	
(4.10)	[AGENT *SOUTHAMPTON manager Ian Branfoot*]^{TR} ***substituted*** [OUT *hardman Terry Hurlock*]^{LM} *to save him from the red card.* (CEP-10994)

In (4.10), the subject 'AGENT' (*manager*) replaces the direct object 'OUT' (*Terry Hurlock*) in a football game. In general, there will be another substitute player to

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come up as the NP_{IN}, or the team will be at a great disadvantage of fewer players in the field. This evidence may substantiate the interpretation that the 'IN' participant exists in the event of substituting. The sentence pattern focuses on the portion that the 'AGENT' removes the 'OUT' while not specifying the 'IN' participant.

Therefore, this sentence pattern reflects the same construal as [NP_{AGENT} + Verb + NP_{OUT} + *with/by* NP_{IN}] (*You can* ***substitute*** *butter with/by margarine in the recipe*) since both sentence patterns highlight the portion that the 'AGENT' removes the 'OUT' participant. However, in [NP_{AGENT} + Verb + NP_{OUT}], the 'IN' participant is not profiled, and thus the circle representing the 'IN' is not bolded. The construal is diagrammed in Table 4.15.

The consequence of the unprofiled 'IN' participant is that the event is construed or described as if the 'AGENT' directly removes the 'OUT' without the 'IN' as the intermediary instrument in the action chain. For example, in (4.10), the subject 'AGENT' (*manager*) replaces the direct object 'OUT' *Terry Hurlock* in the soccer game while the substitute player (NP_{IN}) is not mentioned.

In this sub-section, the sentence patterns reflecting the construal that focuses on the 'AGENT' and the 'OUT' participant have been illustrated. In the next sub-section, we will present another construal, the 'TR (IN) + LM (OUT)' construal, imposed on the 'AGENT-OUT action chain'.

4.3.2 'TR (IN) + LM (OUT)' Construal

This construal focuses on the force-dynamic interaction between the 'IN' participant and the 'OUT' participant. Specifically, the 'IN' participant becomes the trajector which transmits the force to the 'OUT' participant, the primary landmark of the construal. In SUBSTITUTE, [NP_{IN} + Verb + NP_{OUT}] is the only sentence pattern that reflects this construal.

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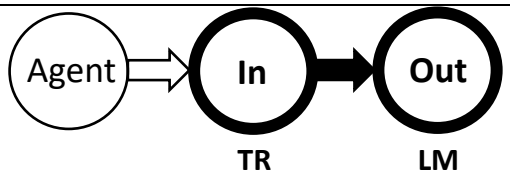
4.3.2.1 *NP_{IN} + Verb + NP_{OUT}*

This sentence pattern is exemplified in (4.11) in Table 4.16.

Table 4.16 *The action chain and examples of [NP_{IN} + Verb + NP_{OUT}]*

Action Chain	
(4.11)	*Not very, despite the fact that* [IN *gas*]^{TR} *can* ***substitute*** [OUT *50–80% of diesel oil*]^{LM}. (ACR-3228)

Instance (4.11) describes the interaction between 'IN' and 'OUT' that the subject 'IN' (*gas*) is able to take the place of the direct object 'OUT' (*50–80% of diesel oil*). The construal underlying this sentence pattern directs attention to the interaction that the 'IN' participant (*gas*) takes the place of the 'OUT' (*50–80% of diesel oil*), and the 'AGENT' is unprofiled. The construal is diagrammed in Table 4.16.

However, in our corpus result, this sentence pattern merely occurs 20 times in SUBSTITUTE. The rare occurrence of this sentence pattern suggests that the construal of 'TR (IN) + LM (Out)' is less preferred in SUBSTITUTE.

In contrast, the sentence pattern [NP_{IN} + Verb + *for* NP_{OUT}] (*Gas can* ***substitute*** *for diesel oil*) which bears the close resemblance to [NP_{IN} + Verb + NP_{OUT}] (*Gas can* ***substitute*** *diesel oil*) is preferred due to its occurrence of 131 times in the corpus.

In this section, we have demonstrated the sentence pattern reflecting the construal of 'TR (IN) + LM (Out)'. In the next section, we will present the sentence patterns which particularly direct the attention to the 'OUT' participant in the construal of 'TR (OUT)'.

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4.3.3 'TR (OUT)' Construal

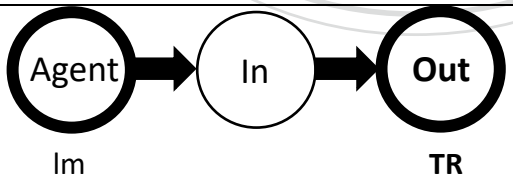
This construal particularly focuses on the 'OUT' participant in the 'AGENT-OUT action chain'. Specifically, the 'OUT' participant is the primary focus of the event while the 'AGENT' and the 'IN' participant could be the secondary landmark at best. In other words, the 'AGENT' and the 'IN' participant may be implied even if they are not presented in the sentence. According to the corpus result, this construal accounts for 12.2% of the use in SUBSTITUTE. The proportion suggests that although this construal is not frequently reflected, it is not negligible in SUBSTITUTE.

Three sentence patterns reflect this construal: [NP_{OUT} + be + Verb-pp + *by* NP_{AGENT}] (*Butter can be **substituted** in the recipe by you*), [NP_{OUT} + be + Verb-pp + *with/by* NP_{IN}] (*Butter can be **substituted** with/by margarine in the recipe*), and [NP_{OUT} + be + Verb-pp] (*Butter can be **substituted** in the recipe*). Each sentence pattern will be presented in detail below.

4.3.3.1 NP_{OUT} + *be* + *Verb-pp* + *by* NP_{AGENT}

This sentence pattern is exemplified in (4.12) in Table 4.17.

Table 4.17 *The action chain and examples of [NP_{OUT} + be + Verb-pp + by NP_{AGENT}]*

Action Chain	
(4.12)	[OUT *The words*]^{TR} *in the second pair of square brackets in sub-section two B were **substituted*** [AGENT *by the Courts Act*]^{lm} *nineteen seventy one, section three, subsection five.* (JSJ-280)

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(4.12) shows that the primary focus is the replaced entity (*the words*) realized as the subject of the sentence, and the 'AGENT' participant (*the Courts Act*) is realized as the oblique.

Note that since *the Courts Act* is an inanimate law, the real 'AGENT' could be the animate legislators by whom the law is enacted. This construal underlying the sentence pattern is diagrammed in Table 4.17.

This sentence pattern reflects the reversed construal of [NP_{AGENT} + Verb + NP_{OUT}] (*You can* ***substitute*** *butter in the recipe*). As diagrammed in Table 4.17, the construal underlying [NP_{OUT} + be + Verb-pp + *by* NP_{AGENT}] (*Butter can be* ***substituted*** *in the recipe by you*) focuses on the 'OUT' participant as the trajector and downgrades the 'AGENT' from the trajector to the secondary landmark. Since the 'IN' participant is not profiled, the 'OUT' participant in the event of substituting is construed as if it is directly affected by the 'AGENT'.

However, as reported in the corpus result, this sentence pattern merely occurs 2 times in SUBSTITUTE. Together with the limited use (3 hits) in [NP_{IN} + be + Verb-pp + *by* NP_{AGENT}] (*Margarine can be* ***substituted*** *in the recipe by you*), [NP_{OUT} + be + Verb-pp + *by* NP_{AGENT}] (*Butter can be* ***substituted*** *in the recipe by you*) is not preferred in the natural language use as well. Possibly, the result suggests that the realization of the 'AGENT' in the oblique (*by* NP_{AGENT}) is not preferred in the 'Passive construction'.

4.3.3.2 NP_{OUT} + *be* + *Verb-pp* + *with/by* NP_{IN}

This sentence pattern is exemplified in (4.13a) and (4.13b) with different prepositional phrases in Table 4.18.

