

Title	English Psychological Constructions : Semantic Interplay of Verbs, Nouns and Constructions
Author(s)	中尾, 朋子
Citation	大阪大学, 2016, 博士論文
Version Type	VoR
URL	<a href="https://doi.org/10.18910/55705">https://doi.org/10.18910/55705</a>
rights	
Note	

*Osaka University Knowledge Archive : OUKA*

<https://ir.library.osaka-u.ac.jp/>

Osaka University

**English Psychological Constructions:  
Semantic Interplay of Verbs, Nouns and Constructions**

**A Thesis Submitted for the Degree of Doctor of Philosophy,  
Studies in Language and Culture,  
Graduate School of Language and Culture,  
Osaka University**

**by**

**NAKAO, Tomoko**

(中尾 朋子)

**November 2015**

## **Acknowledgements**

Many people have commented on the previous versions of this dissertation, contributing with invaluable comments, clarifications, and encouragements in countless ways, and I would like to express my profound and sincere gratitude to them.

First, I am extremely grateful to my thesis supervisors, Yoko Yumoto, Naoko Hayase, and Yoshiyuki Kinouchi. I am deeply indebted to Yoko Yumoto for her invaluable advice, enthusiasm, and encouragement regarding this dissertation. She provided me with consistent guidance, through her kind and careful support, that helped me to develop my arguments. She also introduced me to meetings of the linguistic circle, the Kansai Lexicon Project (KLP), where I had opportunities to present my research and to learn from the discussions. These experiences helped me to critically rethink several aspects of my research. I would also like to express my sincere gratitude to Naoko Hayase, who provided careful and kind guidance, as well as invaluable comments on the dissertation. Each discussion with her brought me a step closer to a solution. I learned a great deal from her over the years, throughout both my master's degree and doctoral courses. Her suggestions and guidance have greatly contributed to my study. I am also deeply grateful to Yoshiyuki Kinouchi for making many invaluable comments on the preliminary drafts of this dissertation. He introduced me to different perspectives on linguistic data and his beneficial suggestions have been of great value to my study. Without this support, I would have been unable to complete the dissertation.

In addition, I am extremely grateful to my former supervisor, Takashi Sugimoto, whose advice has been a source of deep insight and wisdom throughout the course of my studies. Together with Naoko Hayase, Takashi Sugimoto gave me warm encouragement and provided extremely useful comments throughout my master's and doctoral degrees. Without their excellent joint teaching during my master's degree, I would never have begun my present study.

My special thanks also go to Kimi Akita, who offered many helpful comments and

encouraged me greatly. He helped me to clarify several aspects of my analysis by providing me with thoughtful suggestions. His advice was a great source of inspiration for this dissertation.

I would also like to express my gratitude to Isao Ueda, who gave me warm encouragement regarding my pursuit of academic life as well as offering helpful input in terms of my study.

I am deeply indebted to Seizi Iwata, who allowed me to attend his class and offered me opportunities to present my study at his English linguistics meetings. He made invaluable suggestions and comments concerning my study and inspired me to renewed efforts.

I am immeasurably grateful to Seisaku Kawakami, Sung Yeo Chung and other members of the Hotarugaike Cognitive Linguistic Circle. Seisaku Kawakami supported me with numerous helpful insights, and Chung Sung-Yeo provided me constructive comments concerning my study. I believe that the discussions at these meetings undoubtedly influenced this dissertation positively.

I would like to express my gratitude to my fellow students and the many people who listened to my presentations and commented on them.

I am also greatly indebted to my native informants Trane DeVore, Jon Clenton, and Sara Sakamoto, for their cooperation, as well as the various insights they provided me with through discussion. In particular, Trane DeVore talked about interesting data and frequently made suggestions for stylistic improvements.

Finally, I would like to express my gratitude to my family for their support, and to my husband, Soo Hirasawa, for his encouragement and patience.





3.2 Psych-Verbs	31
3.2.1 Two Classes of Psych-Verbs	32
3.2.2 The Experiencer and Mental Locations in Causative Psych-Verbs	34
3.3 Cognitive Dimensions of Emotions	37
3.3.1 Event Structure of Emotions and the Cognitive Scenario	37
3.3.2 Duration: An Aspectual Dimension	42
3.3.3 Onset of Emotion	44
3.3.4 Degree of Intensity	46
3.4 Conclusion	47
Notes to Chapter 3	49

**Chapter 4: A Study of the Psychological Caused-Motion Constructions:  
With Special Reference to the Role of Verb Meanings 50**

4.1 Introduction	50
4.2 Background of This Study	51
4.3 Semantic Features of <i>Strike</i> Compatible with the Psychological Caused-Motion Constructions	55
4.3.1 <i>Strike</i> and Different Types of Caused-Motion Events	55
4.3.2 The Extensive Usage of <i>Strike Fear into NP</i>	59
4.3.3 Summary	64
4.4 Categorization within the Constructions	65
4.4.1 Variations in the Corpus Data	65
4.4.2 <i>Put the fear of God into NP</i>	68
4.4.3 <i>Hit</i> Verbs	69
4.4.4 <i>Instill</i>	71
4.4.5 Organization of Lower-Level Constructions	72
4.5 The Schematic Level of Verb-Noun Constructions	73
4.6 Conclusion	76
Notes to Chapter 4	78

**Chapter 5: The Interplay of Emotion Nouns and Constructions:  
The Comparative Study of Caused-Motion and Resultative Constructions**

**80**

5.1 Introduction	80
5.2 Previous Analyses and Constructional Views	81
5.2.1 Metaphorical Inheritance from the Caused-Motion Constructions	82
5.2.2 Specific Schema of a Lower-Level Construction	84
5.3 Two Construction Types	85
5.3.1 Construction I	85
5.3.1.1 Emotion Nouns Occurring with Construction I	85
5.3.1.2 Inheritance from the Caused-Motion Constructions	88
5.3.1.3 Interplay of Emotion Nouns and Lower-Level Constructions	89
5.3.1.4 Representation of Construction I	90
5.3.2 Construction II	95
5.3.2.1 Emotion Nouns Occurring with Construction II	95
5.3.2.2 Inheritance from the Resultative Constructions	98
5.3.2.3 Interplay of Emotion Nouns and Lower-Level Constructions	99
5.3.2.4 Representation of Constructions II	101
5.4 Conclusion	102
Notes to Chapter 5	105

**Chapter 6: The Division of Roles among Nouns, Verbs, and Emotion Concepts:  
The Case of *Send [Shiver] PP* Construction**

**108**

6.1 Introduction	108
6.2 Previous Studies	110
6.3 Analysis of the Usage of [Send [Shiver] PP]	111
6.3.1 The Specific Usage of <i>Send</i>	111

6.3.2 The Role of <i>Shiver</i>	113
6.4 Specific Features of Emotion Types on the Construction Pattern	114
6.4.1 Observation and Analysis Based on the Corpus Data	115
6.4.2 Characterization of Emotions in Relation to the “Prototype Scenario”	118
6.4.3 Focus on the Stages of the Scenario between Different Emotion Types	120
6.5 The [Send [Shiver] PP] Constructions as a Lower-Level Construction	122
6.5.1 Representation of the [Send [Shiver] PP] Construction	122
6.5.2 Valid Low Degrees of Schematicity of Constructions	124
6.6 Conclusion	127
Notes to Chapter 6	128

**Chapter 7: Conclusion 130**

7.1 Summary	130
7.2 Concluding Remarks	136

**References 139**

# Chapter 1

## Introduction

### 1.1 Aim

This thesis aims to explore the semantic features of English expressions, as exemplified in the following examples.

- (1) His fearsome appearance strikes terror into the hearts of his enemies. (LDOCE)
- (2) The coach instilled confidence into his player.
- (3) a. The innocent question threw her into a panic. (LDOCE)  
b. The 31-year-old prince sent his fans into a frenzy[...].

(<http://www.nugget.ca/2015/09/30/prince-harry-has-the-worlds-sexiest-beard>)

All the expressions in (1)-(3) are treated in terms of three characteristics. First, emotion nouns commonly occur in these expressions and are metaphorically treated as an Object. Second, each example demonstrates the features of causative psych-verbs, which involve an Experiencer and a Cause or Stimulus. Third, each of the examples in (1)-(3) can be skeletally represented as having the common syntactic form of [NP V NP PP]. These are categorized as argument structure constructions in terms of each form. Thus, the expressions in (1)-(3) are referred to as psychological constructions in this thesis. Throughout this thesis, the focus is placed on the semantic interplay of verbs, emotion nouns, and constructions.

- (4) a. That word sent shivers down my spine.  
b. That word sent shivers of delight down my spine.

Similar to (1)-(3), the expressions in (4) are also involved with psychological events. This

thesis thus explores the idiomatic expressions in (1)-(4) as psychological constructions. In fact, these expressions take the common syntactic form of [NP V NP PP]. This abstract form would be related to the event structure that evokes participants. In particular, psychological constructions describe specific psychological events. This basic idea of these constructions leads us to capture a range of linguistic expressions including conventionalized patterns and idioms.

This thesis draws on Construction Grammar (e.g., Fillmore, Kay, and O'Connor 1988, Lakoff 1987). In this theory, constructions are defined as learned form pairings with meanings and pragmatic functions. In particular, Goldberg (1995) advanced a constructional approach to argument structures to offer a unified account for relations between verbs and constructions. Since Goldberg (1995), several researchers have admitted the advantages of this approach while revisiting some of its problems. For example, numerous research papers have proposed the need for fine-grained verb semantics in the framework of *lexical constructional approaches* (e.g., Boas 2003, Nemoto 1998, Iwata 2008). I have thus adopted the lexical constructional approach in this thesis. This thesis therefore aims to contribute to Construction Grammar, particularly to the lexical-constructional approach.

Lexical-constructional approaches generally adopt outstanding aspects: the usage-based view (e.g. Barlow and Kemmer 2000, Langacker 1987, 2008, Bybee 2010) and an emphasis on fine-grained semantics. The lexical constructional approach shares the commitment to the usage-based model of language. From this perspective, constructions are schema abstracted and bottomed up from the individual occurrences in usage events. In addition, constructions have varying degrees of abstraction. Croft (2003) introduces the lower-level constructions, as *verb (-class)-specific constructions* are useful in handling the semantic description for ditransitive constructions. Moreover, Iwata (2008) has developed full use of verb-specific constructions in a lexical-constructional account. This thesis follows this view, analyzing data from the corpora and proposing the significance of the lower-level constructions.

With the respect to the data, I will use the data from the BNC (British National Corpus) and COCA (the Corpus of Contemporary American English). In order to

examine the features and distributions of each psychological construction, individual occurrences and their frequency are analyzed. The BNC and COCA contain more than 100 million words covering material from multiple genres such as spoken data, books, magazines, and academic articles. The data will illustrate both the dynamic usages and the most frequent occurrences in terms of the target constructions. However, there are various possible sentences outside of these corpora. I have also considered native speakers' intuition as a necessary feature of the discussion. In some case, I will use the examples found through Google and other web searches when I exhibit the possibility of occurrences that corpora do not include.

As mentioned, psychological constructions commonly take emotion nouns as in (1). In order to research emotion nouns, I constructed a list of emotion nouns based on Johnson-Laird and Oatley (1989), who collected no fewer than 590 emotion words from dictionaries and their corpus.<sup>1</sup> In particular, the thesis deals with constructions that include emotion nouns to express metaphorical elements or abstract entities. Construction Grammar can cover the range of these expressions, but little research has been conducted thus far (see Sullivan 2013); this thesis can therefore suggest a new perspective regarding lexical constructional approaches. In fact, psychological constructions are related to constructions well-known in the literature. The two main points of discussion are as follows:

1. How are emotion nouns and verbs related to the entire meaning of a psychological construction?
2. What degrees of the lower level constructions are related mutually in the organization of constructions?

Regarding question 1, this thesis presents the distribution of verbs and emotion nouns that appear in individual constructions, and their roles for semantic association. Related to questions 2, this thesis proposes that psychological usage is related with the central feature of the constructions closely in terms of schematicity. It is possible that considering the emotion noun's behaviors, the central feature of the constructions is linked with the

co-occurrences of emotion nouns. The examination of the lower-level constructions allow us to account for them in the lexical constructional account, but the levels of these constructions are not clear for psychological constructions. The thesis provides the answers to these questions by using a lexical-constructional approach, by exploring psychological constructions, and by proposing their semantic features.

## **1.2 Organization of Thesis**

This thesis is organized as follows. Chapter 2 reviews previous studies and the framework with which this study is concerned. The first part of the chapter introduces the tenet of Construction Grammar (Goldberg 1995, 2006), and examines its advantage for analyzing psychological constructions. However, I also point out the problems of constructional accounts as proposed and assumed by Goldberg (1995). Then, the end of the chapter explicates the alternative advanced constructional approach, or the so-called lexical constructional approach (e.g., Boas 2003, Iwata 2008, Nemoto 1999). In this part of the chapter, I first introduce the need for low schematicity for these constructions, a schematicity that is supported by the usage-based analysis viewpoint. Second, I present the need for fine-grained semantic analysis of the constructions, examining an account proposed in Nemoto (1999). Finally, I predict a further applicable analysis of psychological constructions from a lexical constructional approach and provide the necessary evidence to develop this approach.

Chapter 3 provides an overview of English causative psych-verbs that contain semantic similarities to psychological constructions. The psychological constructions are based on understanding locative expressions ((1)-(4)). The chapter also overviews the semantic elements associated with emotion concepts with regard to cognitive semantic views according to the comparison between the event structure metaphor of emotions and emotion frames. I will point out the three psychological semantic elements, namely duration, onset of emotions, and degrees of intensity. In essence, analysis of these semantic elements associated with verbs, emotion nouns, and construction-specificity can identify psychological constructions.



Chapter 4 examines the psychological-caused motion constructions as in example (1), which illustrates the use of strike functions as a prototype, and extends the other uses of verbs associated with the [V [FEAR] into NP] pattern, based on practical data. I then argue that noun-specific constructions, which is denoted particular nouns, function with a central status for their categorization of the lower-level constructions. I suggest the lower-level constructions denoted by fear function to increase their variations in terms of productivity. Further, I suggest that verb-noun constructions are directly associated with a particular verb and noun at a lower level of schematicity than verb-specific constructions. These two types of lower-level constructions play a role in sanctioning concrete expressions and systematically capturing the semantic relationship between abstract constructions.

Chapter 5 compares two similar psychological constrictions [V [Emotion Noun] into NP] (=1), (2)) and [V NP into [Emotion Noun]] (=3)). The discussion considers the adequate schematicity for capturing these lower-level constructions. The chapter continues by suggesting the need for a specific analysis of lexical meanings and for more detailed lower levels of construction that refer to noun meanings, namely verb-specific constructions, noun-specific constructions, and verb-noun constructions. Moreover, I will address the distinctive independent constructions by examining inheritance in terms of each of the two types of constructions. The two types of constructions seem to be grouped into one large category, but this treatment is not captured in terms of their features.

Chapter 6 discusses the semantic features of the constructions, exploring one idiomatic expression that shows patterns like (4), namely [send [shiver] PP (a prepositional phrase)], whose form is the same as the caused-motion constructions. The constructions can cover a particular range of emotion types, which are compatible with verbs and nouns; the constructions can also constrain some emotion types. Actually, this construction designates the collocational preference of emotion nouns from the data. I will suggest that emotion concepts of this construction are related to the emotion scenario proposed by Kövecses (1990). In addition, I will also discuss the organization of [send [shiver] PP] constructions in a lexical constructional perspective. The concrete constructions associated with a particular verb and noun are linked to the organization of

verb-specific constructions through categorization. Then, semantic interplay with words and high-level constructions are revealed.

Chapter 7 then gives a summary of this thesis and concludes with larger consideration of the semantic interplay of verbs, emotion nouns, and psychological constructions at both lower levels and more abstract levels in the constructional hierarchical organization. It emphasizes the need for adequate lower-level constructions that the lexical constructional approach has provided. In accounting for psychological constructions, the discussion emphasizes consideration of idiosyncratic combinations of verbs and nouns, associated with certain psychological elements.

Throughout this thesis, a lexical-constructional account of psychological constructions is given through a more detailed consideration of verbs, nouns, and constructions.

## Notes to Chapter 1

<sup>1</sup> The list of emotion nouns is based on that of Johnson-Laird and Oatley (1989). I selected the emotion nouns that appear at least 100 times in the BNC. I excluded the metaphorical extended uses of words in terms of expressing an emotional state, such as *fire* and *wound*.

## **Chapter 2**

### **Construction Grammar Approaches**

#### **2.1 Introduction**

This chapter introduces the basic idea of Construction Grammar and then emphasizes some significant aspects of lexical-constructional approaches. First, I present an overview of the Construction Grammar proposed by Goldberg (1995, 2006) and observe semantic constraints and verb compatibility within particular argument structures. Goldberg (1995) proffers the advantages of Construction Grammar approaches to argument structures and presents some cognitive perspectives.

Second, I review the critics claiming the need for more detailed verb semantics. To overcome the problems thus identified with Goldberg's Construction Grammar, this thesis follows a lexical-constructional approach—a variation of Construction Grammar—and confirms the principles of constructional grammar theories, before presenting an analysis of this thesis, from the perspective of Iwata (2008). Third, I briefly outline the organization of constructions as proposed by Iwata (2008) and then examine the need for fine-grained semantic analysis, introducing the use of the verb *kick* as suggested by Nemoto (1999). Finally, I raise issues related to the application of a lexical-constructional approach to metaphorical argument structure constructions, including psychological constructions, which are treated in the same approach.

#### **2.2 Construction Grammar**

Construction-based accounts work to capture the nature of language from abstract forms to idiomatic patterns. The basic common idea that Construction Grammar accounts share is that constructions are grammatical units of conventionalized form and meaning pairings. Constructions are categorized according to cognitive process, pragmatic

functions, and constraints.

### **2.2.1 Constructions**

In this section, I outline the basic concept of constructions as well as the background to cognitive views of them. Goldberg (2006) posited the following definition of constructions, with which most construction grammarians more or less agree:

Any linguistic pattern is recognized as a construction as long as some aspect of its form or function is not strictly predictable from its component parts or from other constructions recognized to exist. In addition, patterns are stored as constructions even if they are fully predictable as long as they occur with sufficient frequency [...]. (Goldberg 2006: 5)

This explanation illustrates the two main aspects of constructions. First, constructions are involved with various levels of grammatical units, such as morphemes, words, idioms, and larger linguistic patterns. The definition of constructions includes general, regular productive patterns as well as particular idiosyncratic patterns. It covers the general linguistic patterns that are compositionally treated or semantically transparent by virtue of a linguistic unit (cf. Goldberg and Jackendoff 2004). In fact, collocation patterns are also treated as one construction (Croft 2001, Hilpert 2014). It is concerned with the degree of conventionality of expressions in usages. Second, the usage-based view of linguistic constructions is shared by constructional approaches, although these differ in terms of their focus. Constructional approaches posit a relation between abstract constructions and more specific constructions can be captured as the organization of the constructional network structure.

Constructions are exposed to usage events, which constitute a network of constructions. The constructions within a network interact with each other in a complicated fashion. Lakoff's constructional view (1987), suggests the principles of the grammatical systems to be "ecological."

Central principles play a dual role. First, they characterize form-meaning regularities for central subcategories, e.g., prototypical clauses, nouns, verbs, adjectives, subjects, etc. Second, they characterize the way in which non-central cases are like central cases. That is, they help characterize what it means for a non-central case to be motivated by central cases. (Lakoff 1987: 492)

The statement above clearly reflects the line of thought in which constructions are motivated by the interactions of various construction units with usage events. Relevantly, Taylor (2002, 2012) suggests that a language unit has an “ecological niche,” which forms part of the inventory of linguistic units of which the language is composed. Taylor (2002) indicates that the specific features of an idiomatic pattern, such as *Bang goes my weekend!*, are motivated in many ways by their form, meaning, and pragmatics and that they reflect usage events. Taylor (2002) suggests that some other constructions show partial commonalities with [bang go NP] constructions. The three constructions shown in (2)–(4) below are different in terms of semantics, although they share the [X V NP] schema, including [bang go NP] constructions, and show the common feature that NP follows the verb: the deictic *there* construction in (2); the prepositioned directional phrase in (3); and the prepositioned locative in (4).

- (1) Bang goes my brilliant plan. (LDOCE)
- (2) There goes Harry, with his girlfriend. (Taylor 2002: 580)
- (3) Away ran the children. (Taylor 2002: 580)
- (4) Up on the hill used to stand the governor’s residence. (Taylor 2002: 580)

In addition, the concept of the ecology of constructions can be related to a usage-based approach: the ecology of constructions offers a broad perspective on instances of constructions, whereas the usage-based approach reveals the schematization of constructions. The language structure is captured by means of a usage-based model, reflective of the fact that usage events are the source of all linguistic units. Taylor (2002) characterizes the usage-based approach as follows:

**Usage-based approach.** The claim that linguistic knowledge is acquired ‘bottom up’ on the basis of encounters with the language, from which schematic representations are abstracted. Also: that knowledge of language might consist very largely in knowledge of low-level generalizations, even in knowledge of specific expressions, even if these conform with more general schemas. (Taylor 2002: 592)

According to Taylor (2002), constructions are organized by their usages and abstract structure. Constructions seem to form a kind of hierarchy built by categorization.<sup>1</sup> There is a dynamic relationship between usage events composed of linguistic knowledge and language structure within the usage-based model. As mentioned above, linguistic events are the source of all linguistic units (Barlow and Kemmer 2000, Langacker 2000, 2008, etc.). This view is broadly regarded as a standard tenet of Cognitive Grammar and Construction Grammar.<sup>2</sup> The organization of constructions is composed of various ranges of schematization and, at the same time, instances that mutually interact based on their similarity.

Another aspect of the usage-based view sheds light on collocations as constructions. There is a continuum between collocations and syntactic patterns and semantics (Croft 2001). First, collocations exhibit different semantic dependency. For example, the restrictions on *mud* show the combination of word meanings compositionally, as in the contrast shown below:

- (5) a. Mud oozed onto the driveway. (Croft 2001: 180)  
b. ?\*The car oozed onto the driveway. (Croft 2001: 180)

A collocation must be represented by a specific combination based on the compatibility between word meanings. Second, constructions exhibit collocational preferences over the combination of words. Although associated with conventionality, some collocation does not affect semantic compositionality. The collocations are actually combinations that frequently occur with each other. For example, the preference of a lexical relation appears

as in the pair of {*toasted* / ?\* *roasted*} *bread* and {?\**toasted* / *roasted*} *meat* (Croft 2001: 180). These instances are composed of frequent collocational patterning that is regarded as a unit of a construction. A collocational analysis shows that the co-occurrence data we reviewed in the above thesis will provide the evidence necessary to capture the specificity of psychological constructions. Construction Grammar characterizes all levels of linguistic patterns and follows a usage-based view.

## 2.2.2 Construction Grammar Approaches to Argument Structure

### 2.2.2.1 The Basic Framework of Construction Grammar

First, I outline Goldberg's (1995) basic framework of Construction Grammar in order to present the advantages of adopting a constructional approach to argument structure. Second, I introduce some of the problems arising from Goldberg's approach. Goldberg (1995) emphasizes the significant role of constructions, but some empirical problems with the constructional approach have been identified. The basic concept of Construction Grammar is still, however, primarily Goldberg's theory (1995).

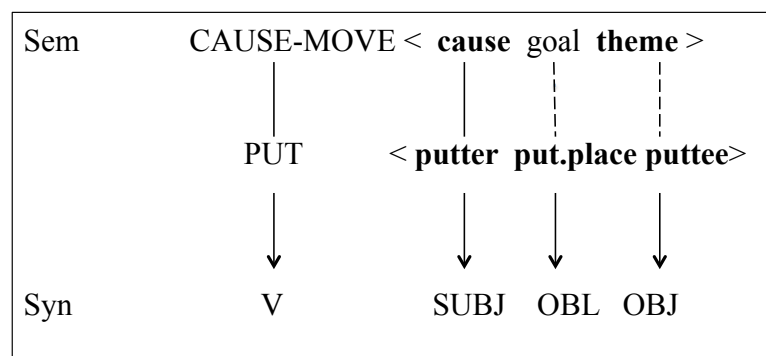
Construction Grammar offers a definition of "construction" as the fundamental pairing of form and meaning as a grammatical basic unit. The significant point is that a construction is not strictly predictable from a composite structure of constituents and distinguishable from other constructions. Goldberg (1995) emphasizes that the advantage of the constructional view is that it eradicates the need to posit further verb meanings in cases occurring in unusual environments, exemplifying the well-known sentences displayed in (6) below. The following sentences are not predicable from compositional analyses based on verb semantics. The examples show constructions that can add one more argument to the verb meaning of *laugh* and *sneeze*. In fact, these constructions can supply such arguments as a theme, path, or goal to the event structure, in order to realize the argument structure.

- (6) a. They laughed the poor guy out of the room. (Goldberg 1995: 152)  
b. Frank sneezed the tissue off the table. (Goldberg 1995: 152)



The representation of the structure of construction is not complicated since it shows the argument roles of constructional semantics to be directly associated with the participant roles of the verb. Take the caused-motion construction and *put* as an example. As shown in Figure 2.1, it comprises three different layers. The constructional semantics show CAUSE-MOVE <cause, goal, theme> in the top of the box, while verbal semantics show PUT <putter, put.place, puttee> in the middle of the box. In terms of the levels of schematicity of constructions, Goldberg (1995) puts forward the following argument structure constructions:

Figure 2.1 Composite fused structure: caused-motion + *put*



- (7)
- |                  |                         |                  |
|------------------|-------------------------|------------------|
| 1. Ditransitive  | X causes Y to receive Z | Subj V Obj Obj2  |
| 2. Caused-motion | X causes Y to move Z    | Subj V Obj Obl   |
| 3. Resultative   | X causes Y to become Z  | Subj V Obj Xcomp |

(adapted from Goldberg 1995: 3)

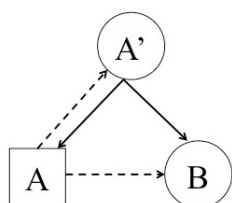
Thus, Goldberg (1995) indicates that constructions serve to associate the syntax and event semantics of verbs. The verb meanings include information about its participant roles compatible with the construction-specific semantics, as seen in Figure 2.1 and (7). In Goldberg (1995), the interaction between a construction and a verb represents the separation of syntax and lexicon, based on the structure of Figure 2.1. Thus, the construction-specific semantics exhibit a highly schematic event structure, and their concrete expressions are then sanctioned by a suitable fusion of lexical items and skeletal

constructions.

### 2.2.2.2 Inheritance Link

Inheritance is a central concept for Construction Grammar theory. With inheritance, the relation between two types of construction is recognized in organizing a construction category. Inheritance is based on the cognitive process of categorization. The fundamental relation is diagrammed in Figure 2.2 (adapted from Langacker (2000: 13)). Constructions and their instances in terms of varying abstractions are related in the following two ways. In Figure 2.2, the vertical relations between A and A' shows the elaboration from A to A'; this process is *schematization*. Next, the horizontal relations between A and B are linked through their similarity. A can play the role of a prototype. The dashed arrow from A to B shows the relations based on their mutual commonality, which is called *extension*. Notably, the schema A' specifies both A and B, which are eligible to be instances of A,' as shown by the down-pointing arrow starting at A.'

Figure 2.2 Extension and schematization

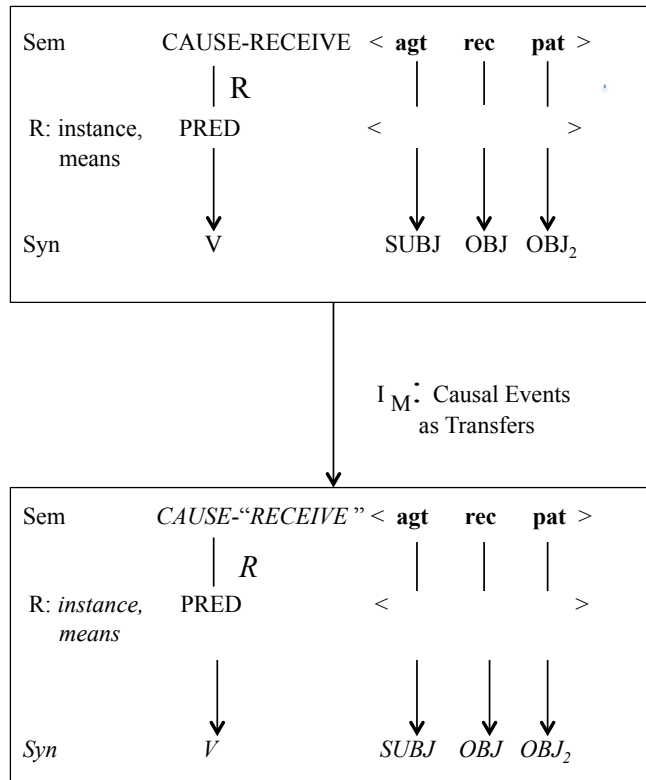


The process shown in Figure 2.2 above is linked to another instance and elaborated into a complex structure, viewed as a network. Significantly, constructions work as schemas in one category and sanction their instances. The two manners of categorization are associated with the process of the inheritance linking of constructions in Construction Grammar (Goldberg 1995).<sup>3</sup>

Notably, Construction Grammar can deal with the metaphorical uses of constructions. Goldberg (1995) suggests that systematic metaphors function as semantic restrictions on constructions, and she discusses the semantic constraints and metaphorical

extensions of ditransitive constructions, as shown in the following figure (Goldberg 1995: 145).

Figure 2.3 Metaphorical extension links



As shown in Figure 2.3 above, ditransitive construction is represented in the upper box and linked with the lower box, which also represents metaphorical ditransitive construction. The metaphor “Causal Events as Transfers” allows the ditransitive constructions to encode the causation that links basic ditransitive constructions and extended use of constructions. Notably, metaphorical links work to connect the source domain and target domain in a systematic metaphor between constructions. The following sentences are licensed by the causal-events-as-transfers metaphor. The sentences in (8) imply that the Subject is the cause of the first Object and is affected in some way by receiving the second Object denoting abstract entity. Both of the examples shown in (8) are licensed by the same systematic metaphor.

- (8) a. Mary gave Joe a kiss. (Goldberg 1995: 141)  
 b. Mary's behavior gave John an idea. (Goldberg 1995: 141)

Furthermore, Goldberg (1995) proposes that semantic constraints are also held in metaphorical extended ditransitive constructions. The relation between the literal and the metaphorical transfer is motivated. Therefore, the metaphor is motivation for metaphorical ditransitive constructions.

However, an issue arises with respect to the expressions licensed by the metaphor: the fact that various metaphorical uses in ditransitive constructions appear using *give*, as shown in (9):

- (9) a. Jo gave Mary an insult. (Goldberg 1995: 147)  
 b. Jan gave Chris a punch. (Goldberg 1995: 147)  
 c. Bill gave Chris a headache. (Goldberg 1995: 147)

In (9), abstract Objects as the transferred Objects appear in the same form [give NP1 NP2], and the second Objects present fair differences between themselves. The ditransitive constructions of *give* cover various events through an extension of their central meaning. The (9a) event represents a communication; (9b) a causation of impact-by-contact; and (9c) a change of the internal body. Goldberg's analysis might capture semantic compatibility and feature its constituents in detail, but Boas (2010) also claims that the subtle verb meanings are due to the acceptability of ditransitive constructions with communication verbs.

Therefore, Goldberg (1995) proposes that the roles of metaphors in ditransitive constructions are progressive, but leaves open another problem in terms of words compatible with constructions. This has led to the examination of detailed semantics of nouns and verbs acceptable to co-occur.

### 2.2.2.3 The Interaction between Lexical Semantic Information and Constructions

Goldberg's constructional account needs to be carefully revisited with respect to

verb meanings and the schematicity of constructions. Her analysis needs additional careful consideration as to word meanings that are compatible with individual constructions. Several scholars have recently suggested the need for a more detailed analysis of verb meanings, including Nemoto (1998,1999), Boas (2003, 2010), van der Leek (2000), and Iwata (2005, 2008). Some researchers indicate that abstracted structures (see Figure 2.1) cannot capture the features of individual constructions and emphasize the need for lower-level constructions that are closed to individual occurrences (Boas 2003, 2010; Croft 2003 2012; Iwata 2008). In particular, Iwata specifically criticizes the fact that “these constructions are quite abstract, with a skeletal syntax and highly schematic semantics” (Iwata (2008: 6)). Thus, Goldberg’s analysis is problematic because the representation of construction and a particular verb is too abstract to capture the interaction with verb semantics.

Second, let us consider the verb meanings and semantic constraints of caused-motion constructions. Goldberg suggests the semantic constraints on caused-motion constructions determine compatibility with verbs. For example, the differences between *hit* and *strike* results in affectedness, as shown in (10) below. For the acceptability of *hit*, Goldberg (1995) accounts the following: “If the action denoted by the verb implies an effect other than motion, then a path of motion cannot be specified.”

- (10) a. He hit the ball across the field. (Goldberg 1995: 170)  
 b. \*He struck the ball across the field. (Goldberg 1995: 170)

Jackendoff (1990) also discusses Goldberg (1995), explaining that *strike*-class verbs cannot co-occur with caused-motion constructions because they entail an effect other than motion and are ruled out by semantic restrictions, as seen in the examples shown in (10).

Denoted in (10a) is an unaffected direct Object, whereas (10b) denotes an affected Object. Conversely, Matsumoto (2002) presents counterexamples and indicates that verb semantics should be examined deeply in terms of the license for constructions. The co-occurrences with the caused-motion constructions can actually be found in the *Oxford Dictionary of English*, where, as shown in (11), *strike* denotes an action of kicking or

hitting in a sports context:

(11) He struck the ball into back of the net.

(adapted from *Oxford Dictionary of English*)

*Strike* thus denotes the various usages of caused-motion construction. The usage shown in (11) is limited to a sports context. A counterexample can be found with regard to verb meanings. This fact suggests that more specific analysis of verbs is required in order to contend the relationship between verbs and constructions. The concept of semantic constraints on constructions is unsuitable for capturing the instances. In short, the verb meaning connects with complicated elements including conventional usages and the specific situation in using concrete expressions of constructions. Therefore, it is clear that the semantic constraints posited by Goldberg (1995) are not sufficient to capture the features of the caused-motion constructions. The treatment of constructions should be closely involved in rich lexical meanings.

To overcome the problem of constructions and lexical semantics, this thesis adopts a variation of Construction Grammar that also develops a constructional theory, namely *a lexical-constructional approach*.

### **2.3 Lexical-Constructional Approaches**

This chapter will introduce and clarify a more suitable version of the constructional approach that takes into consideration the interaction of constructions and verb meanings. This revised concept embodies *a lexical-constructional approach*. To develop Construction Grammar, many theorists suggest the need for more fine-grained semantic analyses of verbs and the constructions in which they occur (see Boas 2003; Croft 2003, 2012; Nemoto 1998; Iwata 2005, 2008; Kitahara 2010, among others). Iwata's analyses, in particular, develop a coherent account of constructions from lexical-constructional approaches (Iwata 2005, 2008, etc.). The main idea of such analyses is not essentially different from Goldberg's Construction Grammar and follows the concept of the pairing

of a form and its meaning. It offers constructional accounts according to a concept of the usage-based model (see Barlow and Kemmer 2000).

### **2.3.1 The Schematicity of Constructions**

The basis of a lexical-constructional approach is that constructions are captured in terms of schemas of varying levels of abstraction over a lower level of individual occurrences. The concrete expressions influence interaction between constructions and the words that occur within them. In particular, they are directly associated with the lower level of the construction schema. Constructions are organized by their usages and abstracted over the higher-level schema in a bottom-up fashion. In short, constructional semantics are related to the meanings of specific words, including verbs, rather than the abstract schematic meaning of constructions. Commonly, constructions are viewed as “conventional linguistic units.” The schema-instance relations between constructions are identified through abstraction from a group of instances of a specific construction. In a bottom-up manner, a constructional schema can be identified at various levels of schematicity, including such fine-grained levels of schema as concrete expressions.

Thus, the lexical-constructional approach adopted here incorporates the idea that constructions are schemas elaborated from individual occurrences of constructions in usage events. Croft (2003, 2012) emphasizes that a *verb-specific construction* should include a direct representation of a lower-level construction that explicitly includes a particular verb. In Croft (2003), verb-specific constructions share properties with the specific lexical features associated with them. The lexical representation of a verb’s meaning overlaps with its argument structure and is henceforth regarded as a “construction,” as can be seen in the citation below:

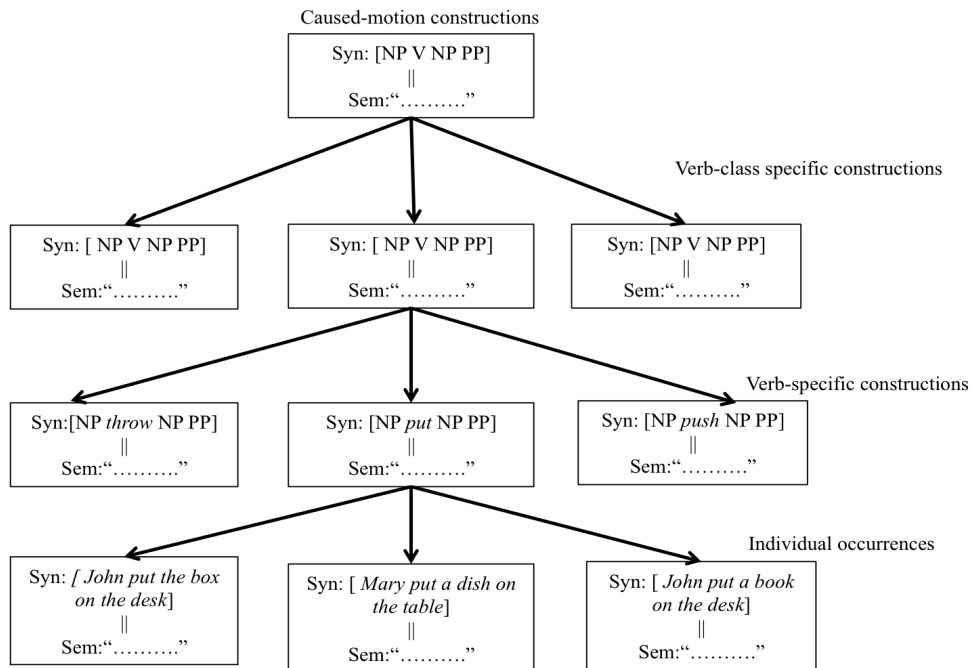
Verb-specific constructions are simply more specific types of constructions. Constructions are popularly represented as abstract syntactic schemas without specific lexical content (except for obligatory inflections and function words). But they need not be that abstract. Verb-specific constructions are constructions but their schemas have specific lexical content for the verb. (Croft 2003: 59)

The verb meaning encodes more detailed information related to its event structure, associated with the event. Under the usage-based model, constructions are captured as schemas corresponding to the degree of abstraction. The verb meanings are combined with the constructional semantics that can occur with them, and the verb-specific construction can be treated as a basic level to feature the semantic interplay of verbs and argument structures in the usage-based models. This combination forms collocation, encoding the event semantics of transfer, caused motion, and change of state, etc. Thus, verb-specific constructions are understood as semantic compositional patterns, but they exhibit the preference between a verb and other constituents, with regard to frequency.

From the viewpoint of verb-specific constructions and verb-class-specific constructions, it is possible to extract isolated verb meanings from the overall meaning of the construction. Iwata (2008) proposes a hierarchical organization of constructions, as reflected in Figure 2.4 and suggests that a linguistic construction contains individual occurrences as well as such lower-level constructions as verb-specific and verb-class-specific constructions.



Figure 2.4 Organization of the caused-motion constructions (adapted from Iwata 2008: 37)



The figure above illustrates the abstraction from occurrences of *put* in the case of caused-motion constructions. *Put* appears in various contexts and is used to describe the action in a range of scenes. Such occurrences of *put* are abstracted and categorized as one type of verb-specific construction containing *put*. The verb-specific construction is identified as the common syntactic frame [NP V NP PP] for the use of *put*. This representation of verb-specific constructions is defined as collocation. However, the collocational patterns play a role in semantic compositional constructions at the lower level.

Following from the above, verb-specific constructions with other verbs that have meanings and uses similar to those of *put* are abstracted and categorized as one class. This is how a verb-class-specific construction is organized. At the level of verb-class-specific constructions, other verbs such as *throw* and *push* appear together with *put*. At the top of the schema is a skeleton of caused-motion constructions, as shown in Figure 2.1. This level of abstraction corresponds with a “construction” as defined by Goldberg (1995, 2006).

Along the same lines as Croft (2003), Iwata (2008) explains, “a verb-specific construction handles so-called subcategorization properties and selectional restrictions (cf. the “Verb Island Hypothesis”<sup>4</sup> in Tomasello (1992)), whereas a verb-specific construction is associated with its syntactic and semantic regularities of a verb class” (Iwata 2008: 37). From this perspective, it makes sense to analyze specific features of idiomatic expressions as either verb-specific constructions or verb-class-specific constructions. From another perspective of the usage-based model, these constructions have a dynamic nature in that a central or prototypical instance and associated peripheral instances function together as one member of a particular construction.

The present thesis follows the schematicity of constructions as proposed by Iwata (2008) in terms of analyzing the semantic relations between word meanings and construction meanings at varying levels of abstraction. If one verb covers a wide range of usages, it may be that its related verb-specific construction is divided into more specific subtypes with respect to other constituents in the construction. However, the horizontal relations between construction schemas can be extended by interaction of individual items (in the organizations shown in Figure 2.4). Moreover, the extension from a construction is not taken into consideration in terms of the organization of constructions. Iwata (2008) does not pay attention to extensive features that can deal with the productivity of constructions when it comes to increasing variants of them (cf. Boas 2009). Thus, this thesis will reinforce the specific features of the lower-level constructions with respect to both horizontal and vertical relations of construction schemas.

### **2.3.2 The Need for Fine-Grained Semantic Analysis**

Fine-grained semantic analysis is required for lower-level constructions as part of a lexical-constructional account. Boas (2010), for example, claims that verb-specific constructions show a rich, meaningful structure at a more detailed level.<sup>5</sup> Iwata (2008) emphasizes that the interactions between verb meanings and constructions are not separate from one another; instead, verb meanings are involved in particular event types encoded by constructions.

A usage-based view entails that verb meanings, besides constructional meanings, are also abstractions over usage-events. Also, there is no guarantee that verb meanings can be clearly separated from constructional meanings, in that there are likely to be overlaps between verbs and constructions.

(Iwata 2008: 99)

Thus, a lexical-constructional analysis focuses on the rich meaning of verbs, as verb meaning is associated with event structure. The verb encodes the specific scene that is represented by an event structure associated with a construction.

Let us turn now to a lexical-constructional account of the compatibility between verbs and constructions. Nemoto (1999) proposes a rich semantic analysis for the case of a verb like *kick*, associated with its argument structure. She analyzes the encyclopedic nature of verb meanings in the case of *kick*. Nemoto (1999) observes that *kick* encodes two distinct event frames, namely an event of “leg-movement,” and an event of “contact-by-impact.” The sentences in (12) exemplify different uses of *kick* that are compatible with multiple constructions. This observation captures the correspondences between the sentences in (12) and the uses of *kick* in (13).

- (12) a. The horse kicks.  
b. Pat kicked his foot against the chair.  
c. Pat kicked the wall.  
d. Pat kicked the football into the stadium.

(Nemoto 1999: 37)

- (13) a. leg-movement kick + the intransitive construction.  
b. leg-movement kick + the body-part movement construction.  
c. contact-by-impact kick + the transitive construction.  
d. contact-by-impact kick + the caused-motion construction.

(Nemoto 1999: 37–38)

Thus, the act denoted by *kick* may be construed in one of these two ways. The former entails simply the action of kicking, whereas the latter involves both the former sense and the idea of actual contact. Let us focus on part of Nemoto's (1999) analysis of contact-by-impact *kick*. Nemoto (1999) suggests that both verbs and the constructions in which they occur play a key role in reflecting the total meaning of the sentence, although Goldberg (1995) suggests that the construction itself plays a stronger role than the verb. The instance of transitive construction in (12c) evokes the relation between two participants, namely a *kicker* and a *kickee*. For an instance of caused-motion construction in (12d), the relationship can be specified further and represented in terms of a *kickee*. *Kick* in (12a) and (12b) represents "a person's impacting his/her foot onto an immovable entity." However, *kick* in (12c) and (12d) represents "a person's impacting his/her foot onto a movable entity." Thus, one verb denotes two different focuses of the action involved, and each links with particular constructions that designate the related event of kicking.

The constructions shown in (12) can be categorized at the level of verb-specific constructions of *kick*. Such a constructional account with a focus on specific semantics may help to overcome certain problems of Construction Grammar and to further develop the theory.

Next, let us reconsider some other cases related to lower-level constructions. Within the perspective of the schematicity of constructions as described above, the constructions associated with *kick*, as in (13), may each be abstracted and represented as verb-specific. The verb-class-specific constructions for *kick* associated with the senses seen in (12) and (13), all indicate either leg-movement *kick* or impact-by-contact *kick*, as shown by Nemoto (1999). Other verbs that have a similar meaning to *kick* and appear in the same type of construction may be categorized as the same type of verb-class-specific construction that includes *kick*. The lower-level caused-motion constructions in (14) illustrate this point.

- (14) a. Sam kicked the ball into the net.  
b. Sam pushed the desk into the room.  
c. Sam hit the ball over the fence.

The individual verbs *push* in (14b) and *hit* in (14c) evoke “a person’s impacting his/her hands onto a movable entity,” as does *kick*. This correspondence is set out in (15) below. The difference between the actions depicted by these three verbs lies in the manner of movement, but the events are all fairly similar, in that all involve impact by contact and a movable entity.

- (15) a. kick: a person impacting his foot onto a movable entity.  
b. push: a person impacting a body part, such as a hand, onto a movable entity.  
c. hit: a person impacting a tool, such as a racket or a bat, or his hand, onto a movable entity.

In (15), all three events clearly represent impact by contact, despite the manner of action being different. Such verbs may also be compatible with constructions other than the caused-motion construction, as is the case with *kick*. However, if any of these verbs occurs in a caused-motion construction, the senses given in (15) are linked with that use of the verb. In other contexts, these verbs may well behave in a different way. Thus, verb classification appears to be dependent on both meaning and syntactic context. The lower-level construction specifies the sports context directly when the verb occurs with *ball* as shown in (16a). However, *desk* evokes a different context, and the actions do not have the same sense as those denoted by the verbs in (16a).

- (16) a. Pat {kicked / pushed / hit } the ball into the corner.  
b. Pat {kicked / pushed / \*hit } the desk across the field.

The verb-specific constructions associated with one particular verb meaning are abstracted away from their individual occurrences and built into organization on a higher level. In particular, the verb-specific constructions using *kick*, *push*, and *hit* include a

common element, namely a movable entity as a specific Object. This common Object feature at the level of verb-specific constructions can be linked to verb-class-specific constructions at the higher level, by which they are grouped together. Notably, the properties of Objects are significant in identifying the verb meanings in detail. A verb denotes various meanings compatible with the context of particular constructions, as is also possible with combinations of nouns. The Object plays a role in identifying lower-level construction events.

Based on the idea of lexical-constructural approaches, in order to capture adequately the semantics of individual constructions, the effect of constituents other than verbs on constructions and their meanings should be considered. In particular, it is naturally expected that the semantic features of nouns will also be involved in the meaning of constructions. This strongly suggests that a lexical-constructural account requires more fine-grained semantic analysis for certain linguistic phenomena. With the information yielded through fine-grained semantic analysis, the specific features of psychological constructions can be represented, including possible combinations of verbs and nouns. Therefore, the fine-grained semantic analysis of words enables us to make a valid account of constructions.

#### **2.4 Outlook for Metaphorical Extension of the Argument Structure Constructions**

The review of lexical-constructural approaches shows that lower-level constructions are useful for capturing specific combinations of words. Abstract constructions are also linked with their lower-level constructions. In terms of the metaphorical case, metaphorical mapping motivates the relationship with basic constructions through a systematic metaphor in Construction Grammar. Accordingly, a lexical-constructural approach in this thesis has been applied to metaphorical argument structure constructions.

There are contrasts, as in (17a) and (17b) below, which are metaphorically extended from ditransitive constructions.

- (17) a. She gave Jo her thoughts on the subject. (Goldberg 1995: 148)  
b. \*She assured Jo of her love. (Boas 2010: 57)

Sullivan (2013) suggests that the constructional semantics of ditransitive constructions work well enough in the metaphorical usage. There is a limited range of metaphorical usages by virtue of semantic constraints. Generally, the recipient of ditransitive constructions is required to denote animate property in order to receive an object in literal ditransitives, and then the location cannot appear in the constructions, as in (18) below. Similarly, metaphorical usages behave like the basic ditransitive constructions, as shown in (19).

- (18) \*John sent Alaska (Janice/me) a polar bear. (Sullivan 2013: 102)  
(19) a. \*Dave pushed the alligator pit the boy. (Sullivan 2013: 102)  
b. \*Dave pushed criminal behavior the boy. (Sullivan 2013: 102)

In short, the same schema of literal constructions motivates metaphorical constructions. It is considered that both the abstract level and lower-level constructions are connected under the hierarchical network of construction schemas. Metaphorically extended constructions are motivated by their construction-specificity. In fact, constructions extended metaphorically to an abstract domain are linked together to constructions at the higher-schematic levels with reference to a network structure.

Thus, metaphorical usages are treated as lower-level constructions. They inherit from the general semantic features of the constructions in the organization of constructions. By examining the co-occurrences of words, the whole meanings of a metaphorical construction can be accounted for coherently. Further to the prediction, psychological constructions are metaphorically linked with argument constructions. Thus, I will go on to investigate psychological constructions with this lexical-constructional approach in Chapters 4–6.

## 2.5 Conclusion

This chapter explains the basic concept of Construction Grammar and the significant tenets of the lexical-constructional approach. Goldberg's theory (1995, 2006) proposes that constructions function as basic grammatical units, but this is shown to raise problems in terms of the treatment of verb meanings and constructions. The lexical-constructional approach is then shown to be able to develop the advantages of Construction Grammar, as it allows lower-level constructions to capture semantic features with detail. Constructions at the lower-level schema then indicate semantic features and compatibility with word semantics. However, it is not clear what degree of low schematicity can be captured validly as individual constructions. Previous studies focus on analyzing the behavior of verbs and demonstrate the interaction between construction and verbs. In addition to the merits of the lexical-constructional approach, I suggest that nouns associated with lower-level constructions can play a role in determining the whole semantics of constructions. Moreover, the possibility of extending the scope for analyzing psychological constructions in terms of extension from central constructions to metaphorical ones in Construction Grammar is demonstrated.

Thus, two issues will be proposed from a lexical-constructional account: the semantic interplay of verbs and nouns at the lower level of schematicity, and their varying levels of schematicity corresponding to the features of constructions. The organization of constructions requires cross-relations between lower-level and higher-schematic levels in order to capture the nature of constructions. It is clearly predictable that lower-level constructions denoted by verbs and nouns exhibit some semantic relations to the general features of individual constructions. Likewise, in the case of metaphorical constructions, instances are motivated by the general semantic property of the whole constructions. Thus, it is expected that psychological constructions can be accounted for by analyzing concrete occurrences with words and interactions with abstract constructions. We will turn to the specification of psychological verbs and emotion concepts in the next chapter in order to examine the different dimensions of psychological constructions.



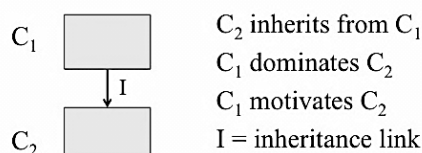
## Notes for Chapter 2

<sup>1</sup> Categorization is a cognitive process that results in the making of schemas and instances. In cognitive approaches, categorization plays an important role in abstracting over a construction schema or a group of words to some extent. (See more details in Langacker 2008)

<sup>2</sup> The usage-based approach varies depending on the researcher's attitude. In fact, Goldberg (1995) follows a usage-based account for lexical idiosyncrasy. She suggests that exceptions are possible to learn and store idiomatically on a case-by-case basis. She discusses the frequency effect in language acquisition. After all, corpora are available to gauge frequency, and a valid discussion is emerging from this (e.g., Bybee 2010). On the other hand, Iwata (2008) examines corpora data overlooked by linguistics and represents the number of occurrences of particular expressions.

<sup>3</sup> The process of schematization and extension can be connected with the “inheritance link,” proposed by Goldberg (1995). The inheritance link is a motivation to capture the relation between two constructions. There are four types of inheritance links: polysemy links, metaphorical extension links, subpart links, and instance links. Goldberg defines and represents the general property of the inheritance link below:

An inheritance relation between two constructions  $C_1$  and  $C_2$  such that  $C_2$  inherits from  $C_1$  will be represented as follows:



(Goldberg 1995: 73)

<sup>4</sup> The Verb Island hypothesis is based on observation of young children’s utterances and was proposed by Tomasello (1992). It suggests that each verb constitutes a construction unit—a “verb island”—and that children learn the use of individual constructions involved with a particular verb. Children acquire verbs in a single argument structure construction and in turn learn the other use of constructions gradually. This hypothesis corresponds with the organization of constructions with usage-based views.

<sup>5</sup> Boas (2003) also argues for the lower-level constructions, suggesting the idea of “mini-constructions.” Boas views mini-constructions as representations of each particular verb’s event-frame, including its semantic/pragmatic and syntactic specification (Boas 2003: 315). In addition, Croft (2012) views them as equal to verb-specific constructions.

## **Chapter 3**

### **Semantics of Psychological Predicates and Emotion Concepts**

#### **3.1 Introduction**

This chapter reviews previous studies focusing on psych-verbs and emotion concepts, to consider how the psychological constructions examined in this thesis confirm the dimensions of a psychological event and of emotion concepts. First, I clarify the special characteristics of psych-verbs in order to determine the features of psychological constructions; in particular, I show that psychological constructions represent similar semantics to causative psychological verbs, since the same semantic roles appear in these constructions as in the verbs. Then, on the basis of previous studies in lexical semantics (Jackendoff 1990, Hatori 1997), I describe the locative relations of causative psychological events, since psychological constructions extend from constructions expressing motion events. This locative character overlaps with the event structure in terms of the role of metaphor.

Second, with reference to the insights of cognitive semantics, I show that causative psychological verbs and psychological constructions contain an emotion scenario structure (Kövecses 1990, 2000), and that relevant semantic elements for this scenario are mentioned in the psychological event structure (FrameNet). These are, in fact, crucial elements: the onset, duration, and degree of intensity of emotion, each of which plays a role in specifying the cause of an emotion event. These elements are connected with the semantic features capturing the psychological constructions.

#### **3.2 Psych-Verbs**

In this section, I give an overview of psychological verbs and constructions as a phenomenon, based on the relation between Experiencer and Stimulus that they convey.

Mental experiences are described mainly through two ways of understanding the mental entity and its cause, with a focus on examples from English. Although a psychological event is just another way of saying “someone’s feeling of something,” linguistic forms vary according to the nature of the conceptual structure(s) of the psychological event(s) they express. The Experiencer of a mental entity appears in the position of the Subject or Object of a sentence; in addition, the argument structure constructions used to describe an actual transfer or motion are involved in the Experiencer’s mapping of some argument. From this perspective, I introduce the semantic commonalities between causative psych-verbs and psychological constructions.

### 3.2.1 Two Classes of Psych-Verbs

There are two types of psych-verbs, which differ with the position of the Experiencer, who appears in either Subject or Object position in a sentence using psych-verbs. The Experiencer here is defined a mental entity, and generally one semantic role in argument roles to capture the grammatical behaviors of various psychological expressions. In Pesetsky (1995), one of these two verb classes is called the *Experiencer Object* (EO) verb class, as in (1), while the other is called the *Experiencer Subject* (ES) class, as in (2).

- (1)     a. The thunder frightened Bill.  
          b. The gift pleased Mary.
- (2)     a. Bill fears the thunder.  
          b. Mary likes apples.

The non-Experiencer argument in both (1) and (2) is called the cause or stimulus; it plays the role of the entity that causes an emotion in a person’s mind. There are two critical differences between EO and ES verbs with regard to their distinctive semantics. First, EO verbs have causative meanings (Grimshaw 1990; Croft 1993; Pesetsky 1995, among others): the Subject functions as a stimulus, causing the Experiencer to feel something, as in (3a), where it indicates an animate thing, or in (3b), where the Subject functions as an agent, as shown by the co-occurring modifier *on purpose*. We can paraphrase the usage of

*terrify* in (4a) with an analytic causative verb, *cause*, as in (4b). In what follows, I refer to the types of EO verbs used in (3) as causative psych-verbs (cf. Grimshaw 1990).

- (3) a. The thunderbolt frightened the children. (Bando and Matsumura 2001:74)  
b. John frightened his children on purpose. (Bando and Matsumura 2001:74)
- (4) a. The tornado terrified us.  
b. The tornado caused us to experience terror.

Causative psych-verbs are classified on the basis of stativity of emotion. In one verb class, some causative psych-verbs, like *frighten*, behave strictly as non-stative verbs, in that they can also occur as progressives, as in (5a). ES verbs can also appear in progressive tenses, like in (5b), while other causative psych-verbs cannot occur in the progressive because its state. Thus, there is a distinction among causative psych-verbs with respect to stativity, in which the emotion that the verb denotes differs with aspectual character.

- (5) a. The storm was frightening us. (Grimshaw 1990: 23)  
b. \*We were fearing the storm. (Grimshaw 1990: 23)
- (6) a. \*The weather was pleasing us. (Grimshaw 1990:29)  
b. \*The news was concerning us. (Grimshaw 1990:29)

On another point, Landau (2010) makes observations based on Pesetsky's (1995) work pointing out that while stative verbs fail the pseudo-cleft test, causative psych-verbs, such as *scare*, can pass, as shown in (7).

- (7) a. What that noise did was {scare/surprise/startle} Mary. (Landau 2010: 50)  
b. \*What the situation did was {depress/concern/interest} Mary.

(adapted from Landau 2010: 50)

The contrast in (7) displays the degrees of activeness or eventivity denoted by psych-verbs. As the discussion above shows, causative psych-verbs are not identical in terms of their aspectual dimensions. This phenomenon suggests that emotions as expressed in

language are composed of several semantic elements that determine the distribution of the constructions they employ.

Differences in stativity appear between various kinds of psychological events, although causative psychological event structures specifically show a uniform causal structure. In terms of the time concepts of their emotion dimensions, it is predicted that the psychological constructions would differ in the same way.

### 3.2.2 The Experiencer and Mental Location in Causative Psych-Verbs

The Experiencer can appear as an oblique or direct Object of other expressions than transitive verb forms. Importantly, the different ways of understanding an Experiencer in a mental event are similar to the ways of understanding a locational relation. This is because Experiencers are moving Objects or locations in an abstract conceptual domain, as in (8) and (9). This locative character of the Experiencer is related to the construal of a mental state.

(8) a. When we were out of town, he terrified me, absolutely put the fear of God *into me*.

b. When the War Altar charges into combat (and only when it charges) the sounding of the Horn strikes terror *into the charged enemy unit*.

(both from BNC)

(9) a. They didn't have visitors because it sent *him* into a fury.

b. The Belgian William van Dijck sent *the large crowd* into ecstasy with a new national record in the steeplechase.

(both from BNC)

Interestingly, all the sentences in (8) and (9) can be interpreted as having semantic structures similar to those of causative psych-verbs, that is, involving X causing Y to experience an emotion. The semantic structure of causative psych-verbs is regarded as representing a locative relation in an abstract domain. The spatial location and motion are respectively conceptually understood as a psychological state and a change of state in the

human mind.<sup>1</sup> The concept of the psychological event is accounted for by assuming the lexical conceptual template of a verb (cf. Jackendoff 1990; Levin and Rappaport Hovav 1995). For example, Hatori (1997) takes up the lexical representation of *drive* as an example that either a location or a psychological change of state has the same representation. The prepositional phrase *to the station* in (10a) can be mapped as a path in a lexical representation, where the adjective *mad* in (10b) can be treated as a spatial directional expression.

- (10) a. John drove his mother *to the station*.  
 b. John drove his mother *mad*.  
 c. drive [Event CAUSE([Thing ], [GO ([Thing ], [Path TO ([Place ])]))]]

(Hatori 1997: 15)

Hatori (1997) reveals a conceptual parallel between psychological events and motion events, adopting Jackendoff's (1990) manner of lexical representation. Along this view, the conceptual structure of EO verbs can be linked to spatial relations systematically. Importantly, the sentence in (10b) can be shared between change-of-location and change-of-state event structures. The Experiencer in (10b), *his mother*, is regarded in (10c) as the theme of an abstract motion. From this point of view, Jackendoff (1990) extends a lexical representation of the psych-verb *frighten* from the basic locative relation to the abstract domain, as in (11).

- (11) a. X frightens Y  
 b. [CS+ ([X]  $\alpha$ , [INCH[BE([FEAR([  $\alpha$  )], [AT[Y]])]])]

(Jackendoff 1990: 300, n. 4)

Jackendoff (1990) indicates the semantic representation in (11) to express the paraphrase "X causes fear to come to be in Y." FEAR in (11b), indicating a mental state, is regarded as a thematic argument. This paraphrase implies the locational property of the Experiencer, since fear is described as a moving Object and Y as a container for the

emotion. Bouchard (1995) proposes further that a psychological event is captured as a common semantic structure denoted by a physical event, like motion, and that a psych-verb paraphrases an analytic psychological construction, such as “X put Y in FRIGHT.” Analysis of the lexical conceptual structure of cases like this largely suggests that semantic structures are captured as specific psychological constructions.

With respect to the Subject, the semantics of psychological constructions are similar to the general semantics of EO verbs. The features of semantic structures shared between EO verbs and psychological constructions can be clearly described, and psychological constructions express conceptual semantics with EO verbs. The Subject of both examples in (12) functions as a Stimulus. In a given context, the Agent is encoded as the Subject, as in the case of (12), since we can interpret that *the strange man* affected *people* with his volition. In addition, the animacy feature is involved with encoding the Subject as Agent. The determination of the semantic role of the Subject in (13a-b) depends on the contextual elements of the volitional and animate entity.

- (12) a. The strange man struck fear into people.
- b. The strange man scared people.
- (13) a. The manager instilled confidence into his team (on purpose).
- b. The manager encouraged his team (on purpose).