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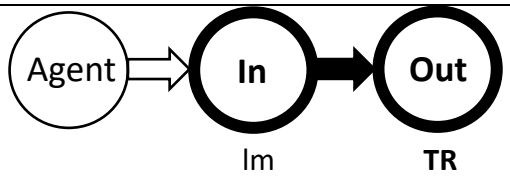
Table 4.18 *The action chain and examples of [NP$_{OUT}$ + be + Verb-pp + with/by NP$_{IN}$]*

Action Chain	
(4.13)	a. [OUT *Desserts*]^{TR} *can be* ***substituted*** [IN *by a portion of fresh fruit, or fresh fruit salad*]^{lm}. (FEX-1592)
	b. It uses modern technology to provide an extremely cost effective meal and [OUT *it*]*'s* ***substituted*** [IN *with fresh items*] *every day.* (JWA-446)[14]

In (4.13a), the subject 'OUT' (*desserts*) can be replaced by the oblique 'IN' (*by a portion of fresh fruit, or fresh fruit salad*). Similarly, in (4.13b), the subject 'OUT' (*it*) refers to the alternative meal offered at schools, and they are replaced by the oblique 'IN' (*with fresh items*) every day. It is interesting to indicate that, in (4.13b), the *it* (alternative meal) is not the replaced entity; instead, what is replaced is the filler in the alternative meal (i.e. the food ingredient that constitutes the meal). Then, the NP$_{IN}$ (*fresh items*) is the fresh food ingredient that is used in the alternative meal. However, since they still hold the relation of being used as the 'IN' participant and being replaced as the 'OUT', they conform to the construal reflected in the sentence pattern.

Sentences in (4.13) reflect the construal in which the 'OUT' participant is primarily focused while the 'IN' participant is peripheral. The 'AGENT' is unprofiled as part of the conceptual base. The construal is diagrammed in Table 4.18.

As demonstrated in Table 4.18, the trajector 'OUT' receives the force from the 'IN' participant which transfers the energy from the unprofiled 'AGENT'. In other words, the construal implies an implicit 'AGENT' rather than reduce the agentivity as in the absolute construal. In addition, as reported in the corpus result, [NP$_{OUT}$ + be +

[14] '*It's*' was considered two distinct lemmas in which '*it*' was annotated as the 'OUT' participant.

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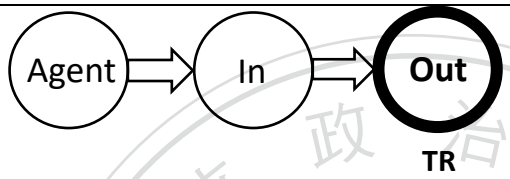
Verb-pp + *by* NP_{IN}] occurs 56 times, while [NP_{OUT} + be + Verb-pp + *with* NP_{IN}] merely occurs 4 times. The result suggests that the oblique 'IN' in the 'Passive construction' prefers the realization of *by*-phrase to *with*-phrase.

4.3.3.3 *NP_{OUT} + be + Verb-pp*

This sentence pattern is exemplified in (4.14) in Table 4.19.

Table 4.19 *The action chain and examples of [NP_{OUT} + be + Verb-pp]*

Action Chain	
(4.14)	*Couldn't see why* [OUT *Speed*]^{TR} *was* ***substituted*** *but he wasn't playing well.* (J1J-765)

In this event of substituting, the attention is directed to the portion that the subject 'OUT' (*Speed*) ceases to play in the ball and leaves his position. The source of force, 'AGENT' (i.e. the manager) and 'IN' (i.e. the substitute player), is not specified in the sentence.

This sentence pattern reflects the construal in which the 'OUT' participant is the only profiled participant and receives the primary focus. The attention is directed to the portion that the 'OUT' participant is forced to leave the position it initially occupied by the force from the 'head' of the action. In other words, the 'OUT' participant could be either replaced by the 'IN' participant or removed by the 'AGENT' participant. However, since the construal focuses on the portion that the 'OUT' is affected and leaves its initial position, the exact source of the force is not specified. The construal in this sentence pattern is diagrammed in Table 4.19.

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In our corpus result, this sentence pattern occurs 72 times and accounts for 6.5% of SUBSTITUTE. This sentence pattern, though not widely used, is not negligible in the use of SUBSTITUTE.

Then, in Table 4.20, we display the overall distribution of the sentence patterns and their underlying construals in the 'AGENT-OUT action chain'.

Table 4.20 *Construals and sentence pattern in the 'AGENT-OUT action chain'*

Construal	**Sentence Pattern**	**Hits**	**Total**
TR (AGENT) + LM (OUT)	**NP_{AGENT} + Verb + NP_{OUT} + *with* NP_{IN}**	**27**	50 (24.5%)
	NP_{AGENT} + Verb + NP_{OUT} + *by* NP_{IN}	3	
	NP_{AGENT} + Verb + NP_{OUT}	20	
TR (IN) + LM (OUT)	NP_{IN} + Verb + NP_{OUT}	20	20 (9.8%)
TR (OUT)	NP_{OUT} + be + Verb-pp + *by* NP_{AGENT}	2	**134 (65.7%)**
	NP_{OUT} + be + Verb-pp + *by* NP_{IN}	56	
	NP_{OUT} + be + Verb-pp + *with* NP_{IN}	4	
	NP_{OUT} + be + Verb-pp	**72**	
Total		**204**	**204 (100.0%)**

The corpus result shows that 65.7% of construal takes the 'OUT' participant as the primary focus of the event of substituting, 24.5% proportion reflect the 'TR (Agent) + LM (Out)' construal, and 9.8% proportion reflect the 'TR (IN) + LM (Out)' construal. It suggests that the 'OUT' participant is mostly conferred on the primary focus in the 'AGENT-OUT action chain'.

In the 'TR (Out)' construal, as indicated above, the attention is particularly directed to the 'OUT' participant, and other participants, if profiled, could only be the secondary landmark at best. In this construal, the sentence pattern [NP_{OUT} + be +

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Verb-pp] (*Couldn't see why Speed was* ***substituted*** *but he wasn't playing well*) occurs 72 times as the most predominant one. Then, [NP_{OUT} + be + Verb-pp + *by* NP_{IN}] (*Desserts can be* ***substituted*** *by a portion of fresh fruit*) is the second predominant sentence pattern in which the 'IN' participant is profiled and realized in the *by*-phrase. In contrast, [NP_{OUT} + be + Verb-pp + *with* NP_{IN}] merely occurs 4 times. It suggests that the 'IN' participant prefers the realization of *by*-phrase than *with*-phrase when profiled in the 'TR (Out)' construal.

As for the 'TR (Agent) + LM (Out)' construal, the 27 hits of [NP_{AGENT} + Verb + NP_{OUT} + *with* NP_{IN}] (*Customs officers* ***substituted*** *the drugs with another substance*) serves as the predominant sentence pattern in this construal. In addition, the 20 hits of [NP_{AGENT} + Verb + NP_{OUT}] (*If a player's fitness falls below 75% his performance is impaired – you may need to* ***substitute*** *him*) are not negligible in this construal as well.

Lastly, the 'TR (IN) + LM (Out)' construal is rare, and only the sentence pattern [NP_{IN} + Verb + NP_{OUT}] (*Gas can* ***substitute*** *50–80% of diesel oil*) corresponds to this construal.

In section 4.2 and section 4.3, we have presented how different sentence patterns reflect their own particular construals imposed on the 'AGENT-IN' and the 'AGENT-OUT' action chains.

On the one hand, in the 'AGENT-IN action chain', seven distinct construals are found underlying the sentence patterns. Among these construals, the 'OUT' participant cannot be the trajector of the construal since it is not involved in the force-dynamic relation of the 'AGENT-IN action chain'. Therefore, the construals vary in terms of the degree of prominence of the 'AGENT' participant.

On the other hand, in the 'AGENT-OUT action chain', six distinct construals are reflected by the sentence patterns. The trajectors of the construals range from the

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'AGENT', 'IN', and 'OUT' participant since the 'OUT' participant holds the force-dynamic relation with the participants in the 'AGENT-OUT action chain'.

Then, after the illustration of the sentence patterns found in our corpus data, we present the top seven predominant sentence patterns of SUBSTITUTE, including the 'AGENT-IN' and 'AGENT-OUT' action chain, in Table 4.21.

Table 4.21 *Distribution of the top seven sentence patterns of SUBSTITUTE*

Construal	**Sentence Pattern**	**Number**	**Number of SUBSTITUTE**
TR (AGENT) + LM (IN)	**NP_{AGENT} + Verb + NP_{IN} + *for* NP_{OUT}**	**314 (28.4%)**	**1104**
	NP_{AGENT} + Verb + NP_{IN}	214 (19.4%)	
TR (IN)	**NP_{IN} + Verb + *for* NP_{OUT}**	**131 (11.9%)**	
	NP_{IN} + be + Verb-pp + *for* NP_{OUT}	**120 (10.9%)**	
	NP_{IN} + be + Verb-pp	83 (7.5%)	
TR (OUT)	**NP_{OUT} + be + Verb-pp**	**72 (6.5%)**	
	NP_{OUT} + be + Verb-pp + *by* NP_{IN}	56 (5.1%)	
Total		**990 (89.7%)**	

These seven sentence patterns cover the 89.7% proportion of SUBSTITUTE. This suggests that most use of SUBSTITUTE falls in these seven sentence patterns. These sentence patterns serve as the preferred forms of their respective construals.