Thus, psychological constructions are similar to EO verbs in terms of semantic structure. EO verbs are decomposed into their spatial elements, such as a mental locational relation, whereas it is natural to understand the semantic structure of a psychological event, because English psychological expressions are interpreted on the basis of motion expressions. Thus, while these lexical-semantic decompositions of psych-verbs are not motivated by the semantic elements of practical psychological constructions, they nevertheless provide a significant view of psychological constructions: the psychological events must be linked to the emotional dimensions shared between causative psych-verbs and psychological constructions. In what follows, I take up the relevant dimensions of specific psychological events and emotions as a preliminary to the following discussion



of psychological constructions.

### 3.3 Cognitive Dimensions of Emotions

This section considers a cognitive scenario comprised completely of emotion metaphors, and focuses on the relevant subparts of the emotion elements, which are shared by the event structure as a whole. Then, the conformity with Frame Semantics is associated with the semantics of psychological constructions. I argue that significant semantic elements make up a causal psychological structure, as well as causative psych-verbs and EO verbs.

#### 3.3.1 Event Structure of Emotions and the Cognitive Scenario

We turn next to the event structure of emotions, appealing to the notion of emotion metaphors. The parallel between physical and psychological events reveals one kind of conceptual mapping in this regard. Lakoff (1990) proposes the event structure metaphor, which characterizes changes of actions, activities, and states as physical movements, forces, and spaces, respectively.

- (14) a. States are bounded regions in space.  
b. Changes are movements into or out of bounded regions.  
c. Causes are forces.

(Lakoff 1990: 57)

In the event structure metaphor, emotion metaphors coincide with states, and the mapping between them coincides with a change of location. These mapping relations, shown below, are sub-metaphors that correspond to the emotion domain.

All of the metaphors in (14) are likely to be applicable to the expression of psychological constructions to some extent. “Psychological constructions” here are regarded as a metaphorical extension of argument constructions including caused-motion constructions and ditransitive constructions (see Chapters 1–2).

Basically, in this context, constructions present a specific event structure metaphor. Kövecses (2000) points out that sub-metaphors of the event structure metaphor, as in (14), overlap with emotion concepts. In the same way as in (14), the conceptual metaphorical mappings of emotions are shown in (15).

- (15) a. EMOTIONAL STATES ARE BOUNDED REGIONS (Kövecses 2000: 59)  
b. A CAUSED CHANGE OF STATE (EMOTION) IS MOTION CAUSED BY FORCE (Kövecses 2000: 59)  
c. EMOTIONS ARE PHYSICAL FORCE (Kövecses 2000: 58)

Kövecses (1990, 2000) also proposes a cognitive model based on the prototypical emotional scenario. This scenario model is composed of five stages, as shown in (16).

- (16) Cause → Emotion → Control → Loss of Control → Behavioral Response  
(Kövecses 2000: 58)

The second stage here, “Emotion,” is associated with the sub-metaphors in (15a-c). Of the subparts of the emotion scenario in (16), “Cause” and “Emotion” seem to be associated with the causal structure encoded by a verb. That is, these stages involve a change of state with respect to a causative psych-verb, induced by a “Cause.” As reflected in (16), the onset of emotion embodies the stages of “Cause” and “Emotion” , while the stages from “Emotion” to “Behavioral Response” are connected to subsequent emotional behavior or expression. In other words, the Experiencer is psychologically affected, and may then express the emotion and/or take some action because of it. Naturally then, these first two stages of “Cause” and “Emotion” respectively represent causative psych-verbs and psychological constructions, and thus, the participants are specified by the context within which the emotion functions as a cause. The cause of the emotion, then, corresponds with the Experiencer and the Stimulus, while the loss of control and the subsequent action correspond to the Actor or Agent. The properties of a mental Subject vary based on its part in the scenario; this difference between participants appears in the following expressions in (17).

- (17) a. Tom unleashed his anger. (Tom = Actor, or Expressor)  
b. Tom feels anger. (Tom = Experiencer)  
c. The anger overwhelmed Tom. (Tom = Experiencer)

In (17), the expressions describe an event that takes place within an emotion scenario specified as “anger.” The scenarios feature participants that play multiple roles as Experiencer(s) and Actor(s) of the emotions. The Subject of (17a) may also function as the Expressor of the emotion, depending on the situation (for example, if the Subject cries and takes an action of speech or distraction through his words).

Here is another cognitive approach that attempts to capture the linguistic phenomena that convey psychological events and emotion concepts. In the emotion scenario, specific participants are represented in the parts of the emotion scenario. In order to capture the event that a psychological construction designates, including the cognitive scenario, I will adopt the basic perspective of Frame Semantics, a cognitive framework for lexical-semantic descriptions in relation to scenes, as laid out by Fillmore (1982). Along these lines, the notion of a frame brings us to examine the meanings of words occurring within the psychological constructions:

[...] frame semantics is based on the idea that word meanings are organized around schematic conceptual scenarios, or *frames*, that underline the use and interpretation of the lexical items and their general complementation and modification properties. (Fillmore, Johnson, and Petruck 2003: 241)

The basic idea of Frame Semantics is that word meanings must be identified through background knowledge. A frame incorporates interrelated lexical items and frame elements dependent on them. Fillmore, Johnson, and Petruck (2003) present the examples of the transfer frame, which involves semantically related verbs that profile different participants and contains three frame elements: Donor, Theme, and Recipient. Construction Grammar shares the view of Frame Semantics in this regard, because constructions are based on human experience (Goldberg 1995: 31).

We can then see that the emotion frame conforms to the emotion scenario, according to the FrameNet database (a lexicographic resource of “information about the linked semantic and syntactic properties of English words from large electronic text corpora” (Fillmore, Johnson and Petruck 2003: 235)). The emotion frame is described as follows:

- (18) a. Frame: Emotion
- b. Core Frame Element:  
{Event, Experiencer, Expressor, State}, {Stimulus, Topic}
- c. Definition: An Experiencer has a particular emotional State, which may be described in terms of a specific Stimulus that provokes it, or a Topic which categorizes the kind of Stimulus. Rather than expressing the Experiencer directly, it may (metonymically) have in its place a particular Event (with participants who are Experiencers of the emotion) or an Expressor (a body-part of gesture which would give an indication of the Experiencer's state to an external observer).

(FrameNet n.d.)

The frame elements are presented in relation to the linguistic expressions. In the definition in (18), the emotion frame describes a situation containing the onset of the emotion and the resulting psychological event, which happens as part of the same cognitive scenario. The emotion frame may be understood more as a schematic scene than a cognitive scenario. That is, it seems to present two main subparts of the psychological event: the semantic descriptions that capture the features of emotions, and the relevant metaphorical or metonymical expressions they are based on.

The following table shows concepts that overlap with both the emotions frame in FrameNet and the prototypical emotion scenario in Kövecses (2000). Table 3.1 illustrates the shared and distinctive points of the two.

Table 3.1. The conformity of the emotion event.

	State 1	Stage 2	Stage 3	Stage 4	Stage 5
Emotion Scenario	Cause of Emotion	Emotion	Control	Loss of Control	Behavioral Response
Emotions Frame	Event State Stimulus	Event State Experiencer	Event State Expressor	-----	-----

As shown in Table 3.1, the first stage represents the cause of the emotion encoded by the psych-verb. The emotion frame does not mention the middle part of the emotion scenario, and seems instead to describe the participants or semantic roles. The emotion scenario focuses on the change in the mental entity defined as the Experiencer or Expressor. In this thesis, I adopt both views of emotion concepts to indicate the role of emotion nouns and verbs in psychological constructions. The emotion scenario view gives us a new perspective on psychological events. Further, frame elements of the emotion frame help us to handle the specific semantics of the psychological constructions.

The significant point here is that the emotion frame includes non-core frame elements, such as manner, which are related to the emotion frame but not necessarily to the constituents of the sentence. As for causative psych-verbs, the non-core frame element is related to their syntactic behavior. More explicitly, the following elements seem to be associated with verbs and emotion nouns occurring in the psychological constructions.

- (19) a. Degree: The extent to which the Experiencer's emotion deviates from the norm for the emotion.
- b. Manner: Any description of the way in which the Experiencer experiences the Stimulus which is not covered by more specific FEs, including secondary effects (quietly, loudly), and general descriptions comparing events (the same way). Manner may also describe a state of the Experiencer that affects the details of the emotional experience.

(FrameNet n.d.)

The cause of the emotion in the scenario can be described by a frame element, either manner or degree. In the context of the definition of manner in (19), the details of psychological events are specified the onset of emotion and its duration. For example, Manner can denote a dynamic sense, such as the sudden or gradual and incremental onset of emotion. In terms of degree as defined in (19), emotion nouns vary with degree of intensity.

The semantic elements related to the cause are regarded as a manner of emotion and degree. In fact, fine-grained semantics are needed to adequately account for the descriptions and representations of psychological constructions based on Construction Grammar. Thus, in this thesis, the notion of the frame element is presumed to be applicable when analyzing words and lexical constructions. In what follows, I outline the role of three psychological dimensions in the behavior of causative psych-verbs and emotion nouns: duration, onset of emotion, and intensity.<sup>2</sup> The former two express facets of manner, while intensity expresses the degree of emotion, as described by FrameNet.

### **3.3.2 Duration: An Aspectual Dimension**

As mentioned in Section 3.2, causative psych-verbs are classified in terms of their stativity. In this light, duration implies the aspectual property of emotions: some verbs imply an instantaneous event or concept, while other verbs do not imply a time concept strictly. That is, duration is the dimension allowing the specification of the extent of the

emotional state. The behavior of psych-verbs depends on two aspectual dimensions connected to the manner of the emotion. The differences between (20) and (21) reflect the duration of the psychological state of the Experiencer. In (20a), the verb *depress* is not compatible with the meaning of iterated action as in (20a), and it is less acceptable in the “punctual use” with the simple past tense, as in (20b). Conversely, a verb like *scare* is acceptable in either the progressive or the punctual past tense.

- (20) a. ??Odd noises were continually depressing Sue.  
 b. ??Bill was sitting around happy as a lark, when an unexpected groan from the next room suddenly depressed him.

(Pesetsky 1995: 29)

- (21) a. Odd noises were continually scaring Sue.  
 b. Bill was sitting around calm as could be, when he was suddenly scared by an unexpected groan from the next room.

(Pesetsky 1995: 30)

In addition, duration also differs between emotion nouns, as seen in the contrast in (22). Some, such as *surprise*, *startle*, and *fright*, denote a punctual duration, and cannot be modified by *long*, as illustrated in (22a). In contrast, emotion nouns that can continue over a period of time can be used in the *long*-phrase in (22b). In fact, the basic category emotion concept cannot strictly be designated with regard to duration, although punctual emotion nouns like *surprise* and *startle* are identified with a limited range of use.

- (22) a. \*long {surprise/startle/fright}  
 b. long {fear/happiness/anger}

Thus, duration is closely related to emotion concepts, since it is one element of stativity within a psychological event: duration of emotion nouns is not determined only by lexical information but also by compatibility with modifiers like *long* and *temporary*.

In addition, duration of emotional state is related to the continuity and quickness of

the psychological event. Quick transition of emotion is closely tied to a short duration, and the continuous transition of emotion to a long duration. This reflects the complicated nature of the time concept, in which elements apart from word meanings play a role in determining the final duration of the constructions. On the other hand, another dimension, onset of emotion, is also associated with duration, given that the nouns shown in (22a) imply the sudden onset of emotion.

For their part, the psychological constructions will interact with duration, because verb meanings can designate a quick and continuous manner of action and affect emotion nouns by collocating with a verb.

### 3.3.3 Onset of Emotion

There are two manners in which emotions can be caused: suddenly or gradually. Pustejovsky (1995) points out the aspectual distinctions of psychological events produced by the onset of emotion. Although the same Subject noun phrase appears in (23), each event varies from verb to verb. In (23a), the whole sentence denotes an instantaneous property in the momentary visual perception of the Subject, whereas in (23b), the interpretation of the relationship between the Subject and the Object is different, because the experiencing event is related to a controlled and intentional activity.

- (23) a. The sign startled Mary. (Pustejovsky 1995: 212)  
b. The sign angered Mary. (Pustejovsky 1995: 212)

Thus, the onset of emotion is associated with the manner of perception in each psychological event. *Startle*, as in (23a), is an instantaneous bounded process event, while *anger* in (23b) is best interpreted as reflecting the Subject's cognitive access to *the sign*, rather than just a visual perception. In this sense, different kinds of emotion influence the interpretation of duration. Pustejovsky (1995) suggests that the aspectual interpretations of causative psych-verbs are specific to different ways of experiencing an Object.

Naturally, the instantaneous property of *startle* is compatible with the sudden onset of the emotion. The onset of emotion refers to how the agent or cause acts on the



Experiencer—either suddenly or gradually—and the interpretation of the whole sentence is influenced by the onset of emotion with regard to temporality.

Let us observe the role of the onset of emotion in (20a) and (21b), repeated in (24a) and (24b). The sudden onset encoded by *scare* is closely related to the acceptability of the sentence in (24a). On the other hand, *depress*, as in (24b), does not entail the sudden onset of emotion as a semantic feature. Psych-verbs designate the type of onset of emotion, as shown in (24).

- (24) a. Bill was sitting around calm as could be, when an unexpected groan from the next room suddenly scared him. (Pesetsky 1995: 30)
- b. ??Bill was sitting around happy as a lark, when an unexpected groan from the next room suddenly depressed him. (Pesetsky 1995: 29)

Moreover, psychological constructions such as (25) differ in terms of the basic sense of the co-occurring verb. Lakoff (1990) suggests that *bring*, in (25a), inherits continuous action, and that *send*, in (25b), indicates the onset of action, based on the literal sense of each verb. Interpretation of the constructions varies with the basic motion denoted by the verb. In fact, *bring*, as in (25a), has the manner of a continuous emotion, which lasts until the experience of it is complete, while *send* has the manner of a propulsive onset of emotion (Lakoff 1990: 62). Thus, literal verb meanings are closely mapped to the onset of emotion in an abstract domain, as in (25b).

- (25) a. The home run brought the crowd to its feet. (Lakoff 1990: 62)
- b. The home run sent the crowd into a frenzy. (Lakoff 1990: 62)

In metaphorical instances, the verb meaning characterizes different kinds of emotional onsets, and can limit the expression of emotion. Suddenness, for example, tends not to be associated with emotions such as depression in isolation (see (24)), although modifiers like *suddenly* and *gradually* can designate such an onset. In the following chapters, I will

confirm how a verb's meaning play a role in specifying the onset of emotions.

### 3.3.4 Degree of Intensity

Emotion concepts vary in degrees of intensity, which can be different within emotion categories. Degrees of intensity can be expressed with emotion nouns encoded with intensity. Let us now turn to the difference between *fear* and *terror*.

- (26) a. He was struggling with his fear. (Kövecses 1990: 80)  
b. ?He was struggling with his terror. (Kövecses 1990: 80)

The sentences in (26) show two words with different lexical meanings, although *fear* and *terror* do share an emotional category. However, as Kövecses (1990) observes, a state of *terror* is characterized by an inability to move and think effectively—that is, their intensity differs, although they are in the same category.

Likewise, *panic* (noun) lexically entails a considerable degree or intensity of emotion. In fact, *panic* is defined as “a sudden strong feeling of fear or nervousness that makes you unable to think clearly or behave sensibly” (LDOCE). We can see the difference in intensity between *happiness* and *panic* in (27): The sentence with *panic* is less natural than the sentence with *happiness*, since intensity is concerned with lack of control: a state of intense enough emotion may resemble one of madness.<sup>3</sup> The difference of controllability against intense emotions is found as in (27).

- (27) a. I can keep calm in a state of happiness.  
b. ??I can keep calm in a panic.

Some emotion nouns, such as *panic*, lexically include the degree of intensity in isolation, while others, such as *happiness*, do not, and instead have recourse, to express those degrees, either to separate lexical items (for example, *ecstasy* is defined as a “feeling of extreme happiness” (LDOCE)) or to adjectives like *strong* or *intense*, such as *strong happiness*, *strong fear*, or *intense sadness*. Thus, although intensity is but one significant

compositional element of emotions, it influences the distribution of emotion nouns and the behavior of sentences. Thus, intensity is relevant when considering with psychological constructions although it is an ambiguous manifestation of emotion concepts.

### **3.4 Conclusion**

In this chapter, I have reviewed the details of the semantics of psych-verbs and cognitive semantic views of emotions. First, I outlined two types of psych-verbs, the ES verb class and the EO verb class, which are construed differently by those who experience them. Then, I showed that psychological constructions have the same semantic structure as EO verbs, based in common on mental locational relations. Psychological constructions here are basically defined as metaphorical argument constructions extended to abstract motion. Moreover, it is clear that specific elements of emotions influence the behavior of psychological expressions. Both cognitive emotion scenarios and Frame Semantics perspectives can describe a psychological event; both serve to provide a more detailed analysis of word meanings and constructional semantics. Based on these notions, in this section I review three semantic elements discussed in this chapter: duration, onset of emotion, and degree of intensity.

With regard to psychological constructions, verbs and emotion nouns specify these semantic elements lexically; the constructions can then play the role of semantically fusing elements that are compatible with the lexical meanings of the verbs and the emotions nouns. Considering duration first, it interacts with emotion nouns and verbs in several ways. Instantaneous emotion nouns are restricted in duration, whereas general emotion nouns are compatible with various usages. On the other hand, quickness and continuity of verb meaning affects the duration of the whole meaning of a psychological construction. Second, the onset of emotions can be specified by the meaning of the verb or by that of an emotion noun, which can intrinsically contain a meaning of suddenness or gradualness. Third, intensity is relevant to the semantics of verbs, emotion nouns, and constructions. The character of an emotion interacts with some important semantic elements in psychological events; then, the specific or individual nature of the emotion

(given discussions in metaphor theory that suggest that each emotion expresses specific behavior) is combined with the construction.

In the following chapters, I analyze the semantic features of psychological constructions in terms of the essential elements of those constructions as gone over here. In a lexical-constructional account, the roles of verbs, emotion nouns, and psychological constructions as a whole are correlated with the semantic elements of duration, onset of emotion, and degree of intensity.

### Notes to Chapter 3

<sup>1</sup> Of the two main analyses of Experiencers, Jackendoff (1990) treats them as locations, while Hatori (1997) suggests that there are two types of EO verbs, the Experiencer-as-location type and the Experiencer-as-theme type, based on evidence that they may occur as expressions of the path of a motion.

<sup>2</sup> Pesetsky (1995) points out that emotions such as surprise, annoyance, and amusement are like the weather: unpredictable in their onset, intensity, and duration. This view of emotional concepts has been thought-provoking for the present study.

<sup>3</sup> Controllability is generally regarded as one different semantic feature from intensity in the literature. Previous studies suggest that the Subject is characterized by responsibility for the event in terms of causation. For more details on controllability, see Miki (2001).

## Chapter 4

### A Study of the Psychological Caused-Motion Constructions: With Special Reference to the Role of Verb Meanings<sup>1</sup>

#### 4.1 Introduction

The lexical constructional account proposes that lower-level constructions such as verb-specific constructions handle more semantic details and subcategorization properties than general constructions (cf. Iwata 2008). Adopting this base assumption, I utilize lower-level constructions to illustrate the specific features of psychological constructions. Caused-motion constructions can be extended to various usages, including psychological usages. This chapter investigates one specific case of the psychological caused-motion construction. The following sentences in (1) are examples of psychological caused-motion constructions.<sup>2</sup>

- (1) a. The man *struck fear into* the enemy.  
b. The bad accident *struck terror into* the heart of the enemy.

In (1), the Object, *fear*, is metaphorically expressed as a moving Object. The directional phrase *into* represents a goal, i.e., a person or his/her heart.<sup>3</sup> These prepositional phrases are regarded as Experiencers because they express psychological Subjects. In Construction Grammar, metaphorical extension is associated with these constructions, as shown in Chapter 2. A specific metaphor licenses the extension of these constructions and plays a role in motivating a link with basic constructions. The psychological interpretation of the constructions is specified by the metaphor “Motion as Change” (cf. Goldberg 1995, Lakoff and Johnson 1999). Thus, caused-motion constructions are associated with the concept of locational relations, presenting the Experiencer as the location. This is referred to as the Oblique Experiencer construction (cf. Landau 2010).

In this chapter, I will shed light on issues such as how verb meaning is associated with the overall meaning and what types of verbs can occur in these constructions. By examining idiosyncratic constructions, this chapter shows that verbs can induce extensive usages within similar verbs. For example, *strike* occurs in each example and the form *strike fear/terror into NP* is captured as an idiomatic expression. The expressions in (1) are found as idiomatic usages of *strike* in dictionaries (see LDOCE, OALD, and *Oxford Dictionary of English*). In-depth examination of psychological caused-motion constructions is possible from the perspective of constructions directly denoted by particular words. This will allow us to identify the specific features of psychological caused-motion constructions in terms of lower-level constructions. The lower-level constructions allow the study to provide more specific and detailed levels that are associated with specific verbs and nouns.

This chapter is organized as follows. Section 4.2 outlines and overviews the relevant lexical-constructional analysis. Section 4.3 examines the distinctive features of psychological caused-motion constructions in terms of their preferences with *hit* verbs. It also examines the semantic features of the psychological caused-motion construction [V *fear into NP*] with respect to the semantic compatibility between verb meanings and conventionalized examples such as *strike*. In particular, the psychological semantic elements play a role in specifying the details of the constructions, as mentioned in Chapter 3. Section 4.4 discusses their semantic features on the basis of distributional data from the BNC (British National Corpus) and COCA (the Corpus of Contemporary American English) and analyzes the categorization of the construction on the basis of verb meanings, which suggests the network of verbs occurring with [V [FEAR] into NP]. Section 4.5 discusses how [V [FEAR] into NP] constructions work with subcategorization in the organization of the constructions and proposes *noun-specific constructions*, which are combinations involving particular nouns. Finally, Section 4.6 concludes the analysis.

## 4.2 Background of This Study

Before examining the usage of verbs in these constructions, I overview Boas's

observation (2003) because it proposes a lexical-constructional account for unconventional verb usages in the caused-motion construction. My discussion in this chapter should be applicable to his suggestions about verb meanings and constructions.

Boas (2003) suggests that the possibility of a verb's occurrence in a caused-motion construction is associated with fine-grained semantic elements of verbs corresponding to the syntactic frame of the source verb. He demonstrates how non-conventional usages are associated with novel syntactic frames and meanings. *Sneeze* in (4) is not recognized as a conventional pattern for caused-motion constructions. Boas (2003) proposes that the intransitive verb *sneeze* can occur in caused-motion constructions because it encodes the same semantic/pragmatic relationship as *blow* in caused-motion constructions. When the situational (or pragmatic) conditions of *sneeze* overlap with the situational conditions of *blow*, the syntactic frame of the caused-motion constructions is available with non-conventional usages of *sneeze* as well. According to Boas's discussion, the use of *sneeze* is motivated by that of a prototypical air emission verb, *blow*, in terms of its meaning and syntactic frame, the [NP V NP XP] pattern. The license for (4) is thus related to the overlap of the conventionalized event semantics of *blow* and *sneeze*. The usage of *sneeze* can result from analogical extension from the conventional usage of *blow*, as illustrated in (2), where *blow*'s conventional [NP V NP PP] frame is associated with *sneeze*. In both the sneezing event in (2a) and the blowing event in (2b), the agent produces an airstream. Both these events indicate a strong airflow from the agent moving the Object to a specific direction.

- (2) a. Mary sneezed the napkin off the table. (Boas 2003:272)  
b. Lars blew the napkin off the table. (Boas 2003: 272)
- (3) a. Marc coughed the napkin off the table. (Boas 2003: 272)  
b. ??Julio wheezed the napkin off the table. (Boas 2003: 273)  
c. ?Jen panted the napkin off the table. (Boas 2003: 273)

Other air emission verbs can be compatible with the conventional syntactic frame of *blow*. For example, *blow* and *cough* are categorized as air emission verbs; the conventional



frame of *blow* can motivate the usage of *cough* in a non-conventionalized construction, as in (3a). Boas suggests that the intensity of the force dynamics relationship associated with the event frames the semantic information. The difference in acceptability of examples (3) stems from the intensity of the airflow encoded by the verb meanings; *wheeze* and *pant* (3b and c) are less acceptable because of their differences in semantic/pragmatic elements from *blow*: Neither verb encodes a very strong air emission; therefore, the caused-motion pattern of *blow* cannot be expressed lexically by *wheeze* or *pant*. Thus, individual verb semantics are strongly correlated to the extended usage of other verbs as the central and source verb.

Next, Boas suggests another limitation on the pragmatic factors, as illustrated in the following examples:

- (4) a. Lars blew {?the book/\*the beer} off the table. (Boas 2003: 271)  
 b. Rachel sneezed {?the book/\*the beer} off the table. (Boas 2003: 271)

In (4), *blow* and *sneeze* show the same restriction. The pragmatic range of the Object is limited by the same contextual factor. Thus, these examples show the relationship between force dynamics information and specific contextual or pragmatic knowledge. *Sneeze* can thus be associated with a range of contexts for *blow*'s [NP V NP XP] frame, whose XP can contain particles or prepositional phrases.

In addition, Boas (2003) observes another interesting comparison by examining different verbs' behaviors. Other air emission verbs are not associated with the air emission flow encoded by *blow*. Comparing (5) and (6), the Objects in caused-motion constructions differ in whether they are moving entities. Boas then noticed that *inhale* and *exhale* denote different types of event frames for air emission, and this difference blocks the association with *blow*. In (6c), the Objects are the gasses out of the bodies or lungs, rather than Objects moved by the force of the air emission.

- (5) a. Katie blew. (Boas 2003: 275)  
 b. \*Katie blew the napkin. (Boas 2003: 275)

- (6) a. Katie exhaled {the air/ \*the napkin}. (Boas 2003: 275)  
b. \*Katie exhaled the napkin off the table. (Boas 2003: 275)  
c. Katie exhaled the smoke into his face. (Boas 2003: 276)

The possible motivation for *sneeze* occurring in caused-motion constructions follows the principle for the coinage of new words (Boas 2003, cf. Kay 2013). Word meanings can be combined with a syntactic frame through analogy. Such analogical extensions are subject to specific syntactic frames or semantic elements of the constructions. Thus, an analogy is drawn based on the overlap between a selected verbal usage and a similarity, as determined by semantic elements of source expressions. The role of lexical meaning should be associated with this extended usage. As per Boas's analysis (2003), a pattern of analogical association can license such extended usage. Thus, the compatibility of verbs with constructions depends on whether the target verb meanings and discourse semantics overlap, and the analogical extension from the source verb's frame is possible given appropriate conditions of the target verb meaning and its usage.

This study focuses on the role of the meaning of verbs that appear in constructions, adopting the assumptions of Boas (2003). Verbs can denote common semantic elements such as lexically specified manners of action. Such related verbs show similar event types, which overlap with the specific event semantics of the caused-motion constructions. I will follow Boas's basic approach (2003) for defining verb meanings in relation to construction grammar. Previous constructional analyses have not sufficiently targeted verb meanings of abstract motion events such as *strike fear/terror into NP*. I will propose that the constructional approach is also applicable to abstract event structures, such as fundamental metaphorical extensions with respect to the fine-grained semantics of verbs and lower-level constructions. Thus, I predict that the psychological use of caused-motion constructions can be handled in the same manner.

### 4.3 Semantic Features of *Strike* Compatible with the Psychological Caused-Motion Constructions

This section explores the semantic features of *strike fear/terror into NP*. First, I outline how *strike* assumes the central role of the constructions. The meaning of *strike* comprises several semantic elements based on the psychological dimensions, and these semantic elements of any verb play significant roles in the acceptability of that verb in a specific construction pattern, such as the caused-motion construction. In the last part of this section, I suggest that the semantic elements of secondary verbs in this construction are shared with similar verbs through analogical extensions on the basis of the source verb, *strike*. In particular, this section argues that *hit* verbs can also be associated with a syntactic frame [*V fear into NP*].

#### 4.3.1 *Strike* and Different Types of Caused-Motion Events

Let us turn now to the usage of *strike* in the psychological caused-motion constructions. I investigate the cases in which *strike* can occur in caused-motion constructions, focusing on the verb's semantics. First, *strike* occurs frequently in one frame of the caused-motion construction, "*V fear/terror into NP*," which is regarded as an idiomatic expression in OALD. In fact, *strike* seems to be the central member as well as the most historic one in this construction pattern. According to the Oxford English Dictionary, this usage of *strike* [Emotion Noun] *into/to/in someone* first appeared in 1440, and its occurrence with *terror* is shown as in (7a). This pattern continued for an extended period and is still used in contemporary English, as seen in (7b).

- (7) a. [...] it cannot be, this weake and writhled schrimpe. Should I *strike terror to his Enemies*. (1591, *Henry IV*, Shakespeare)
- b. His appearance will *strike terror into his enemies*. (1875, *Plato* (2nd Edition), Jowett)

According to the OED, this pattern can occur with various emotion nouns: *Fear* and

*terror* appear frequently with *strike* [Emotion Noun] *into NP*; therefore, the pattern can be regarded as a single fixed expression in present usage. Although the emotion noun in this construction could potentially consist of many words, the pattern of the constructions has come to be used idiomatically with only *fear* and *terror*. The discussion is limited to the sole case of *strike fear into NP* because *fear* indicates a basic emotion distinct from *terror*.

Here, I describe the semantic features of *strike*, which is generally categorized as a member of the *hit* verb class (cf. Levin 1993). The behaviors of *hit* verbs that occur in a specific pattern are not always uniform. In fact, *strike* is not compatible with the caused-motion construction because it carries the implication that the direct Object is directly affected (Jackendoff 1990, Goldberg 1995). The affectedness of the Object appears to be related to a force of strong impact. The affectedness of *strike* in (8) thus cannot be related to a semantic restriction on the caused-motion construction. *Strike* can be associated with the same construction pattern as *strike fear/terror into NP*. This acceptable usage depends on the situations and the nature of the Objects that take *strike*. The contrast between (8) and (9) indicates that *strike* has more than one sense even in identical constructions. The scenario of striking the ball into a location in (8) indicates that the ball is forced to move into the back of the net without any implication of a change of state in the ball. The usage in (9) may not be normal; it occurs in the limited context of sports. In fact, *strike fear into NP* has specific usages in terms of caused-motion constructions and in terms of the various behaviors of *strike*.<sup>4</sup>

(8) \*The man struck the ball into the field. (adapted from Jackendoff 1990: 144)

(9) a. Jennifer Sclater [...] struck the ball into the back of the net. (BNC)

b. He walked up to the penalty spot and struck the ball firmly into the back of the net. (OALD)

*Hit* verbs can express various meanings depending on the situations. In example (9), *strike* takes the sense of “hitting.” *Strike* can take various types of Objects such as a ball to use for a sport, a man, etc. The acceptability of caused-motion constructions depends

on both contexts and the collocation patterns with different meanings of the verb *strike*. In examining the usages of *strike*, it can be seen that psychological caused-motion constructions involve different event types involving strong impact by some contact, denoted by the original and spatial verbal sense.

(10) The man struck a nail into the board.

(11) The man struck the dagger into the bosom of the lady.

The two events seen in (10) and (11) are associated with the same event type, “inserting,” and present different manners of action on the Object. In (10), the action of *striking a nail* can represent either an iterative activity or a one-time activity through the addition of an adverb such as *continuously* or *at once*. In (11), the action can express a single instance of moving a dagger hard and quickly. However, *strike fear into NP* presents both readings. As illustrated in (12), it can be modified with either *many times* or *at once*. That is, both the iterative and one-time action readings can result from the literal use of *strike*.