When the 'AGENT' is the primary focus, [NP_{AGENT} + Verb + NP_{IN} + *for* NP_{OUT}] (*You can* ***substitute*** *margarine for butter in the recipe*) is the preferred sentence pattern which highlights the portion that the 'AGENT' uses the 'IN' participant as the substitute. Then, when the 'IN' is primarily focused, two preferred sentence patterns are found. On the one hand, [NP_{IN} + Verb + *for* NP_{OUT}] (*Margarine can* ***substitute*** *for butter in the recipe*) diminishes the existence of 'AGENT' in the 'absolute construal'. On the other hand, [NP_{IN} + be + Verb-pp + *for* NP_{OUT}] (*Margarine can be* ***substituted***

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for butter in the recipe) does not profile the 'AGENT' but implies its existence in the conceptual base. Lastly, when the 'OUT' is primarily focused, the 'AGENT-OUT action chain' is conceptualized, and [NP_{OUT} + be + Verb-pp] (*Butter can be **substituted** in the recipe*) is the preferred sentence pattern which highlights the portion that the 'OUT' is removed by an implied 'AGENT'.

4.4 Distribution of Profiled Participants and their Realizations

The results of the distribution of sentence patterns and construals can be further analyzed in terms of the distribution of the participants and their realization in different syntactic positions. Two results can be obtained: one is the proportion of profiling in each participant, and the other is the distribution of the realization of each profiled participant in the syntactic positions. In doing so, the results display the situation of profiling in participants and the prominence conferred on the profiled participants (recall that the syntactic position reflects the degree of prominence of the participants).

Table 4.22 *Distribution of participants and their syntactic position in SUBSTITUTE*

Participant	Syntactic Position	Number	Total	Number of SUBSTITUTE
AGENT	Subject	**603 (99.2%)**	608 (55.0%)	**1104**
	Direct Object	0 (0.0%)		
	Oblique	5 (0.8%)		
IN	Subject	367 (36.3%)	**1010 (91.4%)**	
	Direct Object	**553 (54.8%)**		
	Oblique	90 (8.9%)		
OUT	Subject	134 (16.8%)	796 (72.1%)	
	Direct Object	70 (8.8%)		
	Oblique	**592 (74.4%)**		

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In Table 4.22, the 'IN' participant is mostly profiled in SUBSTITUTE with the coverage of 91.4%, followed by the 'OUT' (72.1%) and the 'AGENT' (55.0%). The results can be interpreted that the 'IN' participant is the one profiled the most in sentence patterns while almost half of the 'AGENT' is unprofiled and remains part of the conceptual base. Specifically, the 'IN' participant could be widely profiled in different syntactic positions, such as the subject (*Margarine can **substitute** for butter in the recipe*), the direct object (*You can **substitute** margarine in the recipe*), and the oblique (*You can **substitute** butter with margarine in the recipe*). In contrast, the 'AGENT' participant is mostly confined in the sentence patterns where it is the subject (*You can **substitute** margarine in the recipe*). In other words, the 'IN' participant may be more needed than the 'AGENT' participant in describing the event of substituting. This could be because the event of substituting concerns whether the certain entity is used as an NP_{IN} or replaced as an NP_{OUT}. In contrast, the 'AGENT' may sometimes be defocused in passive construction, as in *Margarine can be **substituted** for butter by you*.

However, it should be clarified that the wide coverage of a certain participant does not mean it is the most prominent one. Instead, it merely suggests that the participant is widely profiled or mentioned in sentence patterns of SUBSTITUTE. The prominence of the participant is contingent on its realization in the sentence pattern.

In addition to the coverage of participants, Table 4.22 also provides the distribution in terms of the realization of each participant. This shows the predominant proportion of 99.2% of the 'AGENT' participant is profiled and realized in the position of subject, as in *You can **substitute** margarine in the recipe*. Despite the relatively low coverage (55.0%) of the 'AGENT' participant in sentence patterns, almost every profiled 'AGENT' becomes the primary focus of the event and is realized

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in the position of subject in the sentence. As for the 'IN' participant, 54.8% of its profiling is realized in the position of direct object (*You can **substitute** margarine in the recipe*), 36.3% of 'IN' in the position of subject (*Margarine can **substitute** for butter in the recipe*), and only 8.9% of 'IN' as the oblique (*You can **substitute** butter with margarine in the recipe*). This suggests that most 'IN' participants are more often realized in the position of direct object, which is the secondary focus of the event. Lastly, as for the 'OUT' participant, 74.4% of its profiling is realized as the oblique (*You can **substitute** margarine for butter in the recipe*), then 16.8% in the position of subject (*Butter can be **substituted** by margarine in the recipe*), and 8.8% in the position of direct object (*Margarine can **substitute** butter in the recipe*). The predominant realization as the oblique suggests that the 'OUT' participant receives the least prominence if profiled. The distribution of each participant is summarized below.

(a) The profiled 'AGENT' participant is mostly realized in the position of subject serving as the trajector (TR) of the event

(b) The profiled 'IN' participant is mostly realized in the position of direct object serving as the primary landmark (LM) of the event

(c) The profiled 'OUT' participant is mostly realized as the oblique serving as the secondary landmark (lm) of the event.

These results correspond to the most predominant sentence pattern [NP_{AGENT} + Verb + NP_{IN} + *for* NP_{OUT}] (*You can **substitute** margarine for butter in the recipe*) in SUBSTITUTE. Due to the predominant number of occurrence in the corpus and consistent with the typical realization of each participant, [NP_{AGENT} + Verb + NP_{IN} + *for* NP_{OUT}] is argued to be the typical sentence pattern of SUBSTITUTE.

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In this section, the results in terms of the distribution of sentence patterns and their underlying construals are presented. However, the display of the variant construals imposed on each action chain only accounts for the sentence patterns of the action chain, respectively. In the next section, we will compare the sentence patterns which are similar or even identical in form but derived from the two distinct action chains; for example, the [NP_{AGENT} + Verb + NP_{IN}] (*You can* ***substitute*** *margarine in the recipe*) from the 'AGENT-IN action chain' and the [NP_{AGENT} + Verb + NP_{OUT}] (*You can* ***substitute*** *butter in the recipe*) from the 'AGENT-OUT action chain'. In doing so, we are able to reveal the cause of the ambiguous role of the direct object in [NP_{AGENT} + Verb + $NP_{IN/OUT}$] (i.e. *margarine* and *butter*) and investigate the situation of these two competing conceptualizations of the action chains in SUBSTITUTE.

4.5 The Comparison of the Sentence Patterns in Different Action Chains

In this section, we particularly compare the sentence patterns which are similar in their forms but are derived from the two distinct action chains. In the present thesis, the two action chains of SUBSTITUTE are argued to be the cause of the ambiguous role of the direct object in [NP_{AGENT} + Verb + $NP_{IN/OUT}$] and the subject in [$NP_{IN/OUT}$ + be + Verb-pp]. This section is structured as follows. In the sub-section 4.5.1, [NP_{AGENT} + Verb + NP_{IN}] (*You can* ***substitute*** *margarine in the recipe*) and [NP_{AGENT} + Verb + NP_{OUT}] (*You can* ***substitute*** *butter in the recipe*) are compared; in the sub-section 4.5.2, [NP_{IN} + be + Verb-pp] (*Margarine can be* ***substituted*** *in the recipe*) and [NP_{OUT} + be + Verb-pp] (*Butter can be* ***substituted*** *in the recipe*) are compared; then, in the sub-section 4.5.3, [NP_{IN} + Verb + *for* NP_{OUT}] (*Margarine can* ***substitute*** *for butter in the recipe*) and [NP_{IN} + Verb + NP_{OUT}] (*Margarine can* ***substitute*** *butter in the recipe*) are compared.

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4.5.1 [NP$_{AGENT}$ + Verb + NP$_{IN}$] and [NP$_{AGENT}$ + Verb + NP$_{OUT}$]

Table 4.23 displays the comparison between [NP$_{AGENT}$ + Verb + NP$_{IN}$] and [NP$_{AGENT}$ + Verb + NP$_{OUT}$] in terms of their underlying construals imposed on the action chains and their number of occurrence in the corpus.

Table 4.23 *The contrast of [NP$_{AGENT}$ + Verb + NP$_{IN}$] with [NP$_{AGENT}$ + Verb + NP$_{OUT}$]*

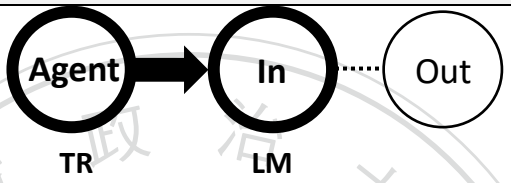
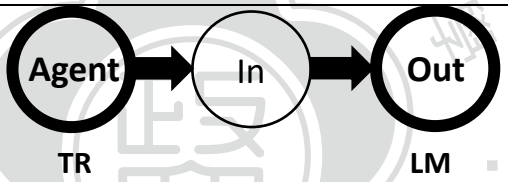
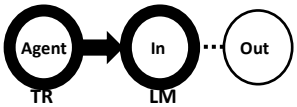
Sentence Pattern	Construals Imposed on the Action Chain	Number
NP$_{AGENT}$ + Verb + NP$_{IN}$ (+ obliques)	 *You can **substitute** margarine in the recipe.*	**214**/1104 (19.4%)
NP$_{AGENT}$ + Verb + NP$_{OUT}$ (+ obliques)	 *You can **substitute** butter in the recipe.*	**20**/1104 (1.8%)

Table 4.23 shows that although [NP$_{AGENT}$ + Verb + NP$_{IN}$] (*You can **substitute** margarine in the recipe*) and [NP$_{AGENT}$ + Verb + NP$_{OUT}$] (*You can **substitute** butter in the recipe*) share the identical form, they are derived from the two distinct action chains.

While [NP$_{AGENT}$ + Verb + NP$_{IN}$] is derived from the 'AGENT-IN action chain', [NP$_{AGENT}$ + Verb + NP$_{OUT}$] is derived from the 'AGENT-OUT action chain'. Then, with a closer look, we found that it is the primary landmark (LM) conferred on the different participants in the action chains that makes either the NP$_{IN}$ or the NP$_{OUT}$ the direct object of the sentence patterns. [NP$_{AGENT}$ + Verb + NP$_{IN}$] reflects that



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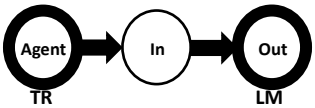
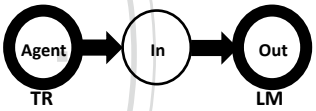
the primary landmark is conferred on the 'IN' participant in the 'AGENT-IN action chain'. In contrast, [NP_{AGENT} + Verb + NP_{OUT}] reflects the construal which makes the



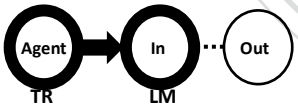
'OUT' participant the secondary focus (i.e. LM) of the event. The 'AGENT-OUT action chain' allows this particular construal, since the 'OUT' participant is involved in the force-dynamic interaction of the action chain.

Therefore, it could be argued that the ambiguous role of the direct object in [NP_{AGENT} + Verb + $NP_{IN/OUT}$] results from the primary landmark which is licensed to be conferred on the 'OUT' participant in the 'AGENT-OUT action chain'.

Then, according to the corpus results, the 214 times of [NP_{AGENT} + Verb + NP_{IN}] significantly outnumber the 20 times of [NP_{AGENT} + Verb + NP_{OUT}]. This suggests that although [NP_{AGENT} + Verb + NP_{OUT}] reflecting the construal of 'TR (AGENT) + LM



(OUT)' might occur, the sentence pattern and its underlying construal is less preferred. In contrast, the sentence pattern [NP_{AGENT} + Verb + NP_{IN}] reflecting the construal of 'TR (AGENT) + LM (IN)' is the typical use of SUBSTITUTE.



4.5.2 [NP_{IN} + be + Verb-pp] and [NP_{OUT} + be + Verb-pp]

The ambiguous role of the NP also occurs in passive construction, specifically the NP in the subject position. Table 4.24 displays the comparison between [NP_{IN} + be + Verb-pp] and [NP_{OUT} + be + Verb-pp] in terms of their underlying construals imposed on the respective action chain and their number of occurrence in the corpus.

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Table 4.24 *The contrast of [NP_{IN} + be + Verb-pp] with [NP_{OUT} + be + Verb-pp]*

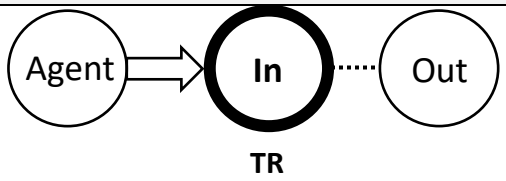
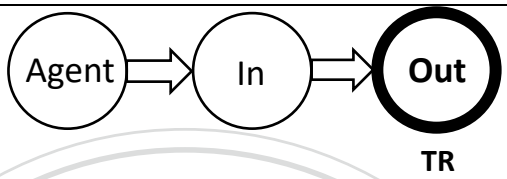
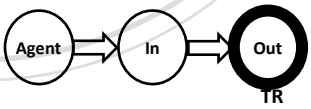
Sentence Pattern	**Construals Imposed on the Action Chain**	**Number**
NP_{IN} + be + Verb-pp		**83**/1104 (7.5%)
	*Margarine can be **substituted** in the recipe.*	
NP_{OUT} + be + Verb-pp		**72**/1104 (6.5%)
	*Butter can be **substituted** in the recipe*	

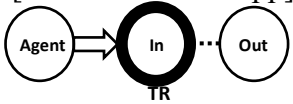
Table 4.24 shows that these two sentence patterns correspond to the two distinct action chains. On the one hand, [NP_{IN} + be + Verb-pp] reflects the construal of 'TR (IN)' imposed on the 'AGENT-IN action chain'. On the other hand, [NP_{OUT} + be + Verb-pp] reflects the construal of 'TR (OUT)' imposed on the 'AGENT-OUT action chain'.

In a similar vein, we argue that the ambiguous role of the subject of [$NP_{IN/OUT}$ + be + Verb-pp] results from the 'AGENT-OUT action chain', which licenses the trajector to be conferred on the 'OUT' participant, as in [NP_{OUT} + be + Verb-pp].

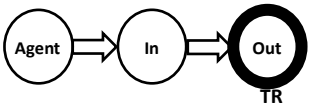


As a consequence, both NP_{IN} and NP_{OUT} could be NP in the subject position of the passive construction.

According to the corpus results, the number of 83 hits of [NP_{IN} + be + Verb-pp]



is close to that of 72 hits of [NP_{OUT} + be + Verb-pp]. This suggests that these two



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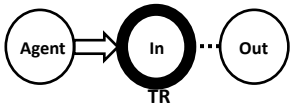
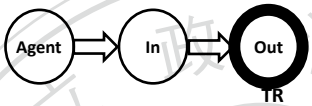
sentence patterns occupy similar proportions in natural language use. However, while the 83 hits of [NP_{IN} + be + Verb-pp] only account for 9.2% of the sentence patterns in the 'AGENT-IN action chain', the 72 hits of [NP_{OUT} + be + Verb-pp] account for 35.3% of the sentence patterns in the 'AGENT-OUT action chain'. Despite the result that both sentence patterns account for a similar proportion in natural language use, [NP_{IN} + be + Verb-pp] is less preferred in the 'AGENT-IN action chain' while [NP_{OUT} + be + Verb-



pp] is preferred in the 'AGENT-OUT action chain'.



4.5.3 [NP_{IN} + Verb + *for* NP_{OUT}] and [NP_{IN} + Verb + NP_{OUT}]

[NP_{IN} + Verb + *for* NP_{OUT}] is argued to bear the resemblance to [NP_{IN} + Verb + NP_{OUT}] in that both sentence patterns seem to be interchangeable with little change in their meaning. For example, [NP_{IN} + Verb + NP_{OUT}] (*Gas can* ***substitute*** *for 50–80% of diesel oil*) could be presented in [NP_{IN} + Verb + *for* NP_{OUT}] (*Gas can* ***substitute*** *50–80% of diesel oil*). Both sentences describe the identical event of substituting; that is, the NP_{IN} (*gas*) is capable of taking the place of the NP_{OUT} (*50–80% of diesel oil*).

Although both sentence patterns resemble each other, the fundamental difference between them lies in the conceptualization of the event of substituting, that is, how the event of substituting is conceptualized in the action chain. The comparison of the conceptualized action chains between [NP_{IN} + Verb + *for* NP_{OUT}] (*Gas can* ***substitute*** *for 50–80% of diesel oil*) and [NP_{IN} + Verb + NP_{OUT}] (*Gas can* ***substitute*** *50–80% of diesel oil*) is presented in Table 4.25.