(12) The man struck fear into the lady {many times/at once}.

The sentence in (12) entails that the semantic elements contributed by the literal “hitting” sense of *strike* are related to psychological caused-motion constructions.

(13) The man struck fear into his neighbors.

Similar to other psychological caused-motion constructions, (13) indicates insertion of an Object into a location by a Subject’s striking rather than spatial caused motion. Thus, *strike* plays a role in describing the psychological event by using *strike fear into NP*. In fact, *strike* is associated with the action of inserting an Object into something with force. The literal collocation pattern of *strike NP into NP* denotes an event of inserting something into a location. Thus, the psychological caused-motion constructions can describe an extended caused motion of insertion, meaning of *strike fear into NP* is related

to the literal use by metaphorical extension.

The verb meaning cannot emerge in isolation but can appear in the specific constructions. Indeed, the uses of *strike* can denote various events involving impact, such as violence, sports, and construction work. Thus, the caused-motion event meaning of *strike* does not reflect the only meaning of the verb, and the verb's meanings are dependent on the frame of the construction (Croft 2012). Its semantic structure is similar to that of the Object Experiencer constructions, as illustrated in (14) and (15): here, the Subject can be either an Agent or a Cause, depending on context.

- (14) a. The murderer struck fear into the people.  
b. The murderer acted on the people and they felt fear, or the people recognized the appearance of the murderer and felt fear.
- (15) a. The murderer terrified the people.  
b. The murderer acted on the people and they felt terrified, or the people recognized the appearance of the murderer and felt terrified.

The semantic elements of *strike* impose a semantic restriction on the types of emotion nouns that it may co-occur with. Here the representation of *strike fear into NP* is given in (16).

- (16) Syn: [NP<sub>X</sub> *strike fear* into NP<sub>Y</sub>]  
Sem: [X causes Y to feel intense *fear suddenly*].  
X: Stimulus (Cause/Agent),  
Y: Experiencer

In the semantics of (16), the psychological dimensions of *strike*, the onset of emotion and degrees of emotional intensity, are specified. First, the semantics of *strike* determine the suddenness of the onset of emotion. Next, *strike* specifies the degree of emotional intensity; the overall constructional semantics of (16) describe intense fear. Of course, the semantics are not fully defined for the meaning of *strike* although the combination of

*strike* and *fear* is composed of these specific features of psychological dimensions. In short, the semantic features of *strike* entail the sudden onset of emotion and intense emotion, which can be encoded as the features SUDDENNESS and INTENSITY. However, the duration of emotion may not always be encoded by constructions or individual semantic features. The duration is linked to various factors, including the kinds of onset of emotion, combination of a verb and *fear*, and tense of the entire concrete instances.

The participants' roles are shown in the third line of (16). This representation shows that participant X plays the role of a Stimulus (Cause/Agent) and participant Y is an Experiencer. The definition of Stimulus follows that by Croft (1993, 2012), in which the Stimulus is the cause of a change in the Experiencer's mental state rather than the agent causing an event. Cause and Agent are put in parentheses, since *strike fear into NP* can take either the Cause or Agent role.

As seen in this section, *strike fear into NP* is a specific conventionalized pattern that reflects semantic traits similar to those of the literal use of *strike*. In its schematicity, *strike fear into NP* can be considered a lower-level construction, which cannot be accounted for in the verb-specific constructions (see Chapter 2).

#### 4.3.2 The Extensive Usage of *Strike Fear into NP*

Now, let us consider the many uses of the schema of *strike fear into NP*. I predict that the usage of *strike* allows the other similar verbs directly associated with a particular noun to appear in the same frame [V *fear* into NP]. In particular, I identify and examine the verbs that can replace *strike*, with a focus on their semantic traits. The *hit* verb class, which comprises verbs that describe hitting events, can also occur with psychological caused-motion constructions, as in (17).

There are different interesting behaviors among the *hit* verbs. Their similarity with *strike* depends on whether the constructions are licensed.<sup>5</sup>

- (17) a. The man {shot/hit/knocked/beat} fear into us.  
 b. The man {\*?kicked / \*banged } fear into us.  
 c. \*The man tapped fear into us.

In (17), the central usage of *strike* may motivate the extended usages of other similar verbs. Specific semantic elements are not associated with the [V *fear into* NP] pattern owing to the salient semantic part of the verb. These examples show the favorable conditions for extended usages of the original forms, which I will now describe. In (17), the sentences with *hit* verbs are related to the ordinary meaning of *strike* to some extent. Examples (17a and b) show that the extension of the crucial sense of *strike* to other verbs is semantically restricted. The difference between (17a) and (17b) is related to their degree of semantic similarity with *strike*.

Unacceptable *hit* verbs, such as that in (17b), are those in which the means or manner of hitting is lexically specified. In fact, the salient meaning of *kick* specifies foot motion and *bang* signifies causing a sound from the action. Conversely, *strike* implies hitting something intensely, and its related semantic elements are predictable as possible modifiers. In the case of (17c), *tap* is lexically blocked from the construction because its meaning indicates hitting something lightly. Partial semantic similarity to *strike* induces other *hit* verbs to occur with non-conventionalized psychological caused-motion patterns.

Let us now turn to the INTENSITY of *strike*. The following sentences with *beat* can express intensity with the addition of the word *intensely* but cannot express the converse with *softly*:

- (18) a. Joe struck fear into Mary intensely.  
 b. Joe {shot/hit/slapped/beat/knocked} fear into Mary intensely.  
 (19) a. \*Joe struck fear into Mary softly.  
 b. \*Joe {shot/hit/slapped/beat/knocked} fear into Mary softly.

Next, I will investigate the shared semantic elements associated with the verbs in the [V *fear into* NP] pattern. The same principle applies for INTENSITY in (18) and (19). In



these cases, *strike* in the psychological caused-motion constructions lexically specifies a sudden onset of emotion (SUDDENNESS). As shown in (20), it is natural that instances of *strike* can be modified by the adverb *suddenly* but not its antonym, *gradually*. The overall meaning of (20) indicates the sudden onset of fear.

- (20) a. Joe struck fear into Mary suddenly.  
b. \*Joe struck fear gradually into Mary.

The verbs in (21) are incompatible with the modifier *gradually*. The time expressed for the onset of emotion by *beat* and *knock* is less like that by *strike*; thus, these verbs are more acceptable with *gradually*, as seen in (21c). One of the conditions involved is suddenness for the onset of emotion, which is required to license *hit* verbs in the [V *fear* into NP] pattern.

- (21) a. Joe {beat/shot/slapped} fear into Mary suddenly.  
b. \*Joe {hit/shot/slapped} fear gradually into Mary.  
c. ??Joe {beat/knocked} fear gradually into Mary.

Thus, the common semantic elements of these verbs are a sense of SUDDENNESS and INTENSITY. This contrast in (21) indicates that the shared semantic feature of SUDDENNESS may play a central role in extending the [V *fear* into NP] construction to allow similar *hit* verbs. Therefore, *suddenly* is compatible with constructions such as those found in (22).

- (22) Joe {struck/hit/shot/slapped} fear into Mary suddenly.

The sentences in (23) illustrate that another aspectual feature also lexically blocks the usage of the verbs. Note that *beat* can also share the crucial semantic element CONTINUITY. It is closely involved with the duration in the psychological dimensions. The examples in (23) can appear with the modifier *continuously*, which tends to entail

continuous acts of impact by contact. This also means that the hitting or impact by contact denoted by *strike* also contributes to verbs' possible use in the [V *fear into* NP] construction.

- (23) a. Joe struck fear into Mary continuously.  
b. \*Joe {hit/shot/slapped} fear into Mary continuously.  
c. Joe {beat/knocked} fear into Mary continuously.
- (24) a. Joe struck fear into Mary at once.  
b. Joe {hit/shot/slapped} fear into Mary at once.  
c. \*Joe {beat/knocked} fear into Mary at once.

The contrasts between (23) and (24) show that all three aforementioned semantic features of *strike* are lexically required when *hit* verbs are used in the psychological caused-motion construction [V *fear into* NP]. In (23b), the verbs lexically indicate just one time of action: the interpretation is specified by the semantic elements of the duration, ONE TIME of action. The examples of (23b) designate the short duration by specific verb meanings. On the contrary, the examples in (24) illustrate a contrasting aspectual feature because they can be modified by *at once*. *Strike* and the verbs in (24a and b) can express a one-time action but *beat* and *knock* are not compatible with this interpretation. In (24a), *strike* does not specify an iterative sense in isolation but is nevertheless compatible with the action of *striking*. The verbs in (24c) denote multiple actions lexically; the action denoted by the verb is iterative. Each *hit* verb is associated with an aspectual interpretation, CONTINUITY or SUDDENNESS, although they may not have literal interpretations. In particular, *beat* lexically specifies the number of iterations of the action. Neither its literal nor metaphorical uses can express a one-time action (e.g., \**Mary beat him only one time*). Typically, *knock* does not denote hitting many times, but it can be connected to the usage of hitting many times in constructions such as *knocking on the door* or *knocking a nail into a wall*. Such knocking events are likely to be associated with multiple actions and provide us with interpretations of CONTINUITY. In contrast to (23b), the gradual onset of emotion is closely related to CONTINUITY, as in (23c). This aspectual feature of *knock* can be deduced from the lexical information involved in its

various usages.

In summary, *strike* serves as the semantic prototype for the extended use of *hit* verbs to some extent in the constructions. The preceding discussion shows that *strike* in [V *fear into* NP] comprises a model upon which other similar verbs can analogously participate in the construction, given their shared semantic features with *strike*. This combination of *strike* and *fear* can be considered a lower-level construction that designates the valid semantic elements of both lexical meaning and constructions. Let us call this type of low-level constructions a *verb–noun construction*. In fact, if several verbs denote hitting or impact by contact but do not share other necessary semantic features with *strike*, they cannot participate in the [V *fear into* NP] pattern.

Other verb-specific constructions can express overlapping semantic elements in the same frame, [V *fear into* NP]. Next, let us consider a different type of [V *fear into* NP] associated with *put*. The usage of *put* differs from the analogical extension of *hit* verbs. For example, *put* can be replaced in the psychological caused-motion constructions. Both *put* and *strike* can express insertion of an Object into a location through *into* phrases. However, *put* can also express a caused-motion event, unlike *strike*, as exemplified in (25a). In (25a), The psychological instance is still metaphorically extended as in (25b and c). Then, in (25c), the Object is used to express an intense fear, and the expression *put the fear of God into someone* is fixed.

- (25) a. The woman put a needle into the man's back.  
b. His appearance put fear into us.  
c. The school counselor put the fear of God into the girls when she talked about AIDS. (*The American Heritage Dictionary of Idioms*, 2<sup>nd</sup> Edition)

The sentences in (25) are comparable to the usage of *strike* NP<sup>1</sup> *into* NP<sup>2</sup>. *Put* does not indicate the hitting sense but can be related to *hit* through its sense of insertion in caused-motion events. The act of inserting implies a caused motion specifying a change of location, moving something from the outside to the inside. *Put* is a basic verb of caused motion since the verb meanings of *put* encode a rich manner of caused motion (cf.

Goldberg 2006). In terms of the onset of emotion, *put* displays SUDDENNESS as shown in (26b and c). The sudden onset of emotion is more natural and ordinary understanding although *put* is a basic verbs of caused-motion sense specific for its manner or means. Apart from the duration and degrees of intensity, the patterns do not specify any other semantic elements. Both *strike* and *put* are associated with a type of inserting. Verbs that can occur in psychological caused-motion constructions share SUDDENNESS, although *fear* plays a role in determining intensity, as seen in the usage of *the fear of God*. The *fear* phrases [FEAR] appearing in the Object position includes an idiomatic intensifier. Thus, the pattern [*put* [FEAR] into NP] differs from verb–noun constructions, where *strike* takes a central role.

- (26) a. The manager put fear into his team for a long time.  
 b. ??The manager gradually put fear into the girls.  
 c. The manager suddenly put fear into the girls.

The duration of [*put* [FEAR] into NP] is encoded by the feature *fear*: CONTINUITY is available within the use of *put* as well as *strike*. The overall causative structure is specified by the construction schema although its specific features are determined by verb meanings and *fear*.

#### 4.3.3 Summary

I have examined the features of the [V *fear into* NP] construction in terms of psychological semantic elements as well as in relation to the analogical extension of *strike*, the standard verb in this construction. The *hit* verbs possible in [V *fear into* NP] share several semantic elements with *strike*: they must have at least one of the semantic elements SUDDENNESS, INTENSITY, ONE TIME action, or CONTINUITY, which are associated with *strike* in *strike fear into NP*. These elements convey the details on the psychological dimensions, including the duration, the onset of emotion, and intensity, in these constructions. These psychological semantic elements play a role in identifying the psychological constructions, as discussed in Chapter 3. Furthermore, *strike* [FEAR] into

*NP* can function as a central collocation to increase the productivity of [ V [FEAR] into NP].

#### 4.4 Categorization Within Constructions

In this section, I observe examples taken from corpus data to confirm extended usage of *hit* verbs based on *strike*, as described in Section 4.3. Using this methodology, I further discuss how the semantic elements of verbs relate to the extended use of the construction. The data suggest three main verb classes that occur in the [V [FEAR] into NP] construction patterns: *hit* verbs, caused-motion verbs such as *put*, and *instill*. This section also develops each verb and the relationship of its meaning types in one category of the constructions specified by *fear*.

##### 4.4.1 Variations in the Corpus Data

I now introduce some prominently occurring verbs found in the following corpus data. Tables 1 and 2 show the number of verb occurrences in the constructions [V [FEAR] into NP] and [V [TERROR] into NP] in each corpus. I extract all the individual occurrences of the same construction patterns. FEAR in the construction form includes *fear*, *the fear of God*, and *the unhealthy fear*. Similarly, the following data illustrating the [V [FEAR] into NP] construction show the predominant occurrence of *strike* in the constructions. It is seen that *strike* is conventionalized in the constructions because *strike* occurs the most frequently in each construction pattern. Furthermore, *instill* is found in the data of both corpora. The most numerous occurrences are those with *put* in terms of the [V [FEAR] into NP] construction. In fact, Objects of *put* show particular features, as discussed in Section 4.4.2.

Table 4.1. Total distribution of verbs in [V [FEAR] into NP] in the BNC and COCA

BNC [total 48]	COCA [total 144]
put [24]/ strike[20]/ instill [3] drive [1]	put [63]/strike [57]/instill [4], bring [4]/inject [2], throw [2], send [2]/beat, build, carry, cast, drive, incite, insert, leak, pump, shoot [1]

Table 4.2. Total distribution of verbs in [V [TERROR] into NP] in the BNC and COCA

BNC [total 12]	COCA [total 25]
strike [11]/instill [1]	strike [21]/ bring [2]/ instill/send [1]

Note the occurrences of *put* in the [V [FEAR] into NP] construction, such as in (27). As noted in Section 4.3, *put* in this construction encodes the action of inserting fear inside something and takes as its Object the intensive phrase *of God*, as in (27). The form [*put* [*the fear of God*] into NP] is patterned as a conventionalized and idiomatic expression since *the fear of God* is found in more than half of all instances of *put* in the data of both corpora.<sup>6</sup>

- (27) a. He himself would ***put the fear of God into*** the professors of Königsberg and  
Breslau [...]. (BNC)
- b. Gracia decides that it is time to ***put the fear of God*** into Sara. (COCA)

- (28) a. Believe me, all those cannon, mortars, and volley guns should *strike fear into the heart of the enemy*. (BNC)
- b. I think, something can happen, I mean, really terrible, that could *put the fear into people*, and then maybe, that would sort of turn people in view of it. (BNC)
- c. I'll also take the electoral college, two words that *strike fear into the hearts of candidates* that confuse just about everybody else. (COCA)
- d. This urban terrorist has really *injected fear into the very marrow of the community*. (COCA)
- (29) a. The news that Esau is coming at speed, and with a force, *strikes terror into Jacob*. (BNC)
- b. One judge said the policy would *strike terror into the heart of mothers*. (COCA)
- c. That includes the ability to *instill sheer terror into every warm-blooded human* by merely looking into their eyes and whispering the words, “root canal.” (COCA)

As mentioned in 4.3, *strike* is almost conventionalized in both [V [FEAR] into NP] and [V [TERROR] into NP], as reflected in the frequency of occurrences in the corpora in (28) and (29). It may be difficult for other verbs to appear in the construction [V [TERROR] into NP] because *terror* indicates a specific subtype of fear (Table 4.2).<sup>7</sup> Thus, the collocational patterns associated with *terror* seem to be more limited because the concept of *terror* is quite specific. It is seen that [*strike* [TERROR] into NP] is represented as a fixed collocation unit.

In summary, the corpus data recorded in Tables 4.1 and 4.2 illustrate that the occurrence of *hit* verbs reflects analogical extension from the prototypical use of *strike*. Let us presume that the lower-level constructions denoted by the *fear* phrase play a role in the construction's productivity by limiting verb meanings: the [V [FEAR] into NP] construction is regarded as *a noun-specific construction*.

#### 4.4.2 *Put the Fear of God into NP*

Now let us focus on behavior of the idiomatic and conventionalized expression *put the fear of God into NP*. This expression exhibits some degree of analyzability, or “the extent to which speakers understand the semantic contribution of component elements” (Langacker 2008: 26). In *put the fear of God into NP*, the position of the verb and the intensive phrase can be extended to related usages. Relevant instances from the corpus are presented and analyzed below.

First, note that the phrase [of *God*] does not have a literal reading but rather serves to intensify the degree of *fear*. The examples in (30) illustrate possible variations of the intensive phrase.

- (30) a. I put *the fear of the Goddess* into her.  
b. I think he puts *the fear of hell* into everybody.

(both from BNC)

In (30a), because the Subject is female, the intensive word is changed to indicate a female property. These variations thus show a dynamic aspect of the conventionalized phrase, and its extended usage can be motivated by the analyzability of the original form [the fear of [God]]. These variations in Object choice do not denote literal concrete entities.

Moreover, *put* can be replaced with other verbs, as in (31) below. These instances show how the applied use of the verb is analogous to the original form.

- (31) a. The real memories and exaggerated horror stories have combined to *strike the fear of God into the Serbian minority* in Croatia. (BNC)  
b. [...] we're going to *throw the fear of God into them*. (COCA)

In (31a), a variation of the prototypical use of *strike* in [V [FEAR] into NP] overlaps with the use of the [put [*the fear of God*] into NP] pattern. The two patterns [V [FEAR] into NP] are related and combine with each other to create the novel use in (31a). Accordingly, each is composed of smaller construction categories and fixed as a base that



creates novel uses of verbs. Thus, these extended usages show the analyzability of the construction pattern and grouping into a category.

However, the form of extension in (31b) is not the same as that in (31a). The instance in (31b) reflects the interaction of an analogous verb meaning. *Throw* is a caused-motion verb, and in (31b), it means inserting fear. This extended usage of *throw* is motivated by its similarity to *put*. *Throw* is categorized as a basic caused-motion verb, and *throw something into NP* contains a change of location. Notably, *throw* is a special verb that allows more usages than other throw verbs (e.g., *\*toss the fear of God into someone*). Kövecses (1990) noted that *put* and *throw* indicate instantaneous metaphorical actions that instantly highlight fear. Both *throw* and *put* are basic verbs denoting caused-motion events. The motivation for (31b) is related to the common implication of momentary quick actions in moving a thing strongly denoted by *throw*.

Based on the two instances in (31), I propose that extension from the basic use is permitted at various levels of the expressions, such as the category of the construction and the relationship between verb meanings. Again, the [put [*the fear of God*] into NP] pattern shows the feature of a specific type of psychological caused-motion constructions. The [put [FEAR] into NP] construction in turn allows two types of Objects, as *fear* and *the fear of [Noun]*. Indeed, instances of [put [*the fear of God*] into NP] are abstracted into [V [*the fear of God*] into NP] at the more schematic stage in the constructions. Therefore, [put [FEAR] into NP] plays a role in determining the possibility of additional lower-level constructions. It shows a specific behavior in the case of *fear* phrases, which can be regarded as verb-noun constructions.

#### 4.4.3 *Hit* Verbs

As mentioned in Section 4.1, *strike* behaves as a central source verb in the [V [FEAR] into NP] construction. I will discuss how its semantic features such as SUDDENNESS, INTENSITY, CONTINUITY, and ONE TIME action involve extended usages based on other *hit* verbs, allowing new expressions to be accepted as analogical extensions. The availability of the extended usages of *hit* verbs is illustrated in (32).

- (32) a. He *shot* fear into the hearts of all upstanding people and others [...].  
 b. [...] and they're going to *beat* fear into people, [...].

(both from COCA)

In (32a), *shoot* has the features SUDDENNESS for onset of emotion, INTENSITY of impact, and ONE TIME action. In contrast, in (32b), *beat* indicates CONTINUITY of action and INTENSITY of impact. In fact, these semantic elements overlap between *strike* and other *hit* verbs but do not overlap completely. The difference between *shoot* and *beat* depends on the manner of the action, as shown in (33).

- (33) a. \*He shot fear into the hearts of people {continuously/gradually}.  
 b. He beat fear into people {continuously/??gradually}.

The iterative reading of *shoot* is unacceptable in (33a), since *shoot* in the [strike [FEAR] into NP] construction is not compatible with an iterative reading. Thus, the duration of fear is limited to a single short period of time.

In addition, *drive* shows the same semantic features as *beat*, as illustrated in (34). Although *drive* can describe various types of action, its use indicates a repeated impact, such as the action of putting and hitting in (34b).

- (34) a. The IRA, [...] what part of his statement will have *driven* fear into the  
 terrorist's heart? (COCA)  
 b. The men in the smithy seized him; and one of them took a hammer and *drove*  
 a nail into the sole of his boot. (BNC)

Thus, the adverbs *continuously* and *gradually* can modify both (34a) and (34b). The action of *driving fear into someone* derives from this semantic feature of the literal use of *driving*. In this way, it differs from *hit* verbs. Like *strike*, *drive* can be used in a literal sense to describe the pushing of nails into something. This similarity in terms of repeated actions is motivated by the analyzability of the [V [FEAR] into NP] construction. The

definition of driving as an iterative action is reflected in the gradual manner of the action in (35b). In terms of degrees of intensity, the combination of *drive* and *fear* is not natural by accompanying weakly, as shown in the contrast of (35c). Therefore, GRADUALNESS of the onset of emotions, CONTINUITY of emotion, and INTENSITY of emotion are the relevant semantic features of *drive*.

- (35) a. He is trying to ***drive*** psychological fear into the American people. (COCA)  
b. He drove fear into the American people {gradually/continuously}.  
c. He drove fear into the American people {intensely/??weakly}.

#### 4.4.4 *Instill*

Now let us turn to the use of *instill*. The pattern *instill* [Emotion Noun] into *NP* is regarded as a psychological caused-motion construction that takes *fear* as an Object. Seen in the OALD, *instill* means “to gradually make somebody feel, think or behave in a particular way over a period of time.” Its original sense is that of dripping liquid little by little (OED). In semantic terms, the sense of repeated action is associated with a continuous and gradual onset of emotion. An example with *instill* is shown in (36).

- (36) 72 Hutu-controlled radio broadcasts ***instilled*** fear into the Hutu population in Rwanda. (COCA)

Note that *instill* can express a continuous action that causes people to feel fear. This continuous sense implies a gradual onset of emotion rather than a sudden or instantaneous onset, as shown in (37).

- (37) The broadcasts ***instilled*** fear into the Hutu population in Rwanda {continuously/gradually}.

*Instill* thus indicates a long, continuous action rather than a quickly occurring one, and its semantic elements are partly similar to those of *strike fear into NP*. The pattern occurring

with the *instill* emotion verb is composed of one small category at the level of verb–noun-specific constructions.

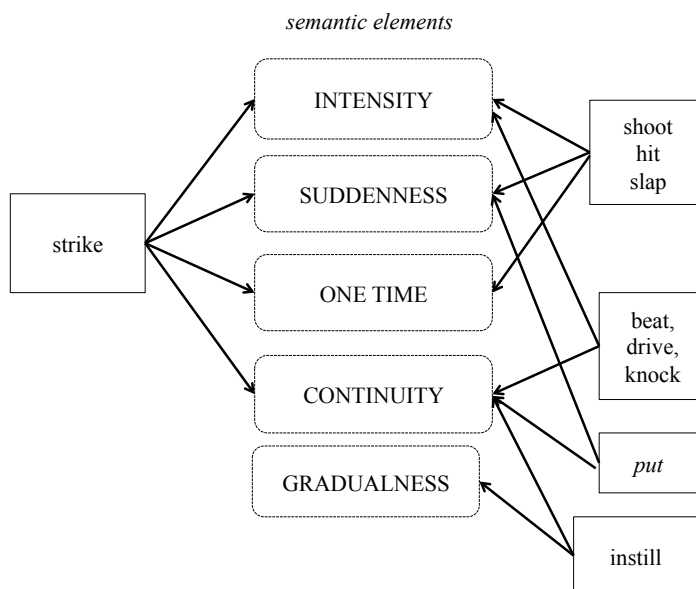
Thus, *instill* emotion verbs are distinct from *hit* verbs, even though their CONTINUITY and GRADUALNESS interact with semantic elements of *hit* verbs. These two elements share the characteristic of encoding the duration of *fear*. In particular, GRADUALNESS is a specific onset of emotion, distinct from CONTINUITY for the duration.

#### 4.4.5 Organization of Lower-Level Constructions

Our preliminary investigations suggest that the [V [FEAR] into NP] construction represents a type of *noun-specific construction*. Its overall causative force comes from the [V [FEAR] into NP] pattern, and semantic features for manner and degree of emotional intensity are contributed by verb meanings.<sup>8</sup>

The psychological features of *strike* are partly shared by other verbs that can occur in this construction, which form a network based on similarities in semantic features. This network is presented in the figure below.

Figure 4.1. Network of verbs in the [V [FEAR] into NP] construction



*Hit* verbs are grouped into a solid rectangle. The arrows linked to *strike* indicate that *strike* encodes five semantic features. The extended usages of the verbs are linked to shared semantic elements. The rounded rectangles in Figure 4.1 show that *strike* indicates the four features INTENSITY, SUDDENNESS, ONE TIME action, CONTINUITY, and GRADUALNESS. The rectangles on the right side of Figure 4.1 show the other verbs that can appear in the [V [FEAR] into NP] construction; their corresponding semantic elements are indicated by solid arrows.

The following verbs are associated with hitting or impact by contact in the figure. First, the *shoot* group shares INTENSITY and SUDDENNESS with *strike*. Next, verbs in the *beat* group imply repetitive actions, and share CONTINUITY, but not ONE TIME action, as does *strike*. Moreover, *instill* is not a *hit* verb, but shares CONTINUITY with *drive*, *beat*, *knock*, and *strike*. This relation of semantic overlap with *instill* is indicated as a solid arrow with CONTINUITY and GRADUALNESS in Figure 4.1. For the most frequent verb, *put*, its meaning of physical insertion is shared with *strike*. *Put* has a basic and schematic meaning of change of location, but it is associated with CONTINUITY, along with the feature SUDDENNESS. The network links to *put* should be overlapped with similar literal use of *strike*.

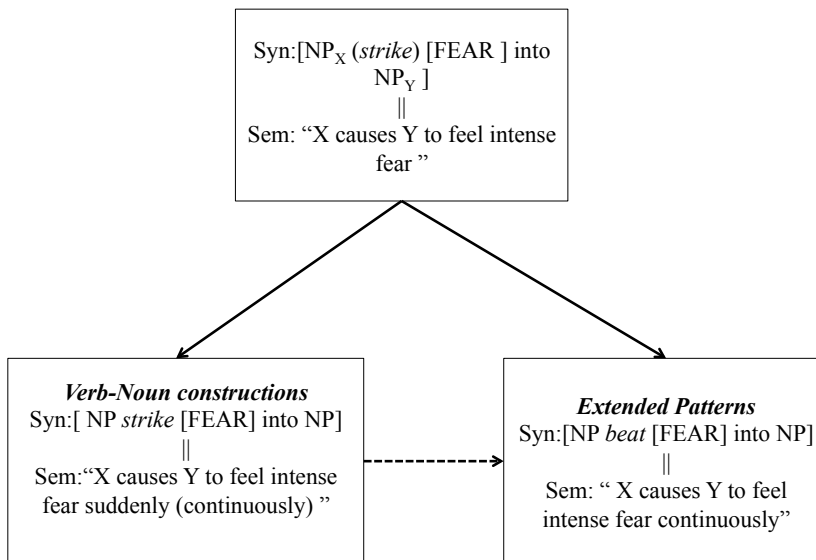
The allowable verbs in the [V [FEAR] into NP] construction are motivated by the prototypical use of *strike* and other semantically overlapping *hit* verbs. The whole category can thus be defined in terms of family resemblance. However, this network of verbs has only been captured as a planar network structure without taking into account the concept of schematicity. The organization of the vertical schema of the caused-motion constructions is needed to fully define the set of individual verbs and nouns as a construction.

#### **4.5 The Schematic Level of Verb-Noun Constructions**

Let us now turn to the schematicity of [V [FEAR] into NP] constructions. Noun-specific constructions do not fully define the features of [V [FEAR] into NP] constructions because *fear* occupies the Object position in all the instances. When verbs

and nouns are combined, verb–noun constructions are individually established. The representation of the organization of [V [FEAR] into NP] of *hit* verbs is as follows:

Figure 4.2. Organization of the [V [FEAR] into NP] construction of *hit* verbs

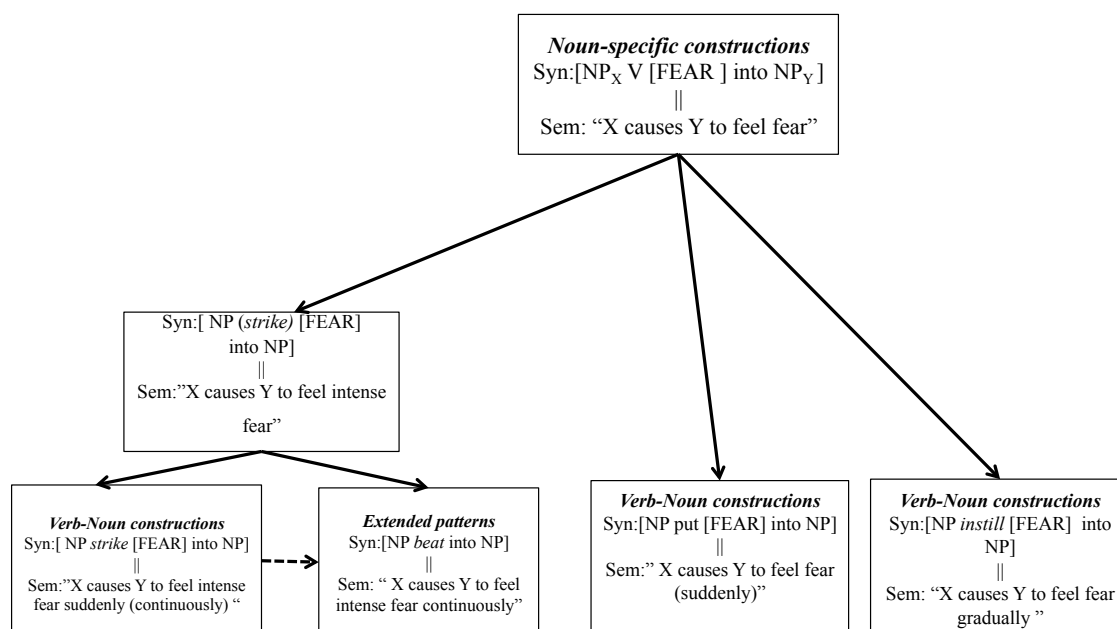


In Figure 4.2. the semantic features of the verbs are related in instances of [(*strike*) [FEAR] into NP], which is positioned as the upper box. *Hit* verbs are defined by their common semantic base not only by their common syntactic behaviors. The similarity of *beat* to *strike* allows it to participate in this construction even though it differs from *strike* in CONTINUITY. (The *strike* verb class in Figure 4.2; however, is not the same as *hit* verbs in Levin (1993). Therefore, the extensive psychological caused-motion usage of *strike* originated from its prototypical use and evolved into a dynamic category of constructions that can be extended productively if the right conditions are met.