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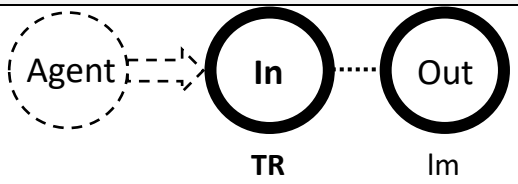
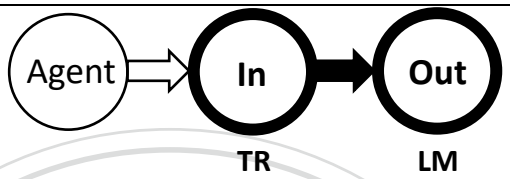
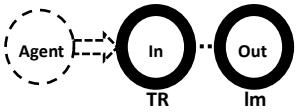
Table 4.25 *The contrast of [NP$_{IN}$ + Verb + for NP$_{OUT}$] and [NP$_{IN}$ + Verb + NP$_{OUT}$]*

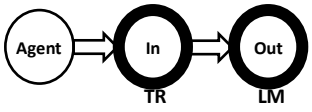
Sentence Pattern	Construals Imposed on the Action Chain	Number
NP$_{IN}$ + Verb + *for* NP$_{OUT}$	 *Gas can **substitute** for 50–80% of diesel oil.*	**131**/1104 (11.9%)
NP$_{IN}$ + Verb + NP$_{OUT}$	 *Gas can **substitute** 50–80% of diesel oil.*	**20**/1104 (1.8%)

In Table 4.25, [NP$_{IN}$ + Verb + *for* NP$_{OUT}$] (*Gas can **substitute** for 50–80% of diesel oil*) reflects the absolute construal in which the existence of the 'AGENT' participant is particularly diminished in the 'AGENT-IN action chain'. Therefore, the event of substituting is construed as a 'thematic process' in which the capability of the NP$_{IN}$ (*Gas*) to substitute is emphasized by diminishing the existence of the 'AGENT' participant. There is no force-dynamic relation between the 'IN' and the 'OUT'; instead, the 'OUT' is merely related to the 'IN'. In contrast, [NP$_{IN}$ + Verb + NP$_{OUT}$] (*Gas can **substitute** 50–80% of diesel oil*) reflects the force-dynamic interaction between 'IN' and 'OUT' in the 'AGENT-OUT action chain'.

According to the corpus results, 131 hits are found in [NP$_{IN}$ + Verb + *for* NP$_{OUT}$],



but merely 20 hits are found in [NP$_{IN}$ + Verb + NP$_{OUT}$]. This result suggests that when



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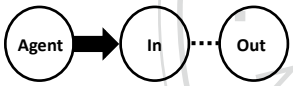
describing the event that an 'IN' takes the place of an 'OUT' in SUBSTITUTE, language users tend to construe a thematic process of the 'IN' participant without evoking the existence of the 'AGENT' participant in the 'AGENT-IN action chain'. The construal with the force-dynamic interaction between 'IN' and 'OUT' in the 'AGENT-OUT action chain' is less preferred.

4.6 Summary of the Chapter

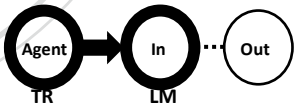
In this chapter, we have presented the distribution and the analysis of the sentence patterns and their underlying construals imposed on the two distinct action chains.

In section 4.1, the two conceptualized action chains in the event of substituting are introduced with their respective distribution in the natural language use. The 'AGENT-IN action chain' is argued to be the typical conceptualization in which the

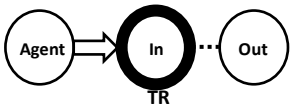


force-dynamic interaction is confined to the 'AGENT' and the 'IN' participant.

In section 4.2, the sentence patterns reflecting the variant construals imposed on the 'AGENT-IN action chain' are presented. The construal of 'TR (AGENT) + LM (IN)'



and 'TR (IN)' are found underlying the sentence patterns. Importantly, these sentence



patterns vary according to the prominence of the 'AGENT' participant. Specifically, the 'AGENT' participant could be a trajector (*You can* ***substitute*** *margarine for butter in the recipe*), a secondary landmark (*Margarine can be* ***substituted*** *in the recipe by you*), an unprofiled participant in the base (*Margarine can be* ***substituted*** *for butter in*

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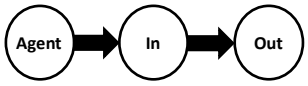
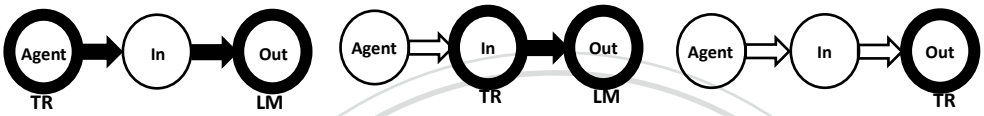
the recipe), and an almost diminished participant in the 'absolute construal (*Margarine can **substitute** for butter in the recipe*).

In section 4.3, the distribution and the analysis of the sentence patterns in the 'AGENT-OUT action chain' is presented. This action chain includes every participant in



the force-dynamic interaction. Three different construals are found: the construal of 'TR (AGENT) + LM (OUT)', 'TR (IN) + LM (OUT)', and 'TR (OUT)'.



The corpus result suggests that [NP_{OUT} + be + Verb-pp] (*Butter can be **substituted** in the recipe*) is the predominant sentence pattern reflecting the construal of 'TR (OUT)'.

In section 4.4, the distribution of the respective participant is presented. This shows that the 'IN' participant is the most 'needed' participant profiled pervasively and that the 'AGENT' participant is the most 'prominent' participant in that most of its profiling is the primary focus of the event.

In section 4.5, we have compared the sentence patterns similar in their forms and demonstrated that the cause for the ambiguous role of the NP in the direct object position of [NP_{AGENT} + Verb + $NP_{IN/OUT}$] (*You can **substitute** margarine in the recipe*) and the subject position of [$NP_{IN/OUT}$ + be + Verb-pp] (*Margarine can be **substituted** in the recipe*). The ambiguous role of the NP in question stems from the two distinct action chains conceptualized in the event of substituting.

Although the analysis of construal in this chapter presents and illustrates the distribution of the conceptualized action chains and the construals underlying the sentence patterns, some questions remain unsolved. Specifically, the analysis of construal works in uncovering the cause of the ambiguous role of the direct object of [NP_{AGENT} + Verb + $NP_{IN/OUT}$] (*You can **substitute** margarine in the recipe*) and the

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subject of [$NP_{IN/OUT}$ + be + Verb-pp] (*Margarine can be **substituted** in the recipe*). However, we cannot reveal the ambiguous role of the NP at issue in these sentence patterns so far. In the next section, we present the analysis of information status of these syntactic positions (i.e. subject and direct object) and demonstrate how the role of NP can be predicted by means of information structure.

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CHAPTER 5

RESULTS OF INFORMATION STRUCTURE IN SENTENCE PATTERNS

In last chapter, the problem of identifying the role of NP in the direct object of [NP_{AGENT} + Verb + $NP_{IN/OUT}$] (*You can **substitute** margarine in the recipe*) and the subject of [$NP_{IN/OUT}$ + be + Verb-pp] (*Margarine can be **substituted** in the recipe*) has been indicated. The distribution of each sentence pattern is demonstrated as follows. On the one hand, [NP_{AGENT} + Verb + NP_{IN}] accounts for 19.4% of SUBSTITUTE while [NP_{AGENT} + Verb + NP_{OUT}] accounts for merely 1.8% of it. It suggests that, despite the allowance of NP_{IN} and NP_{OUT} in the direct object, the occurrence of NP_{IN} is more predominant than NP_{OUT}. On the other hand, the distribution of [NP_{IN} + be + Verb-pp] and [NP_{OUT} + be + Verb-pp] is tantamount to each other with the proportion of 7.5% and 6.5%, respectively. In contrast to the distinct proportion in [NP_{AGENT} + Verb + $NP_{IN/OUT}$], the close proportion of NP_{IN} and NP_{OUT} in [$NP_{IN/OUT}$ + be + Verb-pp] may cause more challenges in interpreting the role of the subject.