Next, zooming in to look at the specific verb usages, the verb-class-specific constructions are organized as vertical relationships including degrees of schematicity. The schema of a construction is based on common features of its lower-level constituents, and instances of [V [FEAR] into NP] containing *strike* are abstracted gradually and

grouped with the other types of verbs such as *put*, which comprise a larger category of [V [FEAR] into NP] construction. The central member of a category forms the basis for the metaphorical expansion of the expression to various members of the category in the vertical organization of constructions (cf. Goldberg 1995, Langacker 2008, Hayase and Horita 2005), as shown in Figure 4.3.

Figure 4.3. Schematic organization of the [V [FEAR] into NP] construction



The members of the verb–noun specific construction are not homogeneous; they are composed of the prototype category among them. *Strike* is positioned in the box representing [NP *strike* [FEAR] into NP] constructions under [NP (*strike*) [FEAR] into NP]. [NP (*strike*) [FEAR] into NP] is posited at an intermediate level between verb–noun constructions and noun-specific constructions in the organization of the construction [V FEAR into NP]. Clearly, intermediate lower-level constructions are abstracted by the construction denoted by verbs partially associated with the common features of *strike*.

The same level of schema has the potential for variation, such as the variation in the verb–noun combination of *strike the fear of God into someone* (see Section 4.4.2). Noun-specific constructions share a common event type based on the literal meaning of the verbs. The hierarchical organization of [NP V [FEAR] into NP] constructions interacts with different subordinate levels of verb–noun constructions. The construction schemas will naturally vary in their categorization, and concrete instances are abstracted gradually on the basis of their features of frequency and idiosyncrasy rather than uniformed generality according to the usage-based models.

#### 4.6 Conclusion

In this chapter, I analyzed the psychological caused-motion construction *strike fear into NP* and its features as one idiosyncratic constructions and a construction category assuming a lexical-constructional framework. The first concern was defining the psychological meanings associated with the construction *strike fear/terror into NP*.

The other central issue was the semantic extension of the psychological caused-motion construction. Psychological semantic elements are associated with the lexical features of verbs possible in this construction, particularly those describing the onset of emotion, duration, and intensity: SUDDENNESS, INTENSITY, ONE TIME action, CONTINUITY, and GRADUALNESS. This construction has expanded to accommodate verbs similar to *strike* in semantic elements and event types. This is because the semantic overlap between *strike* and other verbs allows for extended usage based on conventionalized patterns. For instance, the lexical meanings of *hit* verbs are related to those of *strike*. In particular, the entire structure of the [V [FEAR] into NP] construction is composed of a network based on related verb meanings.

An examination of corpus data reveals that variations of the [V [FEAR] into NP] construction can be captured by adequate schematicity. The verbs that appear in [V [FEAR] into NP] are distinguished into hit verbs, instill, put, and other verbs. These three classes are closely associated with the meaning of Experiencer Object Constructions and share semantic features with the original prototypical usage of *strike*. In summary, the [V



[FEAR] into NP] construction represents a psychological caused-motion construction that forms the basis for varied constructions with closely related verb meanings. Notably, this chapter proposes that idiosyncratic constructions organize three levels of constructions at the details of low schematicity. These constructions vary at the degrees of schematicity. First, [*strike fear into* NP] constructions are captured by the low generality, denoted by a particular verb and noun: that is a category of verb-noun constructions. The verb–noun constructions play a role of source and central construction and increase the variety of them. By abstracting over them, they are composed of *noun-specific constructions* with their Objects being *fear*. The definite noun functions as a basic semantic feature in this type of lower-level constructions. Although I have not discussed the role of emotion nouns and semantic features in this chapter, I will focus on this in Chapter 5, where I discuss the broader range of psychological caused-motion constructions, including the features of emotion nouns.

## Notes to Chapter 4

<sup>1</sup> An earlier version of this chapter was presented at the 31st Conference of the English Linguistics Society of Japan, held at Fukuoka University in November 2013, and later published as Nakao (2014). The term “psychological caused-motion constructions” is not commonly used in the literature; it was coined from a psychological predicate in this paper.

<sup>2</sup> Indeed, *strike fear into NP* may be just a type of metaphorical expression from the perspective of emotional concepts. It is captured as a metaphorical expression manifested as a caused-motion construction. Kövecses (1990) notes some relevant questions to observe and discuss.

<sup>3</sup> In this present study, *into* phrases are discussed only as a target to investigate the data. Indeed, *in* and *to* can also occur with this psychological caused-motion construction, but not *into*. However, *into* phrases are generally used in idiomatic patterns as “strike fear/terror into NP” based on dictionary tokens (see OALD and LDOCE).

<sup>4</sup> Yoko Yumoto (personal communication) noted that the Object *ball* implies manipulation for movement toward a goal in terms of world knowledge. The event types of *strike* vary depending on the context, and Object features influence the overall constructional semantics of *strike NP PP*.

<sup>5</sup> Latinate verbs cannot occur with [V FEAR into NP] even though their meaning is similar to *strike* (e.g., \**The man {impacted/collided} fear into his neighborhood*). This fact may be related to morphological constraints on verbs possible in the dative construction. (See Pinker (1989) for more details.) The *hit* verbs discussed here are Old German in origin. This may suggest that English complex constructions are restricted by morphology, although this is mere speculation. I thank Emiko Kihara for suggesting this.

<sup>6</sup> The corpus data show that the phrase *the fear of God* most frequently appears in the position of the Object in psychological caused-motion constructions, as Table ( i ) shows.

Table ( i ) Distribution of *the fear of God* in the caused-motion constructions in the BNC and COCA

	BNC	COCA
The Object of the caused-motion constructions	20 (83.3%)	57 (67%)
Other cases	4 (16.7%)	28 (33%)
Total Occurrences	24	85

<sup>7</sup> A few possible verbs were found to occur with [V [TERROR] into NP] in web data but not in the BNC and COCA. The occurrences with *put* can be found, as shown below, although it is not found in the corpora. This issue is left open in this study, but a full mention of all the possible verbs in this construction is necessary for in-depth discussion.

( i ) We will **put terror into** the hearts of the unbelievers.

(<http://www.theguardian.com/world/2015/feb/04/isis-muadh-al-kasasbeh-death-jordan-revenge-mood>)

<sup>8</sup> The semantic features of *strike* are associated with the extension of the construction to other verbs. Although caused-motion verbs are generally used to express the motion of Objects, the semantic elements SUDDENNESS and INTENSITY are required to provide contextual information. When these elements are semantically or pragmatically expressed by some caused-motion verbs, these verbs can occur in the [V [FEAR] into NP] construction. More research is required to probe the possibility of such occurrences.

( i ) a. She leaks her fear into my mind without meaning to. (COCA)

b. It was that voice that carried fear into her, intense and sharp [...]. (COCA)

## Chapter 5

### The Interplay of Emotion Nouns and Constructions: A Comparative Study of Caused-Motion and Resultative Constructions<sup>1</sup>

#### 5.1 Introduction

This chapter aims to explore the interplay of emotion nouns and constructions through a comparison of two similar constructions with reference to schematicity, in order to capture the specific semantics of the idiosyncratic psychological constructions that contain the [V [FEAR] into NP] constructions discussed in Chapter 4. The syntactic frame [V NP<sub>1</sub> into NP<sub>2</sub>] is found in two types of psychological constructions, exemplified in (1) and (2).<sup>2</sup> We will call case (1) Construction I and case (2) Construction II. The sentences in (1) and (2) express a subject that causes an experiencer to feel a particular emotion. In (1), the emotion noun occurs in the position of a direct object, while in (2), it occurs within an *into* phrase. The surface forms are the same as the caused-motion and resultative constructions. Both constructions are based on the mental locational relation in terms of the syntactic pattern, although emotion is exhibited differently in terms of grammatical position:

#### *Construction I*

- (1) a. The man *struck terror into* the hearts of his enemy.  
b. The manager *instilled confidence into* her team.

#### *Construction II*

- (2) a. Her sudden arrival *threw us into a panic*.  
b. David Beckham *sends West End into a frenzy* with book signing event.

(<http://www.mirror.co.uk/sport/football/news/david-beckham-book-signing-west-2942759>)

A comparison of Construction I and Construction II shows that the emotion nouns differ semantically in their duration and degree of intensity. Construction I occurs with static

emotion nouns such as *terror* and *confidence*. On the other hand, Construction II occurs with extreme emotions that cannot be controlled regularly, such as *frenzy* and *panic*. Thus, there seems to be a difference between the two constructions with respect to collocational preferences for emotion nouns.

In this chapter, I will propose that the limited range of emotion nouns in the idiosyncratic constructions can be accounted for by a comparison with the constructional-specific semantics; the lower-level constructions specify the lower regularities of the lexical combinations.

In Section 5.2, I will give an overview of the previous studies on resultative constructions in order to verify the method of observation for Constructions I and II. Then, I will confirm that the construction-specific features motivate the lexical association among subtypes of the constructions, focusing on the case of *drive crazy* resultative constructions. In Section 5.3, I will discuss the necessity of examining the semantic compatibilities between emotion nouns and lower-level constructions, through a comparison with the basic construction semantics. In Section 5.4, I will indicate that the basic differences between Constructions I and II can be attributed to the pattern of the domain evocation of the arguments.

## 5.2 Previous Studies and Constructional Views

In this section, I will review previous studies to examine the constructional views with regard to the metaphorical use of resultative constructions. The surface form “NP V NP AP/PP” is common to the different types of resultative constructions, including Constructions I and II. The semantic basis for this is that the postverbal NP is predicated by AP/PP (a resultative phrase; RP) by the actions denoted by the verb. The examples presented in this chapter are treated as resultative constructions like those in (3).<sup>3</sup> In particular, RPs serve to specify the endpoint of the event denoted by the verb: the property of the event shifts from atelic to telic because of the function of RPs (see Levin and Rappaport Hovav 1995). However, unlike the resultatives in (3), Construction II denotes only a metaphorical causation (e.g., *send someone into a frenzy*).

- (3) a. Joe hammered the metal flat.  
 b. Joe painted the wall red.

The constructional view of resultatives is concerned with the metaphorical extension of the caused-motion construction. Resultative constructions, including Constructions I/II, may originate from one source structure by virtue of their forms. On the other hand, they are partially different in their semantics. In what follows, I will review the previous studies of constructional analysis, thereby focusing on the relationship between caused-motion and resultative constructions.

### 5.2.1 Metaphorical Inheritance from the Caused-Motion Constructions

Goldberg (1995) posited a metaphorical extension link between caused-motion constructions and resultative constructions. This association is based on the view that “the dominating construction’s semantics is mapped onto the dominated construction’s semantics” (Goldberg 1995: 81). It is possible to relate resultative constructions with caused-motion constructions by treating each individual construction as independent and distinctive.

The metaphorical mapping is specified by “Change of State as Change of Location” (Goldberg 1995). In (4), the action denoted by *kick* is interpreted in two ways: the action that moves the object to the spatial goal, *into the yard* in (4a); and the action that changes the object to the state *black and blue* in (4b). However, the combination featuring the directional phrase and result phrase is excluded by a co-occurrence restriction on the metaphorical extensions, as shown in (5).

- (4) a. Joe kicked the bottle *into the yard*. (Goldberg 1995: 88)  
 b. Joe kicked Bob *black and blue*. (Goldberg 1995: 88)
- (5) a. \*Sam kicked Bill black and blue into the yard. (Goldberg 1995: 81)  
 b. \*Sam kicked Bill into the yard black and blue. (Goldberg 1995: 81)

Goldberg (1995) proposed the Unique Path (UP) constraint to explain the co-occurrence

restriction on not only the caused-motion constructions but also the resultative constructions.

- (6) *UP Constraint*: If an argument X refers to a physical object, then no more than one distinct path can be predicated of X within a single clause. The notion of single path entails two things: (1) X cannot be predicated to move to two distinct locations at any given time *t*, and (2) the motion must trace a path within a single landscape.

(Goldberg 1995: 82)

Notably, Goldberg pointed out that the expressions in (7) reflect the metaphorical change of location motivated by “Motion as Change.” This suggests that verbs of directed motion such as *go* and *fall* express a change of state of the subject by adding a result expression.

- (7) a. Bob fell asleep. (Goldberg 1995: 84)  
b. Bob went crazy. (Goldberg 1995: 84)

Contrary to Goldberg’s (1995) original analysis, which aimed for a metaphorical extension link to the resultatives, Goldberg and Jackendoff (2004) assumed that caused-motion constructions are a subset of resultative constructions, because both describe the result of the event denoted by the verb. It is presumed that spatial prepositional phrases are integrated with result phrases (cf. Jackendoff 1990, Kageyama 2001). Taking another point of view, Iwata (2009) criticized Goldberg and Jackendoff (2004) for its rough classification of resultative constructions from a lexical-constructional view, and he advocated for a reanalysis of the distribution of basic resultative constructions. However, both Goldberg (1995) and Goldberg and Jackendoff (2004) paid no attention to levels of schematicity, since they saw each construction as being highly schematic. Resultative constructions include various construction patterns and indicate the semantic association between a verb and result phrase with regard to their conventionality (cf. Boas 2003). In fact, Goldberg and Jackendoff (2004) could not account for which constructions the lower-level constructions—such as Constructions I and II—are inherited from. It is also clear that a

detailed analysis of lower-level constructions is required for a valid description of the semantic features of all constructions.

### 5.2.2 Specific Schema as a Lower-level Construction

In the lexical-constructional account, constructions are categorized along a continuum that ranges from abstract constructions to individual instances. This idea is based on a bottom-up approach to capture the constructions associated with the lexical semantic information denoted by individual words.

Some construction grammarians have observed that verbs play a role in determining the semantic specifications of constructions: one specific verb specifies the common distributional RP. In particular, the contrast in (8) indicates a co-occurrence restriction on RPs of *drive crazy* resultative constructions. Goldberg (1995) proposed that *drive* lexically inherits the resultative constructions, a feature that he called an *instance link*.

- (8) a. Chris drove Pat {mad/crazy/bananas/bonkers/crazy/over the edge}.  
b. \*Chris drove Pat {silly/dead/angry/happy/sick}.

(Goldberg 1995: 79)

The sense of *drive* partially corresponds with the basic constructional semantics of resultatives (Goldberg 1995: 80). This idea is close to lexical-constructional views that posit a verb-specific construction as a significant representation. However, Goldberg (1995) only assumed that some special conventionalized cases can have the *instance link* applied to them without actually analyzing the frequencies of occurrence.

Corpus data reveal a certain feature of *drive crazy* constructions. Boas (2003), based on data from the British National Corpus (BNC), suggested that “the ‘drive crazy’ occurs only with resultative phrases that belong to a semantically very homogenous group denoting (typically) negative mental state” (p. 129), such as *mad/to madness, crazy, to distraction*, etc. Certainly, the semantic specifications of the *drive crazy* resultative construction are imposed by the use of *drive*.<sup>4</sup> Further, Bybee (2010: 81) suggested that the more frequent member serves as the central member in the category and that new expressions tend to be formed by



analogy with the more frequent member. The combination of *drive* and *crazy* forms a central function that increases the new members of RPs.

In short, the lower-level constructions denoted by *drive* and a specific RP are categorized as verb-specific constructions that can be abstracted over the resultative constructions. They are also regarded as one of the lower-level collocation patterns. Following the analysis of Boas (2003) and Bybee (2010), it is expected that the co-occurrence with emotion nouns will serve to show the relationship to either resultative or caused-motion constructions. The basic sense of constructions motivates a range of emotion nouns. In Section 5.3, I extend this lexical-constructural account for Constructions I and II to show that their relation to the basic sense of abstract constructions inherits the lower-level constructions; thus, the collocational preferences of words reflect the semantic features of the psychological constructions.

### **5.3 Two Construction Types**

Metaphorically extended argument structure constructions are linked to the basic literal instances of constructions by the principles of Construction Grammar. Surveys of constructions at the lower levels reveal the limited range of combinations of words linked to their abstract construction level. The fixed combination of individual words can be seen as one unit of lower-level constructions: they are associated with particular collocational preferences. This observation supports the need for an independent and distinct treatment of caused-motion constructions and resultative constructions, in contrast to the integrated view of Goldberg and Jackendoff (2004).

#### **5.3.1 Construction I**

##### **5.3.1.1 Emotion Nouns Occurring in Construction I**

The following sentences from the BNC illustrate that Construction I can contain only a few verbs in combination with particular emotion nouns, as in (9).

- (9) a. This is what *strikes fear into the hearts* of all but the most experienced [...].
- b. No one cares to remember whether the author of the most fascinating allegory that ever *struck despair into the souls* of imitators was a Dissenter.
- c. He couldn't *instill enough confidence into her*, that was the trouble.
- d. He has also gradually collected a team of the best teachers in the world; and has personally *instilled tremendous enthusiasm into all the students*.

(BNC)

This construction type is likely to occur with emotion nouns that are kept unchanged for a period, involved with both negative and positive emotions. A search of the BNC data for emotion nouns that occur with the form [V [Emotion Noun] into NP] showed the nouns in Table 5.1.<sup>5</sup>

Table 5.1. Distribution of emotion nouns that occur with [V [Emotion Noun] into NP]

Noun(s)	Number of Occurrences
fear	48
terror	12
confidence, scare	3
awe, enthusiasm, excitement, distress, trepidation, chill, despair, a sense of guilt, pride and honor	1

In short, Construction I is concerned with describing the (typically) continuous emotions. Emotion nouns occurring in Construction I denote fear as well as static feelings such as *despair*, *confidence*, and *distress*.

Given the semantic features of emotion nouns, the unacceptability of instantaneous emotion nouns such as *surprise* and *startle* as in (10) is due to their duration. Expectedly, Construction I can describe a continuous state by adding a time phrase like *for years*, as in (11). Thus, the duration should be designated by the emotion nouns compatible with the Construction I.

- (10) a. \*Harry put a surprise into his daughter.  
 b. \*That voice instilled a startle into Harry.
- (11) a. The name of Honda struck fear and awe into the American automobile industry  
*for years*.  
 b. The teacher instilled enthusiasm into us *for years*.

Moreover, the emotion nouns differ in whether they can occur in the other patterns of [*have* [Emotion Noun]], indicating a state of emotional relation between a subject and object. The frame of [*have* [Emotion Noun]] requires emotion nouns that can denote a static sense apart from an eventive sense. By comparing (12) and (13), the emotion nouns associated with Construction I can be seen to be related by their compatibility with time duration. In fact, *surprise*, *startle*, and *fright* evoke an instantaneous psychological change lexically.

- (12) \* I have a {surprise /startle/fright} of snakes.
- (13) a. I have a fear of snakes.  
 b. Sam has despair about his job.  
 c. Sam has confidence in her carrier.

The patterns of [*have* [Emotion Noun]] are semantically compatible with continuous emotions. Let us consider *belief* as shown in (14). *Belief* describes a continuous psychological state: the definitions are “the feeling that something is definitely true or definitely exists” (LDOCE) and “the feeling that something is good and can be trusted” (LDOCE). Also, the emotional relation between a subject and object supports a continuous feature of *belief*, as in (15).

- (14) Certainly the performances of our players helped *instill belief into everyone* at the club that the future is bright,[...]  
 (<http://www.abc.net.au/news/2014-08-29/moss-to-stay-mariners-boss-until-2017/5706144>)
- (15) We have beliefs about ourselves.

In short, the time duration illustrates that emotion nouns can be associated with Construction I. The prototypical nouns can be seen to express temporal stability to some extent (Givón 1984). In this view, there must be some degree of time stability associated with certain kinds of emotions. Some emotions indicate less time stability, such as *surprise* and *startle*, while others indicate more time stability such as *fear* and *confidence*.

To summarize, the emotion nouns that denote a continuous state can occur in Construction I: they play a role in determining the duration of psychological dimensions. It is necessary to verify the association using basic constructional semantics, in order to describe the distribution of constructions. I will address the similarity between Construction I and the caused-motion constructions, since they entail that a moving entity is changed during a motion event.

### 5.3.1.2 Inheritance from the Caused-Motion Constructions

Next, let us turn to the interaction between emotion nouns and caused-motion constructions at the abstract level. Caused-motion constructions like (16) commonly show that the object is caused to move along the directional phrase and that the object is in a particular location as a result, without its state being changed by some force. This semantic commonality is connected with the basic sense of the caused-motion constructions.

- (16) a. Harry threw a ball into the box.  
b. The company flew him to New York.

Notice that a semantic constraint in terms of a change of state has been widely observed (Jackendoff 1990, Rappaport Hovav Levin 1998). Normally, the contrast in (17) illustrates that the change of state denoted by the verb is incompatible with the specification of the path of motion.

- (17) a. The man *kicked* a box into the room.  
b. \*The man *destroyed* a box into the room.

In (17a), the action *kick* denotes an impact-by-contact, and it implies that a box is caused to move into the room without any other change mentioned. In (17b), *destroy* does not involve an action of caused motion and is excluded by the construction-specific restriction (cf. Goldberg 1995).<sup>6</sup> The significant point is that the object is moved by a subject along the path, and the object arrives at the goal definitively without being changed. The feature of the object keeps its original state through the caused-motion event.

Thus, the interaction between Construction I and the caused-motion constructions holds for the feature of the object. With regard to Construction I, the emotion noun is treated as a moved object, which is not caused to be in a different state as a result of the described process. The abstract level of the caused-motion constructions dominates Construction I in the relations of schematicity.

### 5.3.1.3 Interplay of Emotion Nouns and Lower-Level Constructions

To describe the combination of emotion nouns and lower-level constructions, we must further examine the collocational restrictions on lower-level constructions. The onset of emotion is specified as sudden or gradual by the verb meaning. The patterns of collocations indicate the special semantic elements for a psychological event denoted by a verb. There are two conventional patterns of *strike* and *instill*. The following contrast in (18) illustrates that *strike* can co-occur with the *fear*-type nouns and other negative emotion nouns. The other positive emotion nouns cannot be combined with *strike*, which correlate with the collocational preference.

- (18) a. The man struck {fear/terror/awe/trepidation/despair} into his followers.  
b. \*The man struck {confidence/enthusiasm/respect} into his followers.
- (19) a. The teacher instilled {fear/terror} into his students.  
b. The teacher instilled {confidence/enthusiasm/respect} into his students.

In (18a) and (19b), *instill* can be found with positive emotion nouns and negative emotion nouns. The emotion nouns can be associated with *instill* to a greater extent than with *strike*. From another perspective, the verbs express the manner in which an emotion arises

and develops in the experiencer (see Chapter 4): *strike* implies the suddenness and intensity of onset of the emotion; *instill* implies a gradually developing emotion.

In addition, the positive emotion nouns can appear with *strike* as is found in (20) despite a collocational preference for *strike*. The subject *anthem* plays the role of causing people to feel *pride and honor* because it contains nationally inflected general knowledge. In contrast, the example in (21) is unnatural, because the song and sonata only play the role of simple entertainments.

(20) I contrast this with the emotion and heart-wrenching sincerity with which the citizens of the United States salute their country as they sing the “Star Spangled Banner,” “God Bless America,” “America,” and *other such anthems which strike pride and honour into one’s soul*. (BNC)

(21) ??The {sonata/song} struck pride and honor into one’s soul.

As in (20), *pride and honor* are interpreted as emotions caused by the anthem in an intense or forceful manner, denoted by *strike*.<sup>7</sup> It appears that the specific social role of the *anthem* is necessary to evoke the elements *pride and honor*, given the particular context. Viewed in the context of example (20), the act of saluting can be seen to be closely related to the act of singing anthems, which has a purpose similar to saluting in terms of being an activity that praises a nation.

In sum, Construction I can be subdivided into lower-level constructions that are treated as the conventional combination of a particular verb and some range of emotion nouns. These combinations of a particular verb and specific nouns indicate psychological semantic elements such as continuity and the sudden or gradual onset of emotion, which is categorized as the specific emotion type.

#### 5.3.1.4 Representation of Construction I

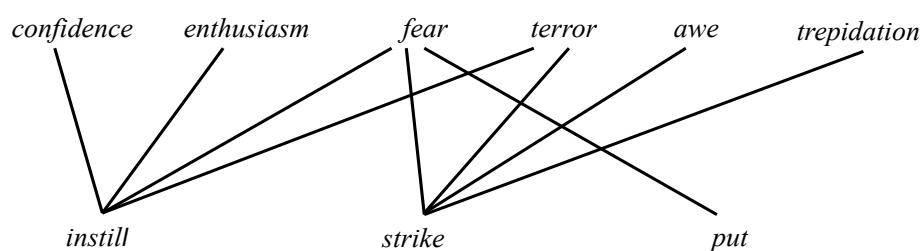
We have just seen that the compatibility with the emotion nouns in Construction I can be connected to caused-motion constructions. This leads us to the suggestion that the individual instances of the lower-level constructions involving a verb and an emotion noun

are sanctioned by two different level constructions. Now let us consider the two levels of schematicity to reveal the way to sanction the particular concrete constructions. The abstract feature of [ V [Emotion Noun] into NP] constructions is simply represented as in (22). The semantics as in (22) only designate the continuity of emotion and causative structure although the total duration of constructions is also influenced by the context and tense of the verb.

- (22) Syn: [ NP<sub>X</sub> V [Emotion Noun] into NP<sub>Y</sub> ]  
 Sem: [ X causes Y to feel [continuous emotion] ]  
 X = Stimulus (Cause/ Agent)  
 Y = Experiencer

In fact, fixed combinations of verbs and emotion nouns are found, although other verbs can occur with Construction I. As in Figure 5.1, the combinations of verbs and emotion nouns overlap with each other. The combinations in Table 5.1 show that *fear* will be compatible with verbs such as *strike*, *instill*, and *put* in a less restrictive pattern (for details, see Chapter 4), and that *instill* can be associated with emotion nouns flexibly. As discussed in Section 5.3.1.3, *strike* typically has the preference with regard to the negative feature that occurs with the emotion nouns, although other types of emotion nouns can occur in Construction I of *strike* depending on the context.

Figure 5.1 Combinations of verbs and emotion nouns in [V [Emotion Noun] into NP] based on the BNC data



In short, the collocation units are classified into two types of the lexical specific patterns

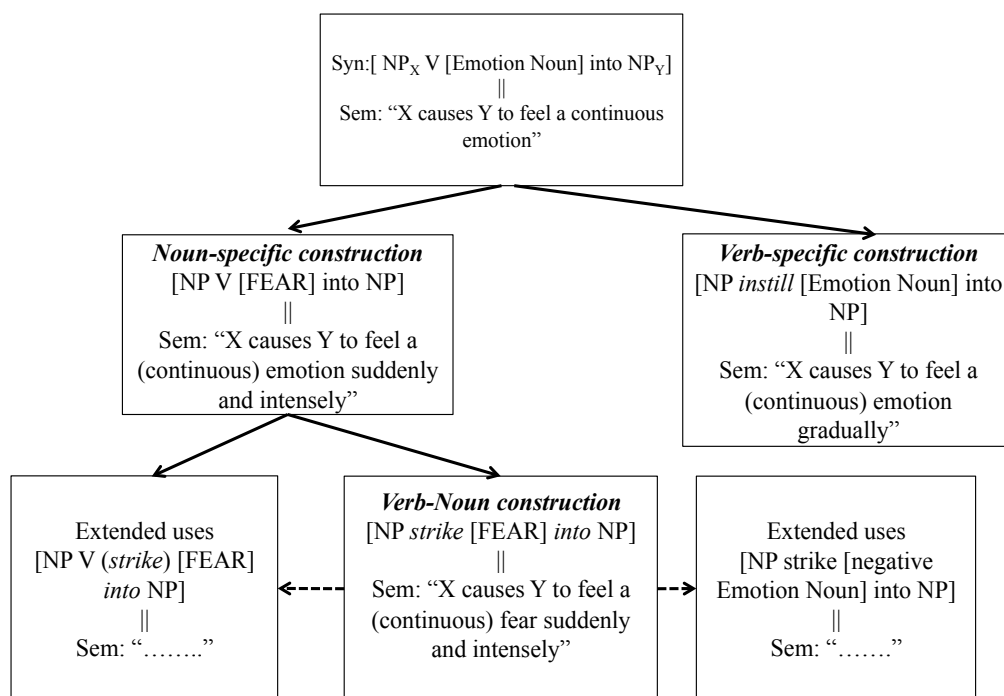
in terms of productivity: In one type, a definite verb serves to develop the productivity; conversely, in the other type, a definite emotion noun does so. These two types of lower-level constructions work on the narrow categorization. Even if the concrete expressions can contain any of a large range of emotion nouns, in fact, there are collocational preferences according to the practical data.

Based on the schematicity, Construction I is integrated into three types of low-level constructions. One type is *verb-specific constructions*, which play a role in determining its semantic regularities and sub-categorization (Iwata 2008). The verb-specific constructions, which the individual verb is associated with, combine various emotion nouns as a collocational pattern (e.g. *instill {fear/confidence} into NP*). The variation of emotion nouns takes precedence over the verbs among verb-specific constructions by virtue of the association with nouns imposed on by verb meanings. This suggests that the verb-specific constructions refract a certain range of preference of emotion nouns, as observed in Section 5.3.1.3.

The other type is concerned with the specificity of association with a particular noun: the *noun-specific constructions*. They are allowed to occur with the various verbs to some extent, as shown in the [V [FEAR] into NP] constructions. In fact, fear serves a typical and frequent object in the construction pattern [V [Emotion Noun] into NP]. Both types of lower-level construction capture the narrow regularities of particular collocational patterns and sanction full concrete instances. The schema varies with available degrees of abstractions in the case of Construction I. The verb-specific and noun-specific constructions are sanctioned by Construction I. Then, both of them sanction *verb-noun constructions* as the more concrete constructions: they share the specific meaning denoted by a particular verb and noun with a whole construction. Then, let us consider the hierarchical organization of Construction I focusing on the verb-specific constructions with *strike* and noun-specific constructions with *fear*. The relationships in Construction I can be shown as in Figure 5.2. For convenience, the semantics of extended uses are omitted, since they can be complex features with regard to various elements extracted by the verbs or nouns.



Figure 5.2 The hierarchical organization of Construction I

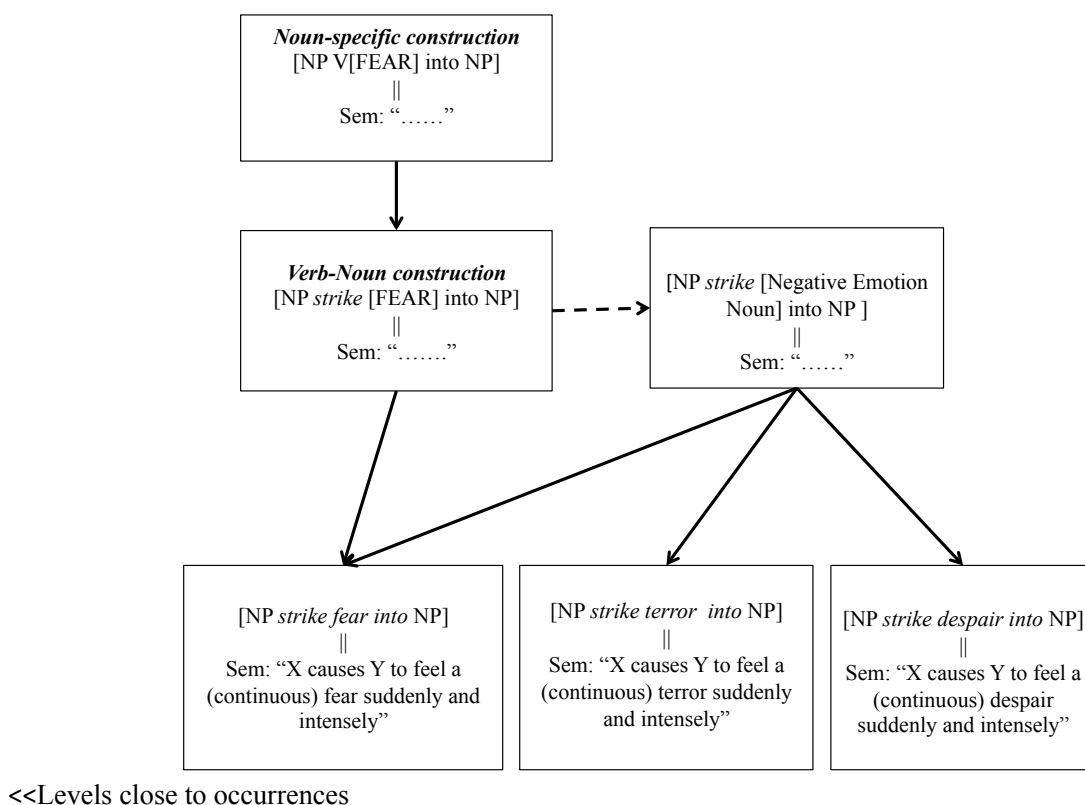


In the low level, the verb-noun constructions function as a central role to extend two types of collocations based on their frequency and analyzability. First, with reference to the role of *strike*, the expressions occurring with the negative emotion nouns such as *terror* and *trepidation* can be extended from the verb-noun constructions and directly inherited from the verb-specific constructions. Second, the fixed object associated with *fear* can influence the extended usages with other similar verbs apart from *strike*. The noun-specific constructions are linked with the verb-noun constructions as in Figure 5.2. In this way, the verb-noun constructions of *strike* and *fear* function as hubs of relevant lower-level constructions and concrete expressions. The extensions from the verb-noun constructions are expressed as dotted arrows at both sides. If the idiomatic patterns denoted by a particular verb and noun have a frequency that is high enough to be the source of extension and an analyzable form, this should play a role to link the interaction between the higher-level constructions and more concrete units of constructions. Basically, the verb-noun constructions are integrated into

both noun-specific and verb-specific constructions because of their analyzable elements.

Zooming up into the lower levels of the verb-noun construction and its extended uses, the verb-noun constructions [*strike fear into NP*] are employed as a source to extend the other lower-level constructions by one-to-one correspondence with regard to the nouns and verbs. The dotted arrow represents the relationship between verb-noun constructions and extended usages that occur with negative emotion nouns. The organization of verb-noun constructions is available in accounting for the semantic associations with the category of the given idiomatic constructions. The collocation unit of *strike* and *fear* is linked by both of the verb-noun constructions and extended usages because it overlaps since its abstractions are inherited from them.

Figure 5.3 The status of verb-noun constructions.



To sum up, the relationship of inheritance between the lower-level constructions and abstract-level constructions can be accounted for by the semantic commonality between

Construction I and caused-motion constructions as in Figures 5.2 and 5.3. Interestingly, caused-motion constructions play a comprehensive role for motivation to the metaphorical argument constructions.

### 5.3.2 Construction II

As discussed in Section 5.3.1, Construction I interacts with a limited range of emotion nouns at varying levels of abstraction. In this section, I will compare the semantic features of Construction II using the same lines of analysis used for Construction I.

#### 5.3.2.1 Emotion Nouns Occurring with Construction II

The emotion nouns in Construction II can be connected with a limited range of semantic features, based on the organization of the constructions. The corpus data from the BNC show that certain emotion nouns can be used in Construction II, as seen below. In (23), the construction occurs with emotion nouns that denote an extreme emotional state that prevents us from thinking under control. There seems to be a considerable semantic overlap between the emotion nouns appearing in (23).<sup>8</sup>

- (23)
- a. DJs are *whipping them into a frenzy* of anticipation from a stage perched above the masses.
  - b. You clever boy! she would cry, throwing her arms around him, and *sending him into a transport of joy*.
  - c. What she saw mirrored there *threw her into a panic*.
  - d. Chapman's famous translation of Homer, which *sent Keats into ecstasies*, is  
In twenty-four books, but they are contained comfortably in one folio volume.

As seen in Table 5.2, the emotion nouns are involved with an extreme feature that contains positive emotions such as *ecstasy* and negative emotions such as *frenzy* and *panic*.

Table 5.2 The distribution of emotion nouns in Construction II [V NP into [Emotion Noun]] in the BNC

Noun(s)	Number of Occurrences
frenzy	20
ecstasy	7
panic, rage	6
fury	5
outburst of anger, a transport of joy transports of delight, paroxysm of bliss perplexity, apathy, agitation	1

Actually, the dictionary definitions of emotion nouns such as *frenzy*, *panic*, and *ecstasy* show semantic extremes: *frenzy* is “a state of great anxiety or excitement, in which you cannot control your behavior (LDOCE)”; *panic* is “a sudden feeling of great fear that cannot be controlled and prevents you from thinking clearly (OALD)” ; and *ecstasy* is “a feeling of great happiness (OALD).” The data on the number of occurrences of these words show the existence of some group of lower-level constructions associated with emotion nouns of great intensity designated by extremeness. In terms of psychological dimensions, degrees of intensity are features of Construction II.

Note that the most frequent word, *frenzy*, can indicate either a positive emotion or a negative emotion in contrast with (24a, b). The example in (24a) is quoted from a news headline, which demonstrates that the fans get an extremely good feeling from hearing the new single. On the other hand, in the example of (24b), a negative emotion is regarded as a *frenzy*. In (24b), the fault in their guns causes the French aces to have a bad feeling like rage.

- (24) a. One Direction Send Fans Into *A Frenzy* With Surprise New Single ‘Drag Me Down’

(<http://www.mtv.co.uk/one-direction/news/one-direction-send-fans-into-a-frenzy-with-surprise-new-single-drag-me-down>)

- b. The faults of their guns drove the French aces into *a frenzy*; in the air, they jammed at critical moments; on landing, they had a nasty habit of firing unexpectedly, often shooting up ground crews. (BNC)

The point is that the co-occurrence restriction of extreme emotion nouns is correlated with the semantic specifications of Construction II. The contrasts in (25) show a similar semantic compatibility between Construction II and extreme emotion nouns. In (25a), *fear* expresses a general fear rather than an extreme aspect of fear, while *panic* denotes an extreme state. Likewise, *ecstasy* denotes an extreme state of happiness and corresponds to the semantic feature of the resultative construction.

- (25) a. The disaster threw us into {\*fear/\*terror/a panic}.
- b. The news sent me into {\*happiness/ecstasy}.

In addition to (25b), *delight* and *joy* can appear in Construction II if they are modified with the “transport(s) of” and “paroxysm of” degree modifiers. These phrases emphasize a more extreme emotional state, as shown in (26). The examples of (26) are adapted from the BNC. Similarly, the extreme emotions sometimes denote a state of madness such as *frenzy*, *fury*, *agitation*, and *perplexity*. Thus, the unacceptability of *joy* and *bliss* is due to the insufficiency of extremeness or an uncontrollable sense.

- (26) a. The letter threw her into {\*joy/a transport of joy}.
- b. The song sent everyone into {\*bliss/paroxysms of bliss}.

This contrast of (26) suggests that the emotion nouns denoting great intensity in

isolation can co-occur in Construction II by virtue of their semantic compatibility. Controllability should be distinct from intensity, but it sometimes interacts with intensity by virtue of cause and effect based on human world knowledge: the extremeness of emotion prevents people from controlling their thoughts. The degrees of uncontrollability in the emotion nouns are lexically specified as in (27).

- (27) a. People can think and behave calmly in {?? a panic/??a frenzy/?a fury}.
- b. People can control a feeling of {??panic/??frenzy/?fury/??transports of joy} completely.

In addition, the emotion nouns associated with Construction II might not specify the duration, but they are generally understood as a temporary emotional state in combination with Construction II. As in (28), Construction II describes the temporal feature of an emotion rather than a state.

- (28) a. The explosion threw the neighbors into a panic {?? for a long time / temporarily}.
- b. The DJ sent us into a frenzy {?? for a long time / temporarily}.

To summarize, the emotion nouns in Construction II denote an extreme emotion that influences an experiencer's thoughts and behaviors. In addition, the combination of the construction and a given emotion noun specifies temporality with regards to the duration of psychological events. Based on these observations, I will explore the role of constructions and inheritance from the generality of constructional semantics.

### 5.3.2.2 Inheritance from the Resultative Constructions

According to the semantic features of emotion nouns, Construction II can be associated with the semantic restrictions linked with basic constructional semantics. In fact, it is expected that *into* phrases in Construction II will share a variety of emotion nouns with the result phrase of resultative constructions. In what follows, I will compare the use of the result

phrase in phrases that feature the emotion nouns found in Construction II.

Several previous studies have emphasized that a resultative phrase indicates an “end point of a scale” type of constraint (Goldberg 1995, Vanden Wyngaerd 2001, Suzuki 2007, etc.). Most resultative adjective phrases are clearly bounded, referred to as non-gradable adjectives, and cannot co-occur with quantifying expressions, as in (29).

- (29) a. ? a little flat/smooth  
b. ? a little alive/dead  
c. ? a little asleep/awake
- (30) a. \*The bear growled us afraid.  
b. \*He encouraged her confident.  
c. \*He drank himself happy.

(Goldberg 1995: 195)

The other adjectives that do not function to indicate “boundedness” are unable to appear with resultative constructions even if the expression describes a pragmatically plausible event, as shown above in (30). The emotion nouns in Construction II show an extreme sense that is similar to the resultative phrase. Thus, Construction II is linked to the resultative constructions at the abstract level on the schematicity of constructions. Consequently, Construction II can be mapped onto the lower-level constructions in the hierarchy of resultative constructions.

### 5.3.2.3. Interplay of Emotion Nouns and Lower-Level Constructions

Now let us turn to the semantic features of the lower-level constructions in terms of psychological elements. The fixed collocational patterns that are found in combination with the emotion nouns are derived from the data (see (23)).

Construction II designates its own specific set of elements for its specific psychological event. Similar to the case of Construction I, lexical information provided by a verb is connected to the onset of emotion as well in Construction II. The causative verbs such as *send* and *throw* roughly restrict their co-occurrence with the emotion noun, as shown in (31).

Both *send* and *throw* show a common onset of emotion in a sudden manner.

- (31) a. It sent us into {a frenzy/a panic/ecstasies/a fury} (suddenly).  
b. It threw us into {a panic/ecstasies/a rage/a fury}(suddenly) .
- (32) a. The letter sent the wife into a frenzy {\*slowly/\*gradually}.  
b. What she saw mirrored there threw her into a panic {\*slowly/\*gradually}.

In addition to suddenness, (33) illustrates the specification of force. The difference between *send* and *throw* is predicated on the implication of forceful causation. The collocational patterns of *throw* lexically block co-occurrence with *weakly* as an antonym of *forcefully*, as in (33).

- (33) \*The picture threw us into {a panic/ecstasies/a rage/a fury}weakly .

Moreover, *whip* denotes a strong or violent development of emotion and naturally co-occurs with *frenzy* or *fury*, as shown in (34).<sup>9</sup> Likewise, as noted by Boas (2003), *drive* is patterned with negative emotion nouns such as *despair* in (35a), and the patterns do not typically associate with positive emotion nouns, as in (35b).

- (34) The boy's speech whipped us into {a frenzy/a fury}.
- (35) a. The news drove us into {a frenzy/despair}.  
b. \* The book drove us into {transports of joy/ecstasies}.

The conventional uses of verbs serve to describe the onset of emotion in a psychological event and to impose a limited feature on the negative emotional state like *drive*. Accordingly, Construction II is composed of several subtypes of lower-level constructions denoted by a verb. Based on the schematicity of constructions, the collocational combinations of a verb and emotion noun are understood as verb-specific constructions. Thus, verb-specific constructions exhibit a collocational preference in relation to emotion nouns and a semantic commonality with sentences that match Construction II. This aspect of Construction II should suggest that there is some resemblance to the general resultatives that have



idiosyncratic combinations with particular verbs (Goldberg 1995, Kageyama 2001, Boas 2003).<sup>10</sup>

#### 5.3.2.4 Representation of Construction II

Construction II sanctions the verb-specific constructions and inherits from the resultative constructions from views of low schematicity. The representation in (36) indicates Construction II, although its semantics may be roughly drawn. The slot of [Emotion Noun] is associated with the extreme element of the emotion. The verbs occurring in the constructions are limited, then V(erb) shows its specific onset of emotion and is denoted by a narrow group of causation verbs including *send*, *throw*, and *whip*.

(36) Syn: [ NP<sub>X</sub> V NP<sub>Y</sub> into [Emotion Noun] ]

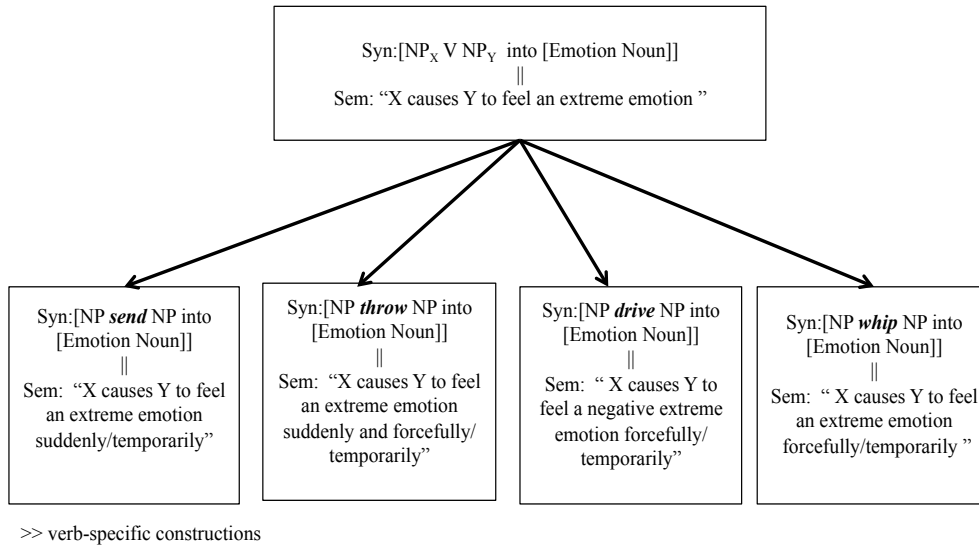
Sem: [ X causes Y to feel [extreme emotional state] temporarily]

X = Stimulus (Cause /Agent)

Y = Experiencer

At the lower level, the verb-specific constructions are sanctioned by Construction II, as in Figure 5.4. These collocational combinations of a verb and an emotion noun denote a specification for the psychological event. This suggests that each verb-specific construction is involved with a lower-level generalization and idiomatic combination.

Figure 5.4 Verb-specific constructions sanctioned by Construction II



Both Construction II and its lower-level constructions are linked to the abstract resultative constructions under the organization of resultative constructions. Then, the limited range of occurrence of the emotion nouns is reflected by the collocational restrictions. The combination of verb and emotions can be posited as a construction unit that characterizes generalities connected to the abstract constructions. The discussion so far has consisted of describing two similar types of constructions by allowing various levels of schematicity. Furthermore, it suggests that the distinctive treatment of caused-motion and resultative constructions is more valid than the integration of the resultative constructions through the detailed examination of Constructions I and II. The organization of the constructions is separately corresponded with abstract constructional semantics.

## 5.4 Conclusion

In this chapter, I have asserted two types of the lower-level constructions that can be accounted for in terms of semantic associations with the occurrence of emotion nouns at the further lower level and the higher level. A comparison between Constructions I and II

supposes a distinct treatment of the caused-motion and resultative constructions according to their basic semantics, against Goldberg and Jackendoff (2004).

I suggest that Constructions I and II are restricted by the higher-level schema of constructions since they indicate their common feature. The emotion nouns are limited to specific ones that denote a similarity of their schematic constructions. At the lower levels, in order to capture the lower-level generalities, verb-specific constructions and noun-specific constructions are posited under the hierarchy of Constructions I and II. The verb-specific and noun-specific constructions are combined with lexical semantic information directly. The verb-noun constructions also play a role to sanction the extended use under the levels of verb-specific and noun-specific constructions.<sup>11</sup> In short, these lower-level constructions can demonstrate the psychological semantic dimension like onset of emotion, degree of intensity, and duration.

Verb meanings play a role in designating psychological elements such as the onset of emotion and intensity. In both Constructions I and II, particular verbs occur with negative emotion nouns selectively: *strike* is combined with *fear-type* nouns; *drive* is combined with *despair*. Then, verbs like *throw* indicate the forceful manner of causing emotions, and that is regarded as intensity. The meanings of emotion nouns specify time concepts for the whole constructions. The emotion nouns occurring in the two constructions differ in terms of their time concept. Construction I is compatible with emotion nouns denoting a continuous feature; Construction II is compatible with the emotion nouns denoting a temporal feature relatively.

Finally, in my lexical-constructional accounts, it is essential that the position where the emotion nouns occur is related to the distinctive treatment of the resultative constructions. The caused-motion constructions designate the directional expressions, as in (37a), and then the resultative phrases evoke the abstract domain linked from the directional expressions in (37b). In Construction II, *into* phrases also evoke the same abstract domain, as in (38). In (38), emotions are commonly understood as a state mapped with location. On the other hand, Construction I is different from Construction II in that the emotion nouns appearing in the object evokes the abstract domain in (39), which is mapped to the moving entity metaphorically. The basic interpretations of emotion nouns differ between the two

constructions.<sup>12</sup>

- (37) a. Sam threw the ball *into the box*.  
b. Sam hammered the metal *flat*.
- (38) Questions about Dermot sent her *into a rage*. (BNC)
- (39) The baseball player struck *terror* into the hearts of the Australian people.

Therefore, the resultative constructions should be separated from the caused-motion constructions clearly. A comparison of Constructions I and II leads us to conclude that the resultative constructions are divided with the caused-motion concept in terms of their own construction specificity.

This chapter covered a large perspective on the two types of idiosyncratic constructions. Based on the present idea of the psychological constructions, in the next chapter, I will pursue the semantic interplay of the verb-noun constructions and lexical information under the hierarchical organization of constructions.

## Notes to Chapter 5

<sup>1</sup> An earlier version of this chapter was presented at the 32nd Conference of the English Linguistics Society of Japan, held at Gakushuin University in November 2014, and was later published as Nakao (2015a).

<sup>2</sup> We can see that examples such as *work oneself into a frenzy* appear to belong to Construction II. However, the property of the object is different from that found in Construction II. Therefore, these examples are essentially different from Construction II, as discussed in this chapter.

<sup>3</sup> Other questions about the large category resultative constructions are left open in this study. I argue that there is an interplay between the concrete expressions and the particular constructions types. I would like to consider the question of what types of constructions are contained in the resultative constructions at another time.

<sup>4</sup> The *drive crazy* constructions can be analyzed compositionally with respect to the meaning of *drive*. Seizi Iwata (personal communication) suggests that *drive crazy* constructions should not be strictly imposed on the negative state, since they only describe a metaphorical direction that leads to the final mental state by virtue of a basic sense of *drive* that denotes moving a car or making some similar vehicle go. Then, he points out that craziness or madness should be regarded as kinds of a result by motion. There might be room for more research for this point.

<sup>5</sup> [Emotion Noun] indicates an emotion noun phrase such as *fear*, *panic*, or *a scare* in this chapter.

<sup>6</sup> In the case of a conventional situation, change-of-state verbs can be allowed to occur in caused-motion constructions (e.g. *break the egg into the bowl*, *shred cheese onto the salad*)

(see Goldberg 1995, Rappaport Hovav, and Levin 1998, among others).

Still, it is difficult to characterize how the details of emotions are caused in an experiencer's mind by what has happened, simply by examining linguistic expressions (cf. Kövecses 1990).

<sup>7</sup> It is speculated that the acceptability of (22) is involved with world knowledge. The anthem is composed in order to be played at special public occasions. The combination of *anthem* and *pride and honor* must be viewed as it interacts with this situation.

<sup>8</sup> The occurrences with basic emotion nouns are found in the BNC. More research will be needed, including research on the possible combinations of emotion nouns. I would like to explore this topic in another analysis.

( i ) By nature, he was a gentle, sensitive man, [...] for he loved what the blacks call “selling wolf tickets,” *tricking people into fear*. (BNC)

<sup>9</sup> The construction of *whip someone into a frenzy* can entail both positive and negative emotions, but the onset of the emotion associated with *whip* emphasizes a forceful and violent manner.

<sup>10</sup> I would like to thank Yoko Yumoto (personal communication) for suggesting that the features of general resultative constructions are often heavily involved idiosyncratic constructions.

<sup>11</sup> Naoko Hayase (personal communication) points out that the verb-noun constructions might be posited as one variety of the lower-level constructions denoted by two kinds of constituents. For example, the verb-adjective constructions should be treated as idiosyncratic constructions in the case of *drive crazy* constructions.

<sup>12</sup> Sullivan (2013) suggested that the pattern of domain evocations of the metaphorical

resultative constructions can be listed closely. It should be mentioned that Constructions I and II are subcategories of the metaphorical resultatives based on her list, but some problems can arise in terms of the definition of the resultative constructions. I leave them open as they are yet to be solved.

## Chapter 6

### The Division of Roles among Nouns, Verbs, and Emotion Concepts: The Case of *Send [Shiver] PP* Constructions<sup>1</sup>

#### 6.1 Introduction

This chapter focuses on the semantic features specified by a fixed combination of words and by construction-specificity as seen in the idiomatic construction pattern [send [shiver] PP (directional phrase)] (= (1), (2)). The interpretation of (1) is not fixed, but can vary in terms of emotion type. As for (2), the emotion type expressed is specified by the emotion noun phrase. For example, we can interpret (1) as meaning, “to make someone feel delight” or add a phrase *of delight* with the [send [shiver] PP] pattern. These patterns can be defined as subtypes of caused-motion construction, which are formally structured in the same way as caused-motion constructions. They include one definite verb and a definite noun, and are regarded as one type of psychological construction: that is, Subject Verb Object PP (a prepositional phrase).<sup>2</sup>

- (1) a. That news sent shivers down her spine.  
b. The news sent shivers through us.
- (2) a. That voice sent a shiver of excitement through me.  
b. That voice sent a shiver of disgust up my spine.

I often refer to such constructions here as psychological constructions. The prepositional phrase in (1) and (2) co-occurs with a person or person’s body part, termed the Experiencer. That is “*shiver* (of [Emotion Noun]),” which appears as the object in (1) and (2), is a phrase that denotes an emotion or feeling captured as a moving entity<sup>3</sup> It can appear in the either singular or plural although its plural form can be used as an idiomatic pattern. According to the *Longman Dictionary of Contemporary English* (LDOCE), the



definition of “send shivers PP” is “to make you feel very frightened or excited.” In fact, the meaning of “send shivers PP” is similar to that of Experiencer-Object psych-verbs, and denotes not singularly definite but some prototypical emotion types. For example, the object can adopt various emotion types by adding an emotion noun phrase as shown in (3).

(3) a shiver of {fear/excitement/pleasure/anger}

However, example (4) illustrates that *calm* and *peace* are limited to the construction [shiver of [emotion noun]] in terms of their compatibility with the features of emotion types. In fact, this expression is constrained somewhat in the case of some anger types as shown in (5), according to my informants. Most emotion types appear to fit these semantic features, but some do not. To some extent, it can be predicted that certain emotion types can be expressed within the pattern [send [shiver] PP].

(4) \* a shiver of {calm / peace }

(5) His appearance sent a shiver of {\*calm/ ??anger/??rage} along my spine.

Here, with respect to the usage and meaning of [send [shiver] PP], two questions arise: What kind of emotion can occur with the pattern [send [shiver] PP]? Can the expression be treated as a type of caused-motion construction? Regarding these questions, this chapter identifies the extent of emotion types that follow this pattern, and analyzes a common semantic characteristic, which is association with cause of emotion, in the prototypical emotion scenario proposed by Kövecses (1990). We propose that [send [shiver (of [Emotion Noun])] PP] can be treated as a *verb-noun construction*. It can be specified by both the correlation between emotions and by constructional semantics and collocational restrictions of *send* and *shiver of*[Emotion Noun].

Section 6.2 overviews previous studies in terms of the metaphorical use of *shiver*. Section 6.3 points out that the meanings compatible with this pattern are limited to a certain range of emotion types and explores the psychological dimension of these

constructions. Next, Section 6.4 analyzes the differences between specific emotion types that are compatible with these patterns and other emotion types that are not. Moreover, it suggests that the specific semantic features of psychological caused-motion constructions require cause and effect for the occurrence of an emotion, which has been referred to as the “prototypical emotion scenario” by Kövecses (1990). The emotion scenario is correlated with the semantic feature of caused-motion constructions. Section 6.5 then considers the organization of [send [shiver] PP] constructions in the low degrees of schematicity and analyzes how caused-motion constructions are related to [send [shiver] PP] constructions. Section 6.6 concludes this section.

## 6.2 Previous Studies

Previous studies have focused on the usage of shiver (as a verb or noun), as it relates to metaphor or metonymy and with the bodily effect of emotions. This section will provide an overview of the observations and analyses that are relevant to [send [shiver] PP] patterns, although previous studies have not demonstrated the extent of emotion types or the categories of metonymy in sufficient detail.

Lakoff (1987) observes the conventional expression of one type of primary emotion, i.e., anger, in the cognitive view of metonymy and metaphor. His study offers several points related to shiver, which is designated a psychological expression, and refers to folk theory, yielding a system of metonymies for anger. One observation regarding such metonymy is that “the physiological effects of an emotion stand for the emotion” (Lakoff 1987: 382).

(6) She was shaking with anger.

(Lakoff 1987: 382)

Other body effect words take other emotions than anger, metonymically. Kövecses (1990) offers further analysis of those expressions. He suggests that the interpretations of example (7) are not limited to any specific emotion, and that they can describe a variety of responses associated with a high level of physiological arousal (Kövecses 1990: 168).

For example, the examples in (7) can be interpreted as multiple kinds of emotion.

- (7) a. I stood there trembling with emotion. (Kövecses 1990: 168)  
b. Shivers ran up and down her spine. (Kövecses 1990: 168)

Thus, it is necessary to examine certain specific emotion types more deeply with respect to [send [shiver] PP]. The next section will explore the usage and specific features of the emotion types used in this pattern.

### 6.3 Analysis of the Usage of [Send [Shiver] PP]

This section will discuss the fixed combination of *send* and *shiver*. The main point is that the emotion types of [send [shiver] PP] depend on the features of *send* and *shiver*. These emotion types designate a sudden and quick onset of emotion and intensity, such as physical agitation.

#### 6.3.1 Specific Usage of *Send*

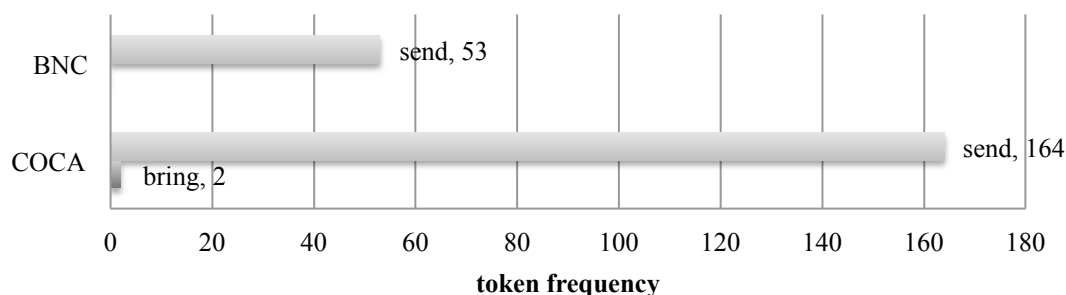
This section argues that the idiomatic collocation of *send* and *shiver* can be attributed to their semantic compatibility with the total meaning of the [send [shiver] PP] constructions.

First, let us consider the usage of verbs. It seems that the verb *send* is likely to occur with this construction pattern as demonstrated in the previous examples in Section 6.1. It is striking that *send* is overwhelmingly fixed in usage unlike other similar verbs that appear in the pattern [V [shiver] PP]. Occurrences with some similar caused-motion verbs are excluded as below:

- (8) a. The news {sent/\*moved/\*threw/\*carried} shivers down her spine.  
b. The news {sent/\*moved/\*threw/\*carried} shivers through the people.

In addition, data from occurrences in the British National Corpus (BNC) and the Corpus of Contemporary American English (COCA) plot the same assumption, as follows:

Table 6.1 Distribution of verbs occurring with [V [shiver] PP] in the BNC and COCA



As illustrated, *send* is the most frequent verb to occur in the pattern [V [shiver] PP]. Since *send* extends to various usages, the pattern [V [shiver] PP] also applies to the metaphorical sense in addition to the basic caused-motion sense. The metaphorical use of *send* designates the sudden or quick onset of manner as in (9) and (10). The *Oxford Advanced Learner's Dictionary* (OALD) offers as one definition of *send*, “to make something/someone move quickly or suddenly.” The sudden sense is modified with the onset of the event, and then the quick sense is modified with the process of the event.

(9) The 7-1 hammering sent shockwaves around the world [...].

(<http://eplindex.com/56082/brazil-holland-preview-fifa-world-cup-2014-place-playoff.html>)

(10) The report sent share prices down a further 8p. (OALD)

On the other hand, *send* denotes various transfer events and a transfer is mapped onto causation in an abstract domain.<sup>4</sup> This specific usage of *send* may denote causation as a metaphorical transfer in addition to a sudden and quick sense. With reference to the psychological elements, the sudden sense is the featured onset of emotion.

Similarly, [send [shiver] PP] patterns are only available to the complete psychological event when construed as a one-shot event. The sentences in (11) and (12) below have a similar meaning because they are not compatible with slowness. Furthermore, one can neither interpret Bill as having felt frightened by one new item at a time or that he came to feel frightened gradually.

- (11) The news sent shivers through Bill {quickly/suddenly/?? slowly/?? gradually}.
- (12) \*The news sent shivers down people's spines slowly and slowly.

Moreover, *send* should have a function that is involved with the total meaning of [send [shiver] PP]. In fact, the usage of *send* in (13a), taking some emotion noun as a moving object, is compatible but it is likely that the *shiver* phrase in the object position is associated with the construction pattern, as illustrated in (13b).

- (13) a. His death sent sadness through his neighbors.  
 b. ? His death sent a shiver of sadness through his neighbors.

What distinguishes (13a) and (13b) is the nature of the *sadness*. Example (13a) works well because *sadness* can come upon us suddenly and quickly. However, in (13b) it is difficult to associate the whole semantics with *sadness*. Based on the collocational preference of *shiver*, sadness is not likely to be associated with the cause of shivering. Thus, *send* plays the role of determining the psychological elements associated with the onset of emotion. Based on the verb meanings, [send [shiver] PP] patterns are compatible with the sudden onset of emotion (cf. Chapter 5).

### 6.3.2 The Role of *Shiver*

Next, I focus on the specific role of *shiver* in the construction pattern. As (14) shows, *shiver* can co-occur with various emotion nouns. In particular, the collocation phrase [shiver(s) of *anger*] is found as one instance in the BNC, as in (14b). However, some static emotions are not associated with the meaning of agitation that *shiver* shows in (15).

- (14) a. Juliette could not walk by the room without a shiver of disgust.  
 b. Then Shelley felt a shiver of anticipation [...].  
 c. [...] I gave a shiver of anger.

(all from BNC)

- (15) a. a shiver of {fear/anger/disgust/pleasure/excitement/relief}  
b. a shiver of {\*calm/\*peace/?sadness/?gloom/?depression}

The contrast demonstrates that the phrases with emotion nouns in (15b) sound less natural than the phrases with emotion nouns in (15a), which can be expressed as agitation co-occurring with [send [shiver] PP] constructions.<sup>5</sup> The emotion nouns that can occur with *shiver* denote a sense of intense emotion and a shift from another psychological state.<sup>6</sup> The literal sense of *shiver* is an external body movement that is caused by intense cold or fear, so it necessarily implies intensity and dynamism. The duration of the expression is concerned with the momentary sense of *shiver*. This construction implies that the duration is usually short since time phrases such as *for a long time* do not seem to occur with it. However, the interpretation of duration is sometimes flexible based on context and world knowledge. The psychological demotions are associated with semantic elements composed of the [send [shiver] PP] constructions, as addressed in Chapter 3. Therefore, *shiver* plays a role in specifying intensity with a limited range of emotion types. In total, the construction [send [shiver] PP] specifies a sudden onset of emotion, an intensity and short duration owing to *send* and *shiver*.

However, *anger* cannot occur in [send [shiver] PP] constructions even if it can occur in the “shiver of NP” form. The difficulty with using anger nouns (see (5)) suggests that the object requires another critical element in order to analyze the emotion types expressed with [send [shiver] PP]. In the next section, we will analyze emotion types more closely. Some idiosyncratic constraints on the use of constructions should interact not only with a particular verb and noun, but also with the interpretation of the constructions.

#### **6.4 Specific Features of Emotion Types on the Construction Pattern**

This section discusses that the entire meaning of the constructions is a factor in determining some specific semantic element of emotion types. It is then expected that the

specific emotion type of [send [shiver] PP] can be found by closely analyzing the compatibility with [send [shiver of [Emotion Noun] PP] and the meanings of the entire construction.

#### **6.4.1 Observation and Analysis Based on the Corpus Data**

In order to observe the practical data of [send [shiver] PP] constructions, let us introduce several examples of [send [shiver of [Emotion Noun] PP] from the BNC and COCA searches. The kinds of emotion noun that co-occur with these constructions can be predicted (see Section 6.3.2). The following table classifies the main emotion categories and types. As shown in Table 6.2, various basic emotion types, apart from anger and sadness, are available to occur with the [send [shiver] PP] pattern. Note that in the line showing the basic emotion category in Table 6.2, below, nouns of *fear*, *disgust*, *happiness*, and *desire* are found in the examples from the corpus data. However, other basic emotion nouns such as sadness and anger are not found in either the BNC or COCA. The tendency of emotion types that can appear in both the BNC and COCA should correspond with the investigation in Section 6.3.<sup>7</sup>

Table 6.2 Classification of the availability of emotion categories and types with the construction of [send [shiver of emotion noun] PP]<sup>8</sup>

	NEGATIVE				POSITIVE		Others
Basic category	SADNESS	FEAR	ANGER	DISGUST	HAPPINESS	DESIRE	OK
Availability	??	OK	??	OK	OK	OK	
Occurrences of [shiver of [Emotion Noun]] in the BNC and COCA	No example	fear terror trepidation	No example	disgust revulsion	delight pleasure	desire longing	excitement concern apprehension anxiety

Note the instances shown in (16). They illustrate the availability of other kinds of emotion types in addition to the typical ones. Those instances designate that [send [[shiver] of emotion noun] PP] can express intense emotion types to some extent.

- (16) a. ‘I’ll make time,’ [...] softly with a half-smile that sent shivers of delight along her spine.  
b. She was trembling slightly now, and furious with herself, but somehow his height and his blatant masculinity were sending shivers of trepidation down her spine.  
(above from BNC)  
c. The curling tongue, prodding my flesh, sent shivers of revulsion across my body.  
(COCA)

According to the result of this corpus data, some limited emotion types exhibit the possibility of co-occurring with the construction. With respect to the intensity of emotions,



nouns that denote basic emotions can appear in the construction patterns: intense happiness or delight in (16a); intense fear or trepidation in (16b); intense disgust or revulsion in (16c). Notably, it can be observed that multiple emotion types are expressed, as illustrated in (17). The sentence in (17) shows that [send [shiver] PP] constructions sometimes designate two emotion types simultaneously. Furthermore, basic emotion types, such as *excitement* and *anxiety* also occur in this pattern, as can be seen in (18).

- (17) [...] the pending departure of virtually all the highest ranking executives has sent shivers of hope and fear through the ranks of workers below them. (COCA)
- (18) a. These rumblings sent shivers of apprehension through civil rights backers [...]. (COCA)
- b. The knowledge that he was being followed sent a shiver of excitement through him [...]. (BNC)

From this, we can draw out two points regarding the compatible relationship between emotion types and the [send [shiver] PP] construction patterns. First, categories of sadness and anger are possibly incompatible with the meaning of the construction pattern. As shown in the previous section, sadness nouns rarely appear in this pattern. Table 6.2 indicates that some emotional features including sadness are incompatible with the meaning of the [send [shiver] PP] construction. In fact, anger nouns are not observed with [send [shiver] PP] in either of the corpora. Anger type is still somewhat restricted to constructions that use the anger noun category as in (19).

- (19) ??The case of murder sent shivers of {anger/rage/fury} down my spine.

Second, emotion type nouns that can appear in the [send [shiver of Emotion Noun] PP] patterns do not denote a static psychological state, since the emotion does not appear in [[shiver of NP] forms. There seem to be two classes of noun in the happiness category, one that does occur with this construction pattern and the other that does not naturally do so. This difference arises due to either the intensity or stativity of each happiness emotion

type, as illustrated by the following contrast:

(20) The news sent shivers of {joy/pleasure/delight/\*felicity/\*calm} through us.

Therefore, this phenomenon suggests that co-occurrences with emotion nouns depend on the semantic features of each emotion type regardless of category. To extend the discussion further, we consider why anger nouns are rarely compatible with [send [shiver] PP] construction patterns in the next section.

#### **6.4.2 Characterization of Emotions in Relation to the “Prototype Scenario”**

This section examines why [send [shiver] PP] constructions are not compatible with anger. Kövecses (1990) suggests that the “prototype scenario” of emotion can be described and arranged in the way time flows, as a cognitive model of emotion as stated in Chapter 3. A subpart of the “prototype scenario” seems to correspond to the semantic feature of [send [shiver] PP]. This section aims to ascertain how the features of the [send [shiver] PP] construction pattern associate with the stages of the scenario, and to compare the case of anger type with that of compatible emotion types in terms of psychological caused-motion constructions. The following flow of emotion presents the scenario explaining the prototype of emotion in Kövecses (1990):

- (21)
- a. State of emotional calm
  - b. Cause
  - c. Emotion exists
  - d. Attempt at control of action
  - e. Loss of control
  - g. Action
  - h. Emotional calmness

(Kövecses 1990: 184-185)

Kövecses points out that part of the emotion structure in (21) corresponds to the

causal structure: the stage from (21b) to (21c) shows the cause-effect relationship. As Kövecses states, “there is also a causal structure built into this, which lends the concept of dynamic character. Obviously the cause produces the emotion” (Kövecses 1990: 184).

At the same time, the core meaning of [send [shiver] PP] indicates a causal structure: it denotes that something or someone causes someone to feel a sudden and intense emotion. Note the stage of causes in (21b). It seems that prototypical emotion occurs suddenly, moving as an object into an Experiencer (a psychological subject, S), and that the Experiencer is passive to the emotion, as shown in (22)

- (22)
- a. Something happens to S.
  - b. The event is external to S.
  - c. The event disturbs S.
  - d. The event exerts a sudden and strong impact on S.
  - e. Emotion comes into existence.
  - f. S is passive with regard to the coming into existence of emotion.

(Kövecses 1990: 184)

Apparently, the anger scenario can be exhibited as a similar flow to that of the prototype of emotion scenario as shown in (23):

- (23)
- a. Offending event
  - b. Anger
  - c. Attempt at control
  - d. Loss of control
  - e. Act of Retribution

(Kövecses 1990: 67)

However, with a closer look at the cause of emotion, the Offending Event in (23a) differs from the cause of the prototypical emotion. Kövecses (1990) discusses that the direct cause of anger arises not in the external event but in the internal, increasing its force in the

human body as a container. The offending event incurs some processes according to Kövecses's model (1990): a wrongdoer intentionally does something directly to the Experiencer. The offending event displeases the Experiencer, constitutes an injustice, and invokes anger in him or her. Based on the scenario in (23), the anger concept seems to be caused simply by the offending event. The experiencer considers the causing event an injustice in the process. Based on the scenario of anger, English speakers do not interpret a direct cause of anger as an external causing event. Anger is metaphorically internal and emerges from within based on its likelihood of occurrence with expressions such as *Anger makes his blood boil* (cf. Ungerer and Schmid 1996). On the other hand, the psychological caused-motion constructions express an external cause and effect. Contrary to this, anger is not likely to be used for caused-motion construction patterns to express the psychological causative reading.

#### **6.4.3 Focus on the Stages of the Scenario between Different Emotion Types**

As shown in the previous sections, anger type nouns are not likely to co-occur with psychological caused-motion constructions. Nevertheless, anger type nouns can appear in the form of caused-motion constructions to express intense anger to someone.

Next, the features of psychological caused-motion constructions will be accounted for by applying the emotion scenario. The form of caused-motion constructions that occur with an emotion noun as a direct object can select two associations with one distinctive stage in a scenario. The psychological caused-motion constructions are linked with "Cause of Emotion" in the scenario of (21e) by allowing a systematic metaphor of "Causal Events as Transfers" (Goldberg 1995: 145).<sup>9</sup> This metaphor motivates [send [shiver] PP] constructions with the basic sense of *send*, which relates to moving something from one place to another by means of transfer (Pinker 1989: 110; Levin 1993: 133). On the other hand, the expression in (30a) is related to the "conduit metaphor," which involves communication *traveling* from a speaker or stimulus to a listener (Reddy 1979; see Goldberg 1995). The concept of anger is associated with the stage of "Action" of the anger scenario to express the anger (see (23e)).

Observe the difference in the metaphorical links between the following sentences in

(24). Caused-motion constructions with anger nouns describe that the anger is directed toward someone, as in (24a). In (24), the nature of the subject takes on a distinct character: the subject of (24a) is a person who speaks or acts out of anger, i.e., an Agent, and the subject of (24b) is a stimulus for fear, i.e., a Cause.

- (24) a. The man put his anger into us.  
b. The man put fear into us.

As in (25a) below, the other instance associated with *anger* behaves similarly to sentence (25a). With reference to the anger scenario (see (22)), *vent* indicates one part of the scenario lexically, i.e., the Action. (25a) can be paraphrased then as (25b). The participant in the “Action” of the anger scenario includes the expresser of the emotion, as one psychological element, because the focus on the part of the scenario is different from the case of other emotions: the subject in (25) is understood as an Expressor of emotion, which is referred to as Emotion Frames of FrameNet (see Chapter 3).

- (25) a. John vented his anger on his mother.  
b. John expressed his anger forcefully toward his mother.

In short, anger type nouns cannot occur in psychological caused-motion constructions that do not license the metaphorical link with the use of such constructions of (25a). Fear demonstrates its likelihood of occurrence with the Expressor in (26), but its use is less common .

- (26) John vented his fear on his mother.

Focusing on emotion metaphors, Stefanowitsch (2006) reveals that a metaphor of EMOTION IS DIRECTED AT SOMEONE as in *X vents fear ON Y*, with fear occurring less frequently than with anger, based on his corpus-based approach. This result implies that anger can more frequently be associated with expressions. The distinction of

understanding emotions affects the likelihood of occurrence with specific emotion nouns. The way to understand emotions is involved in the construction-specific semantics of psychological constructions. Thus, psychological caused-motion constructions including the [send [shiver] PP] construction seem to allow multiple interpretations by their co-occurrence with emotion noun types: one, expressing the cause of an emotion, the other, expressing the presentation of an emotion to other people. It also appears that anger nouns are restricted by semantic compatibility in part of the scenario.

## **6.5 The [Send [Shiver] PP] Construction as a Lower-Level Construction**

### **6.5.1 Representation of the [Send [Shiver] PP] Construction**

As noted, the form [send [shiver] PP] can be designated as one type of caused-motion construction, which does not follow the same pattern as typical caused-motion constructions (cf. Goldberg 1995). Certainly, the features of the subject differ between typical caused-motion constructions and [send [shiver] PP] patterns insofar as the semantic role of a subject cannot be expressed as the Agent in a typical caused-motion case but can be expressed as Cause in a psychological case. In the instance of (27a), the subject can be a person, but he must not act on Bill on purpose, compared to (27b): the subject of [send [shiver] PP] must denote Cause.

- (27) a. \*The man (deliberately) sent shivers through Bill.  
b. The news sent shivers through Bill.

In other words, the subject can only be read as non-agentive in [send [shiver] PP] constructions.<sup>10</sup> Based on these phenomena, it is likely that the construction denotes static emotion types to some extent. In contrast, the dynamic sense is attested by the example of a pseudo-cleft sentence as follows:

- (28) What the news did was send shivers through the people.

Example (28) indicates that [send [shiver] PP] constructions have a non-stative or dynamic psychological sense. This sense expresses the specific features of the construction pattern.

Thus, summing up the [send [shiver] PP] constructions can be shown simply as in (28). First, at the lower level of caused-motion constructions, they are captured as verb-noun-specific constructions. They are divided into two detailed types of object: the *shiver* type and the *shiver* of [Emotion Noun] type. The former is not specified in terms of the reference of an emotion, while the latter shows a particular emotion. Individual occurrences with various emotion nouns are included in (29). In the semantics of (29), *send* and *shiver* influence the total meaning of the construction, but the unlikelihood of emotions such as anger occurring is based on the constructions. By abstracting these constructions, a *verb-noun construction* arises in which occur combines *send* and *shiver* in the form of [NP V NP PP]. The relations to variants of the lower-level constructions are illustrated as in Figure 6.1.

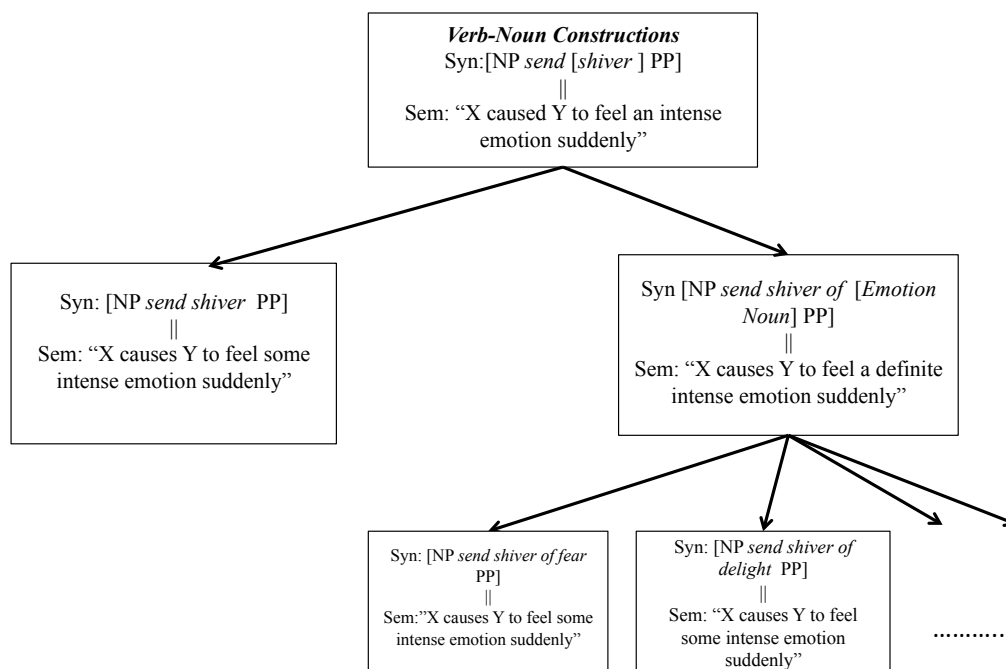
(29) Syn:[ NP<sub>X</sub> send [shiver] PP<sub>Y</sub>]

Sem: X causes Y to feel an intense emotion possible to express a cause and effect, which can be caused suddenly

X = Stimulus (Cause)

Y = Experiencer

Figure 6.1 Organization of the [send [shiver ] PP] constructions



As in Figure 6.1, the [send [shiver] PP] constructions have unit status indicating a narrow range of productivity and low degree of schematicity. The expressions involved with emotion nouns like *shiver of {fear, excitement, pleasure}* are sanctioned by the verb-noun constructions. The verb-noun constructions have idiosyncrasy as specified by verbs and nouns, and preferences for emotions: they exhibit a limited generality and work as one category to serve the specificity of words and constructions. Attention to further lower-level constructions is abstracted gradually and step by step from the concrete individual expressions, which are not shown in Figure 6.1.

### 6.5.2 Valid Low Degrees of Schematicity of Constructions

Next, let us consider the relationship of schema-instance between the verb-specific constructions denoted by *send* and [send [shiver] PP] constructions. If the [send [shiver] PP] construction is captured as a verb-specific construction of *send*, the form of [NP *send*

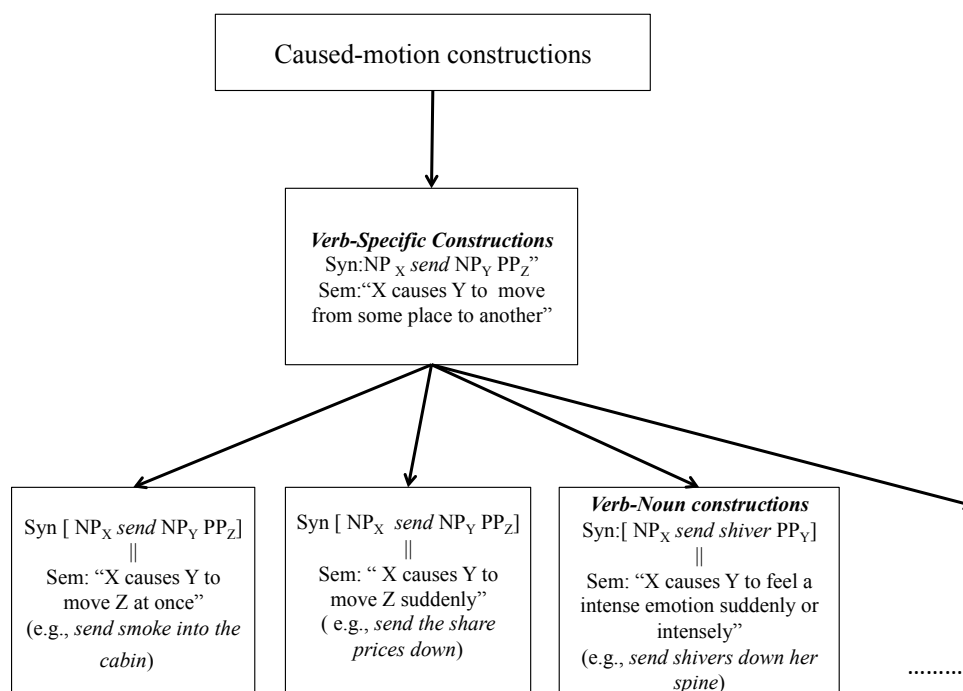


NP PP] covers expressions of various caused-motion events, and its semantics do not specify the significant property of the NP. The use of *send* is shown to compose one subtype of *verb-specific construction*, although there are various usages of *send* in other caused-motion constructions, including both a literal and abstract Object, as shown in (30).

- (30) a. The blaze *sent* smoke over much of the city. <literal Object> (LDOCE)  
b. They *sent* share prices down about 6 percent. <abstract Object> (OALD)

In the case of (30), a particular noun plays a role in designating a more concrete individual event. The verb-specific constructions are useful to capture the common usage of *send*. The sentences in (30) share the sense of moving something quickly using *send*. In (30a), *send* specifies moving smoke at once or instantly, so that the sentence indicates that smoke is produced by the blaze instantaneously and moved over the city. In (30b), the sentence expresses the sudden drop in share prices by virtue of the use of *send*. The [send [shiver] PP] constructions are then regarded as one member of the verb-specific construction of *send* with reference to their semantic features. In fact, *send* specifies a central abstract meaning of caused-motion events and is cleared by association with nouns when appearing as the object. The occurrences with *send* are integrated into the verb-specific constructions in a bottom-up way. These lower-level constructions with *send* are involved in the schematic semantic meaning of caused-motion constructions by virtue of the features of *send*. Therefore, [send [shiver] PP] constructions should be posited immediately at the lower-levels. In this case, the verb-specific constructions should not make use of the sufficient detailed meaning of constructions. Rather, the combination of *send* and various concrete Objects are identified and grouped as a valid schema in categorizations. This network of [send [shiver] PP] constructions is shown as follows:

Figure 6.2 Network of Verb-Noun constructions of [send [shiver] constructions]



The network between [send [shiver] PP] constructions and correlated construction schemas is shown in Figure 6.2. Let us observe the various abstractions with low degrees in Figure 6.3. The verb-specific constructions of *send* sanction deals between varieties of caused-motion construction, including those denoted by a sudden and quick sense of *send*. In the same way, the verb-specific construction designating a psychological use is extended from the verb-specific constructions of *send*, as the metaphorical extensive relation is connected from the upper box of the verb-specific constructions. Moreover, at the same level as [send [shiver] PP] constructions, some units composed of *send* and a particular NP are sanctioned by the verb-specific constructions of *send*, as illustrated in Figure 6.2. At an abstract level, the features of constructions interact with the semantics of [send [shiver] PP] constructions based on their inheritance linking. The [send [shivers] PP] constructions are characterized as a subtype of caused-motion constructions from a large perspective. Given the organization of caused-motion constructions, they can be treated as an idiomatic collocation but also as a subtype of caused-motion construction.

The significance of verb-noun constructions is concerned with accounting for specific behaviors with a definite combination of a verb and noun rather than one definite verb.

## 6.6 Conclusion

This chapter has discussed the semantic character of one type of psychological caused-motion construction, [send [shiver] PP], in terms of emotion noun types involved with the emotion scenario as discussed by Kövecses (1990). The various emotion types of [send [shiver] PP] constructions correlate the lexical meaning of *send* and *shiver*, and interact with specific emotion concepts of psychological caused-motion constructions. These emotion types designate particular psychological elements, a sudden onset of emotion and intensity based on the lexical information of *send* and *shiver*: Developing this discussion, this suggests that this feature of emotion types for [send [shiver] PP] constructions corresponds to part of the prototype scenario (Kövecses 1990), based on the metaphor of causation. There is a flexibility in regarding the emotions as a causative structure. However, this analysis suggests that constructions and word meanings interact to compose the semantics in full, based on their occurrences with emotion nouns. In addition, we introduce how the [send [shiver] PP] constructions play a role as verb-noun constructions, positioned at a lower status than verb-specific constructions.

This study suggests that the semantic features of idiosyncratic constructions are treated as lower-level constructions by examining the combination of a particular verb and noun. Their individual co-occurrences indicate the semantic features inherited from the superordinate constructions. Thus, these collocational preferences must be represented in a grammar (cf. Croft 2001). The narrow range of constructions such as verb-noun constructions can illustrate the semantic interplay between verbs, nouns, and abstract schematic constructions. Therefore, the collocational preferences for verbs and nouns suggests that valid low levels of schematicity can be captured as a construction unit to account for the sufficient features.

## Notes to Chapter 6

<sup>1</sup> An earlier version of this chapter was presented at the 39th Annual Conference of Kansai Linguistic Society held at Osaka University in June 2014, and published as Nakao (2015b).

<sup>2</sup> The body part words are used in collocational phrases such as along, up, and down one's spine of [send [shiver] PP] patterns. They must describe the part where physical agitation occurs. Thus, the PP is taken as one type of Oblique-Experiencer (cf. Landau 2010).

<sup>3</sup> There are two variations of the [send [shiver] PP] patterns in terms of *shiver*. However, there are not notable differences in distinctive semantic features. It is speculated that intensity and duration might be concerned with the form of *shiver*.

- ( i ) a. The thought sent a shiver down my spine. (COCA)
- b. A strange poem that sent shivers up her spine - haunted her. (COCA)

<sup>4</sup> I am grateful to Yoshiyuki Kinouchi for suggesting that the basic semantics of *send* indicate transfer rather than motion of object. The [send [shiver] PP] constructions must be associated with causation metaphorically extended from transfer.

<sup>5</sup> I am grateful to Takanori Demizu for giving me an insightful suggestion about the usage of *pervade*. The co-occurrence with *pervade* distinguishes two types of emotion noun. Such emotion nouns as those seen below are unlikely to be associated with the verb meaning of *pervade* as shown below:

- ( i ) a. ? The {pleasure/fear/disgust} pervaded my town.
- b. The {gloom/calm/depression} pervaded my town.

<sup>6</sup> Web searches yield hits for the emotion nouns as in (15b) although the BNC does not contain these expressions. For example, *rage* and *fury* do not appear with shiver of [Emotion Noun]. In fact, the expressions of shiver of [Emotion Noun] can stretch the usage under some specific contexts.

<sup>7</sup> I define the basic emotion category with reference to Kövecses (1990, 2000) and Johnson-Laird and Oatley (1989).

<sup>8</sup> My informants' insights are compatible with the corpus data. In Google Books, 11 occurrences of [send [shiver of *anger*] through NP]. (Search conducted on November 25, 2015) The given context should influence a range of emotion types expressed with [send [shiver] PP]: *anger* denotes multiple meanings including negative emotions similar to *rage*, and *frustration*.

<sup>9</sup> This metaphor not only motivates the psychological caused-motion construction. Goldberg (1995) points out that a particular conventional systematic metaphor “causal events as transfers” covers the ditransitive constructions and other causal constructions such as those following:

- (ii) a. She gave me the flu. (Goldberg 1995: 144)
- b. The document supplied us with entertainment. (Goldberg 1995: 144)

<sup>10</sup> In addition, the instances from both the BNC and COCA present the same phenomena as this construction: the subjects play a causal role only.

## **Chapter 7**

### **Conclusion**

#### **7.1 Summary**

This thesis has been concerned with analyzing the semantic interplay of verbs, emotion nouns, and psychological constructions within a lexical constructional approach. Before concluding this thesis, I summarize below the discussion of psychological constructions in favor of a usage-based view.

Chapter 1 introduced psychological constructions and presented an outline of the thesis, mentioning the main research objectives of each subsection. Chapter 2 presented a review of the essential ideas of Construction Grammar, proposed mainly by Goldberg (1995, 2006), and the revised version known as the lexical-constructional approach. An advantage of Construction Grammar is that various linguistic expressions are regarded as constructions: not only general patterns but also idiosyncratic patterns can be accounted for systematically by the motivation for the constructions. For example, Goldberg (1995) proposes that systematic metaphors are linked to ditransitive constructions and that the relation between them is captured as one kind of inheritance, namely metaphorical extension links. Thus, I adopted Construction Grammar theory in this thesis, as psychological constructions are involved in abstract spatial relations. Whereas this approach allows for a flexible and practical account of psychological constructions, it is problematic with regard to detailed examination of the interactions between verb meanings and constructions. Goldberg (1995) proposes peculiar constructional constraints on the acceptance of verbs. However, Goldberg's (1995) account is not sufficient to capture the nature of such constructions because semantic constraints on individual occurrences of constructions do not apply effectively. Constructional semantics posited by Goldberg (1995, 2006) is too general to capture the individual occurrences of constructions, which interact with frequency and collocational preferences. Thus,

fine-grained semantic accounts, focused on lower-level constructions following a usage-based view, are required for Construction Grammar.

In order to explicate the relations between words and constructions, I followed a more explanatory version developed by Nemoto (1999), Croft (2003, 2012), Boas (2003), and Iwata (2008): lexical-constructional approaches. To begin with, I explicated the ecological properties of constructions: they are characterized as either central properties or peripheral properties motivated by the central ones. With the focus on one construction, the relationship between a construction schema and its instances is captured by abstraction. Croft (2003) and Iwata (2008) propose the schematicity of constructions by allowing a usage-based approach. In particular, Croft (2003, 2012) and Iwata (2008) assume that verb-specific constructions are posited as basic lower-level constructions. Verb-specific constructions exhibit the specific events denoted by one verb, which is compatible with constructional specific semantics. Nemoto's (1999) analysis of *kick* confirmed that verb meanings include detailed aspects that may be compatible with a range of constructions denoted by a particular verb *kick*. Such previous studies reveal that constructions are composed of a type of schematicity in terms of ecological relations, and that lower-level constructions directly associated with verbs account for the specific features of the practical instances of such constructions. Accordingly, the lexical constructional accounts can overcome the problems of the earlier constructional approach of Goldberg (1995, 2006) and capture the semantic features of a range of constructions by means of schematicity.

Chapter 3 reviewed the relevant analyses with reference to psychological verbs and cognitive semantic perspectives. I began by setting out the similarities between causative psychological verbs and psychological constructions with regard to the properties of subjects and causal structure. In some studies, the structure for psychological verbs is conceptualized as extended locative relations. In particular, I introduced the lexical decomposition of psychological verbs based on the locative relations interpreted in the mental domain (Jackendoff 1990, Hatori 1997, etc.). Causative psychological verbs and psychological constructions share the structure associated with semantic roles, as both are involved with event structures related to spatial domains. In contrast, Kövecses (2000)

proposes that event structure metaphors overlap with a specific emotional concept. Such event metaphors also correspond to the emotion frame presented in the FrameNet database, that is, information on lexical semantic elements from electronic text corpora based on Frame Semantics (Fillmore 1982). The emotion frame shows similar conceptual constituents, which are closely related to psychological events, such as Stimulus, Experiencer, and Expresser. Of relevance here is that Kövecses's (2000) emotion concepts share the construal of emotions with the emotion frame. Specifically, in order to account for the nature of psychological constructions, I refer to the frame elements of emotions, such as manner, i.e., *the duration, the onset of emotions, and degrees of intensity*, and as psychological semantic elements: these elements are involved in the lexical information of verbs and emotion nouns.