In section 3.3.5, the potential of information structure in identifying the role of the NP in question has been argued. Specifically, two hypotheses predict that new information tends not to be the NP_{OUT} and that old information could be either NP_{IN} or NP_{OUT}. In this chapter, we examine the information status of the NP in the position of direct object in active transitive construction (*You can **substitute** margarine in the recipe*) and the NP in the position of subject in the passive construction (*Margarine can be **substituted** in the recipe*). Note that [NP_{IN} + Verb + NP_{OUT}] (*Margarine can **substitute** butter in the recipe*) in the active transitive construction was not included in the analysis since the role of the NPs in the position of subject and direct object was not ambiguous.

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The chapter is structured as follows. In section 5.1, the distribution of the information status in the sentence patterns is presented. In section 5.2, the results of the 'discourse-new' NP in the sentence patterns are further illustrated. In section 5.3, the results of the 'discourse-old' NP in the sentence patterns are introduced. Lastly, in section 5.4, the impact of information structure and construal on the sentence patterns is discussed.

In the analysis of information structure, the sentence patterns in the active transitive and the passive construction were all included (except [NP_{IN} + Verb + NP_{OUT}]), as in Table 5.1. The NP whose information status is investigated is bolded.

5.1 Distribution of Information Status in the Sentence Patterns

Table 5.1 presents the distribution of the information status of the NP in the active transitive construction and the passive construction. The results show that, as for the NPs in the direct object position of the active transitive construction, 80.4% of them are 'discourse-new' while only 19.6% of them are 'discourse-old'.

Table 5.1 *The distribution of information status of NP in sentence patterns*

Sentence Patterns	**Information Status**	**Number**	**Total**
NP_{AGENT} + Verb + **$NP_{IN/OUT}$** (+oblique)	Discourse-new	**485 (80.4%)**	603 (100.0%)
	Discourse-old	118 (19.6%)	
$NP_{IN/OUT}$ + be + Verb-pp (+oblique)	Discourse-new	193 (56.4%)	342 (100.0%)
	Discourse-old	149 (43.6%)	
Total			**945**

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On the other hand, as for the NPs in the subject position of the passive construction, 56.4% of them are 'discourse-new' and 43.6% of them are 'discourse-old'.

These two results suggest that the direct object NP in the active transitive construction strongly prefers 'discourse-new' NP and that the 'discourse-new' NP preference is less so in the subject position of the passive construction.

From the perspective of the information status in information structure, Table 5.2 demonstrates the preferred position for the 'discourse-new' and 'discourse-old' NPs in the constructions. On the one hand, when the NPs are 'discourse-new', 71.5% of them occur in the direct object of the active transitive construction, which means that the 'discourse-new' NPs prefer the post-verbal position in the active transitive construction rather than the pre-verbal position in the passive construction. On the other hand, when the NPs are 'discourse-old', 55.8% of them occur in the pre-verbal position of the passive construction in contrast to 44.2% in the post-verbal position of the active transitive construction. 'Discourse-old' NPs show the preference for the pre-verbal position of the passive construction.

Table 5.2 *Information status of NP in sentence patterns of SUBSTITUTE*

Information Status	**Sentence Patterns**	**Number**	**Total**
Discourse-new	NP_{AGENT} + Verb + **$NP_{IN/OUT}$** (+oblique)	**485 (71.5%)**	678 (100.0%)
	$NP_{IN/OUT}$ + be + Verb-pp (+oblique)	193 (28.5%)	
Discourse-old	NP_{AGENT} + Verb + **$NP_{IN/OUT}$** (+oblique)	118 (44.2%)	267 (100.0%)
	$NP_{IN/OUT}$ + be + Verb-pp (+oblique)	**149 (55.8%)**	
Total			945

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The results show that the choice of sentence patterns generally conforms to 'old-before-new principle' (Chafe, 1994; Ward & Birner, 2004). When the NP is 'discourse-new', the NPs prefer to occur in the post-verbal position, that is, the sentence pattern [NP_{AGENT} + Verb + $NP_{IN/OUT}$] (*You can **substitute** margarine in the recipe*). In contrast, when the NP is 'discourse-old', the pre-verbal position is preferred, as in [$NP_{IN/OUT}$ + be + Verb-pp] (*Margarine can be **substituted** in the recipe*).

These findings relating to the preferred position of the NP in information structure echo with the proposal of Preferred Argument Structure (Du Bois, 2003). Specifically, the preferred sentence pattern [NP_{AGENT} + Verb + $NP_{IN/OUT}$] of the 'discourse-new' NP is consistent with Du Bois' (2003) argument that "the general pattern for two-place predicates is that only one core argument typically carries new information, and this argument is not the A" (p. 38), which means that the direct object tends to carry new information. Our finding that the 'discourse-new' NPs prefer the post-verbal position (i.e. direct object) of the active transitive construction is consistent with the preferred argument structure of transitive verbs in Du Bois (2003:38). In general, 'discourse-new' NPs prefer the post-verbal position of [NP_{AGENT} + Verb + $NP_{IN/OUT}$] (*You can **substitute** margarine in the recipe*) while 'discourse-old' NPs tend to occur in the pre-verbal position of [$NP_{IN/OUT}$ + be + Verb-pp] (*Margarine can be **substituted** in the recipe*).

In the next section, we further look into the relation between the preferred role of the NP and the information status of the NP in information structure. Specifically, the two hypotheses of this thesis will be attested. The 'discourse-new' NPs were predicted to show the preference for the NP_{IN} while the 'discourse-old' NPs showed little preference to either NP_{IN} or NP_{OUT}.

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5.2 'Discourse-new' NP in the Sentence Patterns

Table 5.3 displays the 'discourse-new' NPs in different sentence patterns. Regardless of the constructions, 90.6% of the 'discourse-new' are interpreted as NP_{IN} in the sentence patterns while merely 9.6% of them are NP_{OUT}. The stark contrast between the NP_{IN} and the NP_{OUT} in 'discourse-new' NPs suggests that 'discourse-new' NPs prefer NP_{IN} rather than NP_{OUT}.

Table 5.3 *'Discourse-new' NP and sentence patterns in SUBSTITUTE*

Information Status	**Sentence Patterns**	**Number**	**Total**	**Grand Total**
Discourse-new	NP_{AGENT} + Verb + **NP_{IN}** (+oblique)	466	**613 (90.4%)**	**678 (100.0%)**
	NP_{IN} + be + Verb-pp (+oblique)	147		
	NP_{AGENT} + Verb + **NP_{OUT}** (+oblique)	19	65 (9.6%)	
	NP_{OUT} + be + Verb-pp (+oblique)	46		

This result supports our first hypothesis that the 'discourse-new' NP tends to be the NP_{IN}. The tendency is anticipated in that using a 'discourse-new' entity as the NP_{IN} is more common than the NP_{OUT} to be replaced. To illustrate, in (5.1), the 'AGENT' *I* uses an alternatives *thick oil* (NP_{IN}) to prevent leakage.

(5.1) *I own a 1976 SWB Series III which is leaking oil from the seal round the offside swivel pin housing. As the housing is not pitted I cleaned it and replaced the seal, however it is still leaking some oil. Can I avoid renewing the housing by* ***substituting*** *thick oil to prevent further leakage?* (AN2-652)

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However, it is less favorable to interpret *thick oil* as the NP_{OUT} since replacing new information which just comes to readers/hearers' mind may be against our live experience or intuition. Therefore, if we replace the *oil* in (5.1) with the *thick oil*, as in (5.2), the information status of the direct object NP (*thick oil*) of SUBSTITUTE becomes 'discourse-old' which in turn makes the interpretation of the NP more compatible with NP_{OUT} rather than NP_{IN}.[15]

(5.2) *I own a 1976 SWB Series III which is leaking some thick oil from the seal round the offside swivel pin housing. As the housing is not pitted I cleaned it and replaced the seal, however it is still leaking. Can I avoid renewing the housing by* ***substituting*** *thick oil to prevent further leakage?*

The other example of the 'discourse-new' in [$NP_{IN/OUT}$ + be + Verb-pp] (*Margarine can be* ***substituted*** *in the recipe*) is exemplified in (5.3). The NP (*A quality, dry pale sherry*) is 'discourse-new' as a newly introduced alternative in the recipe, and thus the NP should be the NP_{IN}.

(5.3) [Title: *Rice wine*] *Used extensively for cooking and drinking in China, it is made from glutinous rice, yeast and spring water. A quality, dry pale sherry can be* ***substituted****, but cannot equal its unique, rich, mellow taste.* (G2D-750)

The corpus results support our first hypothesis in that the 'discourse-new' NP demonstrates the strong preference for the NP_{IN} in natural language use. In the next

[15] For here, we recognized that the context information also comes into play and induces our interpretation of the NP (*thick oil*) to be NP_{OUT}.

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section, the second hypothesis relating to relation between the 'discourse-old' NP and the role carried by the NP will be attested.

5.3 'Discourse-old' NP in the Sentence Patterns

As for the relation between the 'discourse-old' NPs and the role carried by the NP, the second hypothesis that the distribution of NP_{IN} should be on a par with NP_{OUT} in each sentence pattern is made. The hypothesis rests on the reason that the previously mentioned or discussed NP should be able to be either NP_{IN} or NP_{OUT}. The less preferred situation of replacing new information demonstrated above is precluded.

Table 5.3 shows that when the NPs are 'discourse-old', 55.8% of them are NP_{IN} and 44.2% of them belong to NP_{OUT}. The close proportion of NP_{IN} and NP_{OUT} in 'discourse-old' NP suggests that 'discourse-old' NPs show the neutral preference to either NP_{IN} or NP_{OUT}, and thereby the second hypothesis is attested.

Table 5.3 *'Discourse-old' NP and sentence patterns in SUBSTITUTE*

Information Status	Sentence Patterns	Number	Total	Grand Total
Discourse-old	NP_{AGENT} + Verb + **NP_{IN}** (+oblique)	87	149 (55.8%)	267 (100.0%)
	NP_{IN} + be + Verb-pp (+oblique)	62		
	NP_{AGENT} + Verb + **NP_{OUT}** (+oblique)	31	118 (44.2%)	
	NP_{OUT} + be + Verb-pp (+oblique)	87		

These findings suggest that while the information status of NP could help identify the role of NP in question, only being 'discourse-new' is beneficial in

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prediction. When the NP is 'discourse-old', readers/hearers still need to count on other clues in the context to figure out the role of NP.

The 'clues in the context' refers to the clues provided in the context for readers/hearers to structure the whole situation by means of 'inference'. To illustrate, in (5.4), the NP (*the values*) is 'discourse-old' due to the anaphoric reference to *the marked working voltage* which contrasts with *the advertised value*. In other words, there are two kinds of value: *the advertised value* in contrast to the value of *the marked working voltage*. Then, since the 'discourse-old' NP (*the values*) demonstrates the neutral preference to either NP_{IN} or NP_{OUT}, information status helps little here. We are forced to turn to other resources in the context other than information status.

(5.4) *This is the timely advice offered by Colin Pickwick. He recently purchased some capacitors (from a well established supplier) only to find (on close examination) that the marked working voltage was well below the advertised value. It would appear that either the values had been* ***substituted*** *by the supplier (without warning) or the capacitors had been mistaken for components having an identical capacitance value but with a much reduced voltage rating.* (C91-488 to C91-491)

It is said that the marked value of some capacitors is below than the advertised value, and this may result from the replacement of the initial voltage value. In the normal situation, the initial voltage volume is assumed to be consistent with the advertised value. However, the supplier replaces *the values* (i.e. the initial voltage value) without warning, and the replacement cause the disparity between the advertised and the initial value. Following the flow of inference displayed above, we can infer that the NP (*the values*) is an NP_{OUT}.

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The two hypotheses have been supported by the corpus results in section 5.2 and 5.3. In section 5.2, the first hypothesis relating to the strong preference to the NP_{IN} when it is 'discourse-new' is attested. Then, in section 5.3, the second hypothesis that the 'discourse-old' NP shows the neutral preference to either NP_{IN} or NP_{OUT} is attested as well. Since 'discourse-old' NP may be less helpful to the prediction of the role carried by the NP, readers/hearers may rely on their ability of inference to figure out the role of the NP by the clues provided in the context.

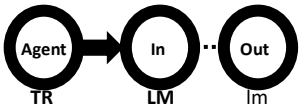
Then, the next section presents that the impact of information structure is more than predicting the role of NP. Information structure may affect the configuration of the sentence patterns.

5.4 The Impact of Information Structure on Sentence Patterns

The influence of information structure is more than that of predicting the role of NP. It is argued to influence or shape the form of sentence pattern. The sentence pattern [NP_{AGENT} + Verb + *for* NP_{OUT} + NP_{IN}] is a typical example (see 5.5).

(5.5) *I suggest that* [$_{AGENT}$ *we*]^{TR} ***substitute*** [$_{OUT}$ *for this*]^{lm} [$_{IN}$ *what might be called a 'relative autonomy' rule*]^{LM}. (FAY-1548)

Instance (5.5) reflects the construal that the 'AGENT' is the trajector, the 'IN' is the primary landmark, and the 'OUT' is the secondary landmark, the typical 'TR (AGENT) + LM (IN)' construal of SUBSTITUTE.



However, in order to conform to the 'old-before-new principle', the 'discourse-old' 'OUT' participant (*for this*) is pre-posed to the position antecedent to the

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'discourse-new' 'IN' participant (*what might be called a 'relative autonomy' rule*). Although the order of 'IN' and 'OUT' is reversed, the construal remains intact in that the 'OUT' is still an oblique realized in the *for*-phrase. This sentence pattern presents the impact information structure in the configuration of sentence pattern.

Nevertheless, given that this 'discourse-old' segment pre-posing construction was found merely in [NP_{AGENT} + Verb + *for* NP_{OUT} + NP_{IN}] and its rare occurrence (15 hits) in the corpus, the impact of information structure on shaping the form of sentence patterns seems to be less consequential. Therefore, in SUBSTITUTE, we argue that information structure is more influential to show its preference to the sentence patterns but less important to yield the new forms of sentence patterns.

5.5 Summary of the Chapter

In this chapter, we present the results of information structure in the sentence patterns of SUBSTITUTE. The results in each section are recapitulated as follows.

In section 5.1, the distribution of the 'discourse-new' and 'discourse-old' NP in the sentence patterns was presented. Specifically, the 'discourse-new' NP prefers the post-verbal position of [NP_{AGENT} + Verb + $NP_{IN/OUT}$] (*You can **substitute** margarine in the recipe*), and the 'discourse-old' NP prefers the pre-verbal position of [$NP_{IN/OUT}$ + be + Verb-pp] (*Margarine can be **substituted** in the recipe*). The results were consistent with the 'old-before-new principle' in that the 'discourse-old' NPs prefer the pre-verbal position and the 'discourse-new' NPs prefer the post-verbal position. In addition, we found that the NPs in the post-verbal position of the active transitive construction are predominantly 'discourse-new'. Then, as for the NPs in the pre-verbal position of the passive construction, the preference for the 'discourse-new' NPs is less so. This may be influenced by the 'old-before-new principle'.

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Then, in section 5.2 and 5.3, the two hypotheses of the role preference in information status were attested in [NP_{AGENT} + Verb + $NP_{IN/OUT}$] and [$NP_{IN/OUT}$ + be + Verb-pp]. The corpus results reported the tendency that the 'discourse-new' NP tends to be NP_{IN} while the 'discourse-old' NP has neutral preference to NP_{IN} and NP_{OUT}.

Lastly, in section 5.4, information structure is argued to shape the form of sentence pattern. Specifically, the 'discourse-old' segment (*for* NP_{OUT}) in [NP_{AGENT} + Verb + *for* NP_{OUT} + NP_{IN}] (*You can* ***substitute*** *for butter margarine in the recipe*) is pre-posed in order to conform to the 'old-before-new principle'. Old information (i.e. *for butter*) is pre-posed to be prior to new information (i.e. *margarine*).

In the next chapter, we will conclude the findings of this thesis and provide some pedagogical implications in terms of the use of SUBSTITUTE.

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CHAPTER 6
CONCLUSION

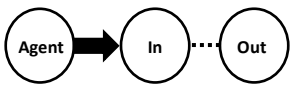
In this chapter, we will present the conclusion of the thesis. The chapter is structured as follows. In section 6.1, the overall summary of the present thesis is drawn by answering the respective research questions; in section 6.2, the pedagogical implications of teaching and learning the verbal SUBSTITUTE are given; in section 6.3, the limitations and the future studies of this thesis are presented.

6.1 Overall Summary of the Thesis

In this section, we summarize the findings of the thesis by answering the research questions in order.

Since the first and the second research question relate to the types and the distribution of sentence patterns, both questions are answered together. As argued in this thesis, the varying construals of the event of substituting, including the selection of profiling and the prominence conferred on the profiled participants, may yield different types of sentence patterns.