To sum up, this thesis aimed to provide a coherent account of the semantic interplay of verbs, nouns, and psychological constructions with specific reference to psychological semantic elements and construction schematicity by adopting a lexical-constructional approach. Within this approach, the individual occurrences of constructions should be accounted for by positing adequate lower-level constructions, such as those directly associated with a particular verb and emotion noun, i.e., verb-specific constructions (Croft 2003, 2012, Iwata 2008). I propose the other types of lower-level constructions denoted by particular verbs and nouns, i.e., *noun-specific constructions*, and *verb-noun constructions*, in accounting for psychological constructions. In this regard, the main proposals of my lexical-constructional account may be summarized briefly as follows:

- (1) The emotion types in psychological constructions are compatible with a basic sense of abstract constructions. The collocational preferences of psychological constructions may be accounted for in terms of appropriate lower-level constructions, such as verb-specific or noun-specific constructions and verb-noun constructions.
- (2) In terms of semantic elements of psychological constructions, meanings of verbs and emotion nouns, respectively, play a role in determining psychological



elements, such as onset and intensity of emotion, and an emotion noun describes the duration. The construction-specific semantics influences the entire meaning of an idiosyncratic construction.

In Chapters 4 through 6, I discussed the specific features of several psychological constructions and presented a coherent analysis of the semantic relations among verbs, emotion nouns, and constructional semantics. Based on data from the BNC and COCA, I described the roles of emotion nouns and verbs that collocate and the role of the highest level of constructional semantics. In addition, I examined the distribution of emotion nouns that are compatible with lower- and higher-level schematic constructions, presenting the collocational preference of each construction. I summarized the psychological semantic elements of emotion nouns and verbs, showing that constructions that are more specific are required to account for psychological constructions.

In Chapter 4, I investigated the semantic features of psychological caused-motion constructions (e.g., *strike fear into someone*), focusing on the verb meanings. I discussed the role of verbs in determining the psychological semantic elements of [V [FEAR] into NP] constructions: *strike* plays a central role in extending the usages of other *hit* verbs based on its semantic similarity. Such constructions share semantic features partially with caused-motion constructions and psychological verbs: SUDDENNESS: INTENSITY: CONTINUITY: ONE TIME of action. These elements are based on views of psychological dimensions as discussed in Chapter 3. The semantic elements denoted by verbs designate the onset of the emotion or the intensity. *Strike* functions as a prototypical verb for such constructions, in that other verbs denoting hitting are possible by virtue of their sharing certain semantic elements with *strike*. Thus, other verbs overlap in terms of the semantic features of *strike* and can occur in the [V *fear into* NP] construction. Based on observation of the corpus data, lower-level constructions such as “*strike/instill/put* [FEAR] into NP” are sanctioned by the *noun-specific construction*, i.e., by being combined with the particular noun *fear*. The noun-specific construction can account for the prototypical property of “*strike* [FEAR] into NP” constructions. These more specific constructions associated with a particular verb and noun are adequate for capturing these

types of constructions, posited as *verb-noun constructions*.

The discussion in Chapter 5 was devoted to a comparative study of two idiosyncratic constructions, namely [V [Emotion Noun] into NP] (i.e., Construction I) and [V NP into [Emotion Noun]] (i.e., Construction II). Goldberg and Jackendoff (2004) integrate both caused-motion and resultative constructions into the uniform resultative constructions. Based on Goldberg and Jackendoff (2004), these two types would be categorized as subtypes of resultatives. However, examining emotion nouns that occur with each construction reveals their distinctive features. Both lower and high levels of schematicity play a crucial role in terms of inheritance from two types of constructions. The data suggest that each construction type is linked to distinctive generalities of constructions in terms of the occurrence of emotion nouns. In fact, Construction I has a semantic feature in common with caused-motion constructions: continuous features of emotion specific to the duration. On the other hand, Construction II is linked to the semantic specific constraint on resultative constructions: the extreme feature and temporality are specified by the occurrences of emotion nouns. The emotion nouns compatible with Construction II are specified with regard to intensity and duration. According to the observations of the emotion nouns in each construction, noun-specific and verb-specific constructions clearly appear at the adequate levels of schematicity. In terms of emotion nouns, the meanings of high-level constructions are associated with the features of emotion nouns. Therefore, the idiosyncratic lower-level constructions are captured by examination of features of occurrences of emotion nouns via the hierarchical organization of constructions. Crucially, this analysis suggests that caused-motion constructions are distinctive and independent from resultative constructions, contrary to Goldberg and Jackendoff (2004).

As for other psychological constructions, it appears that verb-noun constructions may be captured in terms of the schematicity of the constructions. In Chapter 6, I discussed the types of emotions associated with the semantic features of [send shiver PP] constructions. Given the lower-level constructions, the pattern of idiomatic expressions such as [send [shiver] PP] can be captured as a single verb-noun construction. Interestingly, this construction pattern can describe a range of emotion types, including

fear, excitement, and pleasure (e.g., *send shivers of fear through us*). In order to reveal the semantic features of [send [shiver] PP] constructions, I discussed the roles of *send* and *shiver*, corresponding to the possible emotion types. The combination of *send* and *shiver* specifies the emotion type, namely intense emotion with a sudden onset and short duration with respect to the psychological dimensions discussed in Chapter 3. In addition, the emotion type available for the [send [shiver of [Emotion Noun]] PP] is identified by means of “cause of emotion.” This metaphor is compatible with the emotion scenario suggested by Kövecses (1990). Thus, two levels of abstraction are associated with the semantic features of [send [shiver] PP] constructions: given schematicity, the verb-noun construction denoted by *send* and *shiver* sanctions its occurrence with a variety of emotion nouns, and the abstract caused-motion construction is linked to the lower-levels. As *send* covers various transfer senses and its extended uses, the verb-specific construction is not sufficient in accounting for the detailed semantic specifications of all [send [shiver] PP] constructions. Thus, I suggested that adequate lower-level constructions play a role in categorizing the specific features in terms of lexical information indicated by properties of psychological constructions.

I consistently argued that the semantic interplay of verbs, emotion nouns, and psychological constructions are designated by their compatibility with both abstract and lower-level constructions. The lexical constructional account assumes the schematicity of constructions, the common essential features being shared by the various levels. Such features of higher-level constructions interact within their individual occurrences (see Chapters 4, 5, and 6). In addition, psychological constructions designate the onset of emotion, as well as its intensity and duration, as specified by verb meanings and emotion noun meanings. In addition to verb meanings, emotion nouns correspond to the abstract schematic semantics of the constructions. The combination of words in lower-level constructions designates their semantic compatibility with psychological semantic elements. According to these phenomena, the detailed specification of low-level constructions captures the semantics of psychological constructions by virtue of the correlated semantic elements of verbs, emotion nouns, and (high-level) constructions.

## 7.2 Concluding Remarks

In the lexical-constructional view, various ranges of lower-level constructions, such as verb-specific, noun-specific, and verb-noun constructions, characterize psychological constructions. Verb-specific constructions serve to designate psychological semantic elements and impose certain features of emotions in terms of psychological constructions. In the case of [*send* NP *into* [Emotion Noun]] constructions, a sudden sense and extreme emotion is designated by the verb-specific construction. Naturally, verb-specific constructions automatically inherit the central semantic features of the resultative constructions. A verb-specific construction sanctions further concrete constructions associated with emotion nouns that have narrow regularities. On the other hand, noun-specific constructions can play a role in extending the production of variations with a range of emotion nouns. For example, the noun *fear* is compatible with some verb semantics in the case of [*strike* [FEAR] *into* NP]. As a source verb, *strike* partially interacts with other *hit* verbs that can occur with the noun-specific constructions. Then, verb-noun constructions are understood as units of idiomatic combination of a definite verb and noun, such as [*send* [*shiver*] PP] constructions. The emotion types are compatible with both *send* and *shiver*, and they can be specified by the single construction semantics. Emotion nouns specify the whole meaning of the construction involved with psychological semantic elements. Therefore, the lexical constructional account offers the adequate prediction that, no matter how idiosyncratic constructions are, these can be addressed by the lower-level constructions close to their concrete instances within the construction schema.

In addition, psychological constructions are closely related with three concepts of psychological semantic elements: degrees of intensity; onset of emotion; and duration. These elements are designated by the semantic interplay of verbs, emotion nouns, and the whole construction. Intensity varies with verbs and emotion nouns by the combination of lexical information. For example, intensity is specified by the verb meaning of *strike*, as discussed in Chapter 4: the forcible action denoted by *strike* is linked to INTENSITY of [*strike* [FEAR] *into* NP]. On the other hand, the extremity of emotions is specified by

emotion nouns in the case of [V NP into [Emotion Noun]], whereas these emotion nouns are compatible with semantic features of resultative constructions (see Chapter 5). Then the onset of emotions is often specified by the lexical information of verbs: suddenness and gradualness. These elements automatically interact with duration. If a verb indicates a gradual sense, the construction can imply a continuous feature as in the case of [*instill* [Emotion Noun] into NP]. Although the time concept is too complex with reference to verbs (their lexical aspect and tense), the psychological semantic elements play a role determining the time concept totally. Furthermore, the emotion nouns can encode duration: short duration is specified by *surprise*, *startle*, and *fright*; long duration can be associated with various emotion nouns, such as *fear*, *confidence*, etc.

There are three directions for further research with respect to aspects that I have been unable to cover in this thesis. The first concerns valid lower-level constructions under exact conditions. Discussion of these may reveal certain clear factors to determine conditions for verb-specific constructions, noun-specific constructions, and verb-noun constructions according to the practical data. In particular, the way in which nouns are concerned with identifying these lower-level constructions, not just making a combination with verbs, may be interesting. In fact, verb-noun constructions play a role in categorization based on their frequency and idiosyncrasy, but it is not clear which verbs or nouns are significant with regard to extension and productivity of specific constructions. The further functions of various lower-level constructions must be accounted for by more specific semantic analysis. The second direction for further research concerns accounting for a psychological event based on three dimensions: degrees of intensity, onset of emotion, and duration. Emotion nouns denote lexical information compatible with constructional semantics, but such information varies partially according to various factors, such as tense, verbs, modifiers, and given contexts. It is undeniable that questions remain regarding the features of psychological dimensions. More detailed research is required in order to specify the role of the psychological dimension for emotion nouns and constructions. The third direction for future research concerns the need for further investigation of data to be analyzed. In particular, comprehensive research on various emotion nouns and argument structure constructions

using the larger database would be beneficial. A further data-related issue is the determination of collocational preferences and acceptability of expressions. In particular, introspective judgments regarding the likelihood of particular occurrences and their ranges of interpretation may be related to conventionality and ordinary understanding (cf. Stefanowitsch 2007: 91). Thus, many issues remain unresolved, but my hope is that this thesis might contribute to the development of a constructional approach to idiosyncratic constructions.

## References

- Aske, John (1989) "Motion Predicates in English and Spanish: A Closer Look," *BLS* 15 1-14.
- Bando, Michiko and Hiromi Matsumura (2001) "Shinridooshi to Shnrikeyoushi (Psych-Verbs and Psych-Adjectives)," *Nichiei Taishou Dooshi no Imi to Koubun (The Meanings of Verbs and their Constructions in Japanese and English)*, ed. by Taro Kageyama, 69-97, Taishukan, Tokyo.
- Barlow, Michael (2000) "Usage, Blends and Grammar," *Usage Based Models of Language*, ed. by Michael Barlow and Suzanne Kemmer, 315-345, CSLI Publications, Stanford.
- Barlow, Michael, and Suzanne Kemmer (eds.) (2000) *Usage-Based Models of Language*, CSLI Publications, Stanford.
- Belletti, Adria and Luigi Rizzi (1988) "Psych-Verbs and  $\theta$ -Theory," *Natural Language and Linguistic Theory* 6, 291-352.
- Boas, Hans C. (2003) *A Constructional Approach to Resultatives*. CSLI Publications, Stanford.
- Boas, Hans C. (2009) "Verb Meanings at the Crossroads between Higher-Level and Lower-Level Constructions," *Lingua* 120, 22-34.
- Boas, Hans C. (2010) "The Syntax-Lexicon Continuum in Construction Grammar: A Case Study of English Communication Verbs," *Belgian Journal of Linguistics* 24, 54-82.
- Boas, Hans C. (2013) "Cognitive Construction Grammar," *The Oxford Handbook of Construction Grammar*, ed. by Thomas Hoffman and Graeme Trousdale, 233-252, Oxford University Press, Oxford.
- Bouchard, Denis (1995) *The Semantics of Syntax: A Minimalist Approach to Grammar*. University of Chicago Press, Chicago.
- Bybee, Joan (2010) *Language, Usage and Cognition*, Cambridge University Press, Cambridge.

- Cattel, Ray (1984) *Syntax and Semantics 17: Composite Predicates in English*, Academic Press, New York.
- Croft, William (1993) "Case Marking and the Semantics of Mental Verbs," *Semantics and the Lexicon*, ed. by James Pustejovsky, 55-72, Kluwer Academic Press, Dordrecht.
- Croft, William (2001) *Radical Construction Grammar: Syntactic Theory in Typological Perspectives*, Oxford University Press, Oxford.
- Croft, William (2003). "Lexical Rules vs. Constructions: a False Dichotomy," *Motivation in Language: Studies in honor of Günter Radden*, ed. by Hubert Cuyckens, Thomas Berg, René Dirven and Klaus-Uwe Panther, 49-68, John Benjamins, Amsterdam.
- Croft, William and Alan Cruse (2004) *Cognitive Linguistics*, Cambridge University Press, Cambridge.
- Croft, William (2012) *Verbs: Aspect and Causal Structure*, Oxford University Press, Oxford.
- Dean, Paul (1996) "On Jackendoff's Conceptual Semantics," *Cognitive Linguistics* 7, 35-91.
- Dixon, Robert M.W. (1991) *A New Semantic Approach to English Grammar, on Semantic Principles*, Oxford University Press, Oxford.
- Dowty, David (1991) "Thematic Proto-Roles and Argument Selection," *Language* 67, 547-619.
- Fillmore, Charles J. (1968) "The Case for Case," *Universals in Linguistic Theory*, ed. by Emmon Bach and Robert T. Harms, 1-88, Holt, Rinehart and Winston, New York.
- Fillmore, Charles J. (1970) "The Grammar of Hitting and Breaking," *Readings in Transformational Grammar*, ed. by Roderick A. Jacob and Peter S. Rosenbaum, 120-133, Ginn, Waltham, Mass.
- Fillmore, Charles J (1982) "Frame Semantics," *Linguistics in the Morning Calm*, ed. by Linguistic Society of Korea, 111-138, Hanshin, Seoul.
- Fillmore, Charles J, Paul Kay, and Catherine O'Conner (1988) "Regularity and



- Idiomaticity in Grammatical Constructions: The Case of *Let Alone*.”  
*Language* 64, 501-538.
- Fillmore, Charles J., Chris R. Johnson, and Miriam R.L. Petruck (2003) “Background to Frame Net.” *International Journal of Lexicography* 16, 235-250.
- Fillmore, Charles J. and Colin Baker (2010) “A Frames Approach to Semantic Analysis,” *The Oxford Handbook of Linguistic Analysis*, ed. by Bernd Heine and Heiko Narrog, 313-339, Oxford University Press, Oxford.
- FrameNet < <https://framenet.icsi.berkeley.edu/fndrupal/>>
- Givón, Talmy (1984) *Syntax: An Introduction, Vol. I*, John Benjamins, Amsterdam.
- Givón, Talmy (2001) *Syntax: An Introduction, Vol. II*, John Benjamins, Amsterdam.
- Goldberg, Adele. E. (1991) “It Can’t Go Down the Chimney Up: Path and the English Resultative,” *BLS* 17, 368-378.
- Goldberg Adele. E. (1995) *Constructions: A Construction Grammar Approach to Argument Structure*, University of Chicago Press, Chicago.
- Goldberg Adele. E. (1997) “The Relationships between Verbs and Constructions,” *Lexical and Syntactical Constructions and the Construction Meaning*, ed. by Marjolijn Verspoor, Kee Dong Lee and Eve Sweetser, 383-398, John Benjamins, Amsterdam.
- Goldberg Adele. E. (2006) *Constructions at Work: The Nature of Generalization in Language*, Oxford University Press, Oxford.
- Goldberg, Adele. E. and Ray Jackendoff (2004) “The English Resultative as a Family Construction,” *Language* 80, 532-568.
- Grimshaw, Jane (1990) *Argument Structure*, MIT Press, Cambridge, Mass.
- Hatori, Yuriko (1997) “On the Lexical Conceptual Structure of Psych-Verbs,” *Verb Semantics and Syntactic Structure*, ed. by Taro Kageyama, 15-44, Kuroshio Publishers, Tokyo.
- Hayase, Naoko and Yuko Horita (2005) *Ninichibunpou no Shintenkai: Kategoriika to Youhoukiban Moderu (A New Development of Cognitive Grammar: Categorization and Usage Based Model)*, Kenkyusha, Tokyo.
- Hilpert, Martin (2014) *Construction Grammar and its Application to English*, Edinburgh

University Press, Edinburgh.

- Iwata, Seizi (1993) "Three Types of Passives for Psych-Verbs," *English Linguistics* 10, 160-183.
- Iwata Seizi (1995) "The Distinctive Character of Psych-Verbs as Causatives," *Linguistic Analysis* 25, 95-120.
- Iwata, Seizi (1998) *A Lexical Network Approach to Verbal Semantics*, Kaitakusha, Tokyo.
- Iwata, Seizi (2005) "Locative Alternation and Two Levels of Meaning," *Cognitive Linguistics* 16, 335-407.
- Iwata, Seizi (2006) "Where does Construction Come from?," *English Linguistics* 23, 493-533.
- Iwata, Seizi (2008) *Locative Alternation: A Lexical-Constructional Approach*, John Benjamins, Amsterdam.
- Iwata Seizi (2009) "2 Shurui no Kekka Hyougenn to Koubun Riron (Two types of Resultatives and Constructional Theory)," *Kekka Koubun no Taiporajii (Typology of Resultative Constructions)*, ed. by Naoyuki Ono, 171-216, Hituzi Publishers, Tokyo.
- Jackendoff, Ray (1990) *Semantic Structures*. MIT Press, Cambridge, Mass.
- Johnson-Laird, Philip. N. and Keith Oatley (1989) "The Language of Emotions: An Analysis of A Semantic Field," *Cognition and Emotion* 3, 81-123.
- Kageyama, Taro (1996) *Dooshi Imiron (Verb Semantics)*, Kurosio Publishers. Tokyo.
- Kageyama, Taro (2000) "Shinrijutsugo niokeru Keitai to Imi no Zure (*Mismatches of Form and Meanings in Psych-Predicates*)" *Journal of the Society of English and American Literature, Kansei Gakuin University* 45(1), 62-79.
- Kageyama Taro (2001) "Kekka Koubun (*Resultative Constructions*)," *Nichiei Taishou Dooshi no Imi to Koubun (The Meanings of Verbs and their Constructions in Japanese and English)*, ed. by Taro Kageyama, 154-181, Taishukan, Tokyo.
- Kay, Paul (2005) "Argument Structure Constructions and the Argument-Adjunct Distinction," *Grammatical Constructions: Back to the Roots*, ed. by Mirjam Fried and Hans C. Boas, 71-100, John Benjamins, Amsterdam.
- Kay, Paul (2013) "The Limits of (Construction) Grammar," *The Oxford Handbook of*

*Construction Grammar*, ed. Thomas Hoffman and Graeme Trousdale 32-48, Oxford University Press, Oxford.

Kitahara, Ken-ichi (2010) *English Cognate Object Constructions and Related Phenomena: A Lexical-Constructional Approach*, Ph.D. dissertation, Tsukuba University.

Kövecses, Zoltán (1990) *Emotion Concepts*, Springer-Verlag, New York.

Kövecses, Zoltán (2000) *Metaphor and Emotion: Language, Culture, and Body in Human Feeling*, Cambridge University Press, Cambridge.

Lakoff, George (1987) *Women, Fire, and Dangerous Things: What Categories Reveal about the Mind*, University of Chicago Press, Chicago.

Lakoff, George (1990) "Invariance Hypothesis: Is Abstract Reason Based on Image Schemas?," *Cognitive Linguistics* 1(1), 39-74.

Lakoff, George and Mark Johnson (1980) *Metaphor We Live By*, University Chicago Press, Chicago.

Lakoff, George and Mark Johnson (1999) *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought*, Basic Books, New York.

Landau, Idan (2010) *Locative Syntax of Experiencers*, MIT Press, Cambridge, Mass.

Langacker Ronald W(1990) *Concept ,Image, and Symbol*, Mouton de Gruyter, Berlin and New York.

Langacker, Ronald W (2000) "A Dynamic Usage Based Model," *Usage-Based Models of Language*, ed. by Micahel Barlow and Suzanne Kemmer,1-63, CSLI Publications, Stanford,

Langacker, Ronald W (2008) *Cognitive Grammar: A Basic Introduction*, Oxford University Press, Oxford.

Levin, Beth (1993) *English Verbs Classes and Alternations: A Preliminary Investigation*, University of Chicago Press, Chicago.

Levin, Beth and Malka Rappaport Hovav (1995) *Unaccusativity:A the Syntax–Lexical Semantics Interface*, MIT Press, Cambridge Mass.

Levin, Beth and Malka Rappaport Hovav (2005) *Argument Realization*,

- Cambridge University Press, Cambridge.
- Maruta, Tadao (1998) *Shiekidoushi no Anaotomi ( The Anatomy of Causative Verbs)*, Shohakusha, Tokyo.
- Matsumoto, Yo (2002) “Shiekiidokoubunn niokeru Imiseiyaku (*The Semantic Constrains on the Caused-Motion Constructions*),” *Ninchigengogaku I : Jishokozo (Cognitive Linguistics 1: Event Structure)*, ed. by S. Nishimura, 187-211, University of Tokyo Press, Tokyo.
- Miki, Nozomi (2001) “Nan-i Koubun (*Tough Constructions*), ” *Nichiei Taishou Dooshi no Imi to Koubun (The Meanings of Verbs and their Constructions in Japanese and English)*, ed. by Taro Kageyama, 212-239, Taishukan, Tokyo.
- Moon, Rosamund (1998) *Fixed Expressions and Idioms in English: A Corpus Based Approach*, Oxford University Press, Oxford.
- Nakao, Tomoko (2013) “Eigo no Idoshieki Koubun niokeru Imiseiyaku Saikou: Doushi no Tagisei to Sabukoubun (*The Semantic Constraints on the English Caused-Motion Constructions Revisited: Subtypes of the Constructions and Verbal Polysemy* ),” *Papers from the 13th National Conference of the Japanese Cognitive Linguistics Association* 13, 121-133.
- Nakao, Tomoko (2014) “Shinritekihenka wo Arawasu Shiekiidou Koubun niokeru Ichi Kousatsu (*A Study of the “Psychological ”Caused-Motion Constructions*)” *JELS* 31, 77-83.
- Nakao, Tomoko (2015a) “ Shiekiido Koubun to Kekka Koubun ni okeru Shinri Youhou no Imiteki Tokusei (*A Comparative Look at the Semantic Features of Psychological Caused-Motion and Resultative Constructions*),” *JELS* 32, 84-90.
- Nakao, Tomoko (2015b) “That Voice Sent Shivers Down her Spine: With Special Reference to the Semantic Features of Emotion Types on One Subtype of Psychological Caused-Motion Construction,” *KLS* 35, 169-180.
- Nakamura, Yoshihisa (ed.) (2004) *Ninchibumpouon II (Cognitive Grammar II)*, Taishukan, Tokyo.
- Nemoto, Noriko (1998) “ On the Polysemy of Ditransitive SAVE: The Role of Frame Semantics in Construction Grammar,” *English Linguistics* 15, 219-242.

- Nemoto, Noriko (1999) *A Construction Grammar Approach to Polysemy: The Division of Labor between Verbs and Constructions*, doctoral dissertation, Tsukuba University.
- Nemoto, Noriko (2005) "Verbal Polysemy and Frame Semantics in Construction Grammar: Some Observations on the Locative Alternation," *Grammatical Constructions: Back to the Roots*, ed. by Mirjam Fried and Hans C. Boas, 119-136, John Benjamins, Amsterdam.
- Pesetsky, David (1995) *Zero Syntax: Experiencers and Cascades*, MIT Press, Cambridge, Mass.
- Pinker, Steven (1989) *Learnability and Cognition: The Acquisition of Argument Structure*, MIT Press, Cambridge, Mass.
- Pustejovsky, James (1995) *Generative Lexicon*, MIT Press, Cambridge, Mass.
- Rappaport Hovav, Malka and Beth Levin (1998) "Building Verb Meanings," *The Projection of Arguments*, ed. by Miriam Butt and Wilhem Geuder, 97-134, CLSI Publications, Stanford CA.
- Rappaport Hovav, Malka and Beth Levin (2001) "An Event Structure Account of English Resultatives," *Language* 77, 766-797.
- Reddy, Michael (1979) "The Conduit Metaphor: A Case of Frame Conflict in Our Language about Language," *Metaphor and Thought*, ed. by Andrew Ortony, 284-324, Cambridge University Press, Cambridge.
- Dirven, René (1997) "Emotion as Cause and the Cause of Emotion," *The Language of Emotions: Conceptualization, Expression, and Theoretical Foundation*, ed. by Susanne Niemeier and René Dirven, 55-83, John Benjamins, Amsterdam.
- Ritter, Elizabeth and Sarah T Rosen (1996) "Strong and Weak Predicates: Reducing the Lexical Burden," *Linguistic Analysis* 26, 29-62.
- Shibatani, Masayoshi (1976) "The Grammar of Causative Construction: A Conspectus," *Syntax and Semantics 6: The Grammar of Causative Constructions*, ed. by M. Shibatani, 1-40, Academic Press, New York.
- Stefanowitsch, Anatol (2007) "Words and their Metaphors: A Corpus-Based Approach," *Corpus-Based Approaches to Metaphor and Metonymy*, ed. by Anatol

- Stefanowitsch and Stefan. Th. Gries, 63-105, Mouton de Gruyter, Berlin and New York.
- Sullivan, Karen (2013) *Frames and Constructions in Metaphoric Language*, John Benjamins, Amsterdam.
- Suzuki, Toru (2007) “Kekkoubun ni okeru Yukaiseiseiyaku wo Saikou suru (The Constraint of Boundedness on the Resultative Construcitons Revisited),” *Kekka Koubun Kenkyu no Shinshiten (New Perspectives of the Resultative Constructions)*, ed. by Naoyuki Ono, 103-141, Hituzi Publishers, Tokyo.
- Talmy, Leonard (1985) “Lexicalization Patterns: Semantic Structure in Lexical Forms,” *Language Typology and Syntactic Description, Vol.3: Grammatical Categories and the Lexicon*, ed. by Timothy Shopen, 57-149, Cambridge University Press, Cambridge.
- Talmy, Leonard (2000a) *Toward a Cognitive Semantics, Vol. I, Concept Structuring Systems*, MIT Press, Cambridge Mass.
- Talmy, Leonard (2000b) *Toward a Cognitive Semantics. Vol. II, Typology and Process in Concept Structuring*, MIT Press, Cambridge Mass.
- Tomasello, Michael (1992) *First Verbs: A Case Study of Early Grammatical Development*. Cambridge University Press, Cambridge.
- Tomasello, Michael (2003) *Constructing a Language: A Usage-Based Theory of Language Acquisition*, Harvard University Press, Cambridge, Mass.
- Tanaka, Shigenori and Yo Matsumoto (1997) *Kuukan to Ido no Hyougen (The Expressions of Space and Motion)*, Kenkyusha, Tokyo.
- Taylor, John R (2002) *Cognitive Grammar*, Oxford University Press, Oxford.
- Taylor, John R (2012) *The Mental Corpus: How Language is Represented in the Mind*, Oxford University Press, Oxford.
- Ungerer, Freidrich and Hans-Jörg, Schmid (1996) *An Introduction to Cognitive Linguistics*, Addison Wesley Longman, Harlow.
- van der Leek, Frederike (2000) “Caused-Motion and the ‘Bottom-up’ Role of Grammar,” *Constructions in Cognitive Linguistics*, ed. by Ad Foolen and Frederike van der Leek, 301-331, John Benjamins, Amsterdam.

- Van Valin Jr. Robert. D (2005) *Exploring the Syntax-Semantics Interface*, Cambridge University Press, Cambridge.
- Van Voost, Jan (1992) "The Aspectual Semantics of Psychological Verbs," *Linguistics and Philosophy* 15(1), 65-92.
- Vanden Wyngaerd, Guido (2001) "Measuring Events," *Language* 77, 61-90.
- Wierzbicka, Anna (1999) *Emotions across Languages and Cultures: Diversity and Universals*, Cambridge University Press, Cambridge.

### **Dictionaries**

- The American Heritage Dictionary of Idioms* 2nd Edition (2013), Houghton Mifflin Harcourt.
- Oxford Advanced Learner's Dictionary* 8th Edition (2010), Oxford University Press. [OALD]
- Oxford English Dictionary* 2nd version (CD), Oxford University Press. [OED]
- Oxford Dictionary of English* 2nd Edition (2003), Oxford University Press.
- Longman Dictionary of Contemporary English* 5th Edition, (2009) Longman. [LDOCE]

### **Corpora**

- British National Corpus [BNC]
- The Corpus of Contemporary American English [COCA]

## List of Errata

page	line	erratum	correction
ii	13	Chung Sung-Yeo	Sung Yeo Chung
iv	22	<i>fear</i>	<i>Fear</i>
v	21	Constructions	Construction
2	14	lexical constructional	lexical-constructional
2	15	lexical constructional	lexical-constructional
2	19	e.g.	e.g.,
2	19	Langacker 1987	Langacker 2000
2	20	lexical constructional	lexical-constructional
3	22	lower level	lower-level
4	2	lexical constructional	lexical-constructional
4	13	lexical constructional	lexical-constructional
4	18	lexical constructional	lexical-constructional
5	2	strike	<i>strike</i>
5	6	fear	<i>fear</i>
5	29	lexical constructional	lexical-constructional
6	7	lexical constructional	lexical-constructional
11	25	some clocation does	some collocations do
16	16	The (9a) event	The event in (9a)
16	16	(9b)	the event in (9b) represents
16	17	(9c)	the event in (9c) represents
17	8	Croft 2003 2012	Croft 2003, 2012
21	Figure 2.4	Verb-class specific constructions	Verb-class-specific constructions
26	26	are contrasts	is a contrast
31	12	extend	are extended
33	9	verbs can also	verbs can not
33	10	while	and similarly,
33	10	cannot	also cannot
33	10	because	because of
34	8	oblique	Oblique
35	17	theme	Theme
35	(11b)	[CS+ ([X] α	[CS+ ([X] α
37	(14a,b)	religions	regions
42	11	manner and degree	Manner and Degree
42	12	specified the	specified by the
42	17	are	is
45	3	(20a)	(20b)
50	5	lexical constructional	lexical-constructional
52	7	(4)	(2a)
52	15	(4)	(2a)
53	2	relationship associated	relationship is associated
53	3	frames the	frames of the

\*The line number count includes the titles of chapters, as well as section titles.



page	line	erratum	correction
56	26	example	examples
58	23	determine	determines
65	19	the most frequently	frequently
67	(28c)	<i>strike</i>	<i>strike