According to the BNC corpus, eighteen sentence patterns of SUBSTITUTE were found in total. Then, among the overall sentence patterns, the seven most predominant sentence patterns is presented as follows. The first two sentence patterns, [NP_{AGENT} + Verb + NP_{IN} + *for* NP_{OUT}] (*You can* ***substitute*** *margarine for butter in the recipe*) and [NP_{AGENT} + Verb + NP_{IN}] (*You can* ***substitute*** *margarine in the recipe*), are the typical sentence patterns of SUBSTITUTE, reflecting the construal which highlights the interaction between 'AGENT' and 'IN' in the 'AGENT-IN action chain'.



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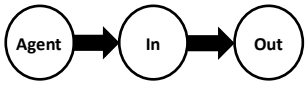
Then, the third to the fifth sentence patterns particularly focus on the 'IN' participant, as in [NP_{IN} + Verb + *for* NP_{OUT}] (*Margarine can* ***substitute*** *for butter in the recipe*), [NP_{IN} + be + Verb-pp + *for* NP_{OUT}] (*Margarine can be* ***substituted*** *for butter in the recipe*), and [NP_{IN} + be + Verb-pp] (*Margarine can be* ***substituted*** *in the recipe*). Finally, the sixth and the seventh sentence patterns conceptualize the 'AGENT-OUT action chain' and highlight the interaction between 'AGENT' and 'OUT', as in



[NP_{OUT} + be + Verb-pp] (*Butter can be* ***substituted*** *in the recipe*) and [NP_{OUT} + be + Verb-pp + *by* NP_{IN}] (*Butter can be* ***substituted*** *by margarine in the recipe*).

Among the overall sentence patterns of SUBSTITUTE, 394 hits of the sentence patterns lack the role-predicting prepositions (i.e. *for*, *with*, and *by*), which accounts for 35.7% of the sentence patterns of SUBSTITUTE. These sentence patterns need further analysis in terms of the information status of the NP in order to identify the role of the NP.

The third research question pertains to the relation between information structure and the role of the NP in sentence patterns. In this thesis, information status of the NP is proposed to tackle the ambiguous roles of the NP in the pre-verbal position of [$NP_{IN/OUT}$ + be + Verb-pp] (*Margarine can be* ***substituted*** *in the recipe*) and the post-verbal positional of [NP_{AGENT} + Verb + $NP_{IN/OUT}$] (*You can* ***substitute*** *margarine in the recipe*). Typically, when the NP is 'discourse-new', it prefers to occur in the post-verbal position of [NP_{AGENT} + Verb + $NP_{IN/OUT}$] (*You can* ***substitute*** *margarine in the recipe*) in which the role of NP is predominantly NP_{IN}. 'Discourse-new' NP could mostly predict the role of NP as an NP_{IN}. In contrast, when the NP is 'discourse-old', it prefers the pre-verbal position of [$NP_{IN/OUT}$ + be + Verb-pp] (*Margarine can be* ***substituted*** *in the recipe*), and the NP shows the neutral preference for either NP_{IN} or NP_{OUT}. 'Discourse-old' NP is less helpful to predict the role of NP. Note that these are

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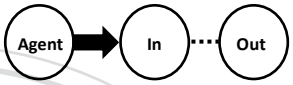
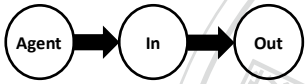
proposed as the tendency between information structure and sentence patterns rather than a strict rule.

Lastly, the fourth research question concerns the construals imposed on the substitution event in SUBSTITUTE. To answer this question, the detailed analysis of the construals underlying each sentence pattern has been conducted. It is argued that the two distinct conceptualizations of the event of substituting is the cause of ambiguous role of the NP. On the one hand, the 'AGENT-IN action chain' limits the

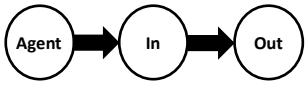


force-dynamic interaction between 'AGENT' and 'IN'; on the other hand, the 'AGENT-OUT action chain' includes every participant in the force-dynamic relations.

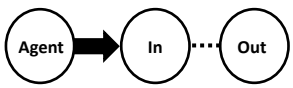


The sentence patterns resembling each other in their forms conceptualize distinct action chains. First, although [NP_{AGENT} + Verb + NP_{IN}] (*You can **substitute** margarine in the recipe*) and [NP_{AGENT} + Verb + NP_{OUT}] (*You can **substitute** butter in the recipe*) resemble each other syntactically, [NP_{AGENT} + Verb + NP_{IN}] conceptualizes the

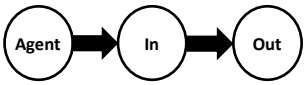
'AGENT-IN action chain', but [NP_{AGENT} + Verb + NP_{OUT}] conceptualizes the 'AGENT-OUT action chain'.



Similarly, the ambiguous role of the pre-verbal NP in [NP_{IN} + be + Verb-pp] and [NP_{OUT} + be + Verb-pp] (*Margarine can be **substituted** in the recipe*) are also derived from the distinct conceptualization of action chains in SUBSTITUTE. While [NP_{IN} + be + Verb-pp] conceptualizes the 'AGENT-IN action chain', [NP_{OUT} + be + Verb-pp]



conceptualizes the 'AGENT-OUT action chain'.



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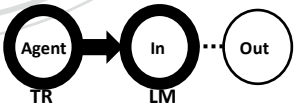
The two distinct conceptualized action chains of SUBSTITUTE are argued to be the cause of the unique language phenomenon that both NP_{IN} and NP_{OUT} are allowed to occur as the direct object or subject of SUBSTITUTE.

6.2 Pedagogical Implications of SUBSTITUTE

In this section, the pedagogical implications are given according to the findings of this thesis. First, with regard to comprehending the sentence with the verbal SUBSTITUTE, language teachers should raise students' awareness of the opposite meanings of SUBSTITUTE in [NP_{AGENT} + Verb + $NP_{IN/OUT}$] (*You can **substitute** margarine in the recipe*) and [$NP_{IN/OUT}$ + be + Verb-pp] (*Margarine can be **substituted** in the recipe*), respectively. Then, language learners should be instructed to recognize the role-predicting prepositions, that is, the preposition *for* for the NP_{OUT} and *with* and *by* for the NP_{IN}. These prepositions are important due to their capability of predicting the role of NP. However, if these prepositions are not presented in the sentence, language users may analyze the information status of the NP in question. If the NP is 'discourse-new', it tends to be the NP_{IN}; however, if the NP is 'discourse-old', language users could only examine other clues provided in the context.

As for the use of SUBSTITUTTE, since the 'TR (AGENT) + LM (IN)' construal is



predominant in SUBSTITUTE, the use of [NP_{AGENT} + Verb + NP_{IN}] (*You can **substitute** margarine in the recipe*) is recommended. Then, the role-predicting prepositions are also suggested to be integrated, as in *You can **substitute** margarine for butter in the recipe*. In doing so, the role-predicting prepositions provide the helpful clues for the hearers or readers to comprehend the sentence correctly. In addition, when the NP in question is 'discourse-new', to conform to the 'old-before-

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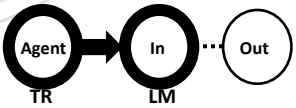
new principle', it is suggested to be arranged in the post-verbal position, as in [NP_{AGENT} + Verb + NP_{IN}] (*You can **substitute** margarine in the recipe*). On the contrary, when the NP has been mentioned in the prior discourse, it is suggested to be arranged in the pre-verbal position, as in [$NP_{IN/OUT}$ + be + Verb-pp] (*Margarine can be **substituted** in the recipe*).

6.3 Limitations and Future Studies

In this section, some limitations of the present thesis are acknowledged, and future studies are presented.

The first limitation relates to the source of the corpus used in the present thesis. Since the BNC corpus is designed to represent British English, it follows that the findings of this thesis could be generalized in the British English at best. The analysis of SUBSTITUTE is anticipated to extend to the American English in future studies.

Then, since the scope of this thesis is limited in SUBSTITUTE, the comparison with other lexical units in the {REPLACING} frame (e.g., *replace*, *change*, and *exchange*) has not been researched. Specifically, the comparison in terms of the particular construal imposed on the event of substituting by different verbs should be investigated. The present thesis has indicated that the 'TR (AGENT) + LM (IN)'



construal is the typical construal of SUBSTITUTE. Similarly, the same analysis of construal in other lexical units is expected to reveal the typical construal of each verb. Then, by comparing the typical construals of the respective verbs, we could categorize the verbs in the {REPLACING} frame according to the typical construal that each verb imposes on the event. In doing so, the overall analysis of construal represents the varying 'perspectives' (Fillmore & Baker, 2010:330) that the respective verbs adopt.

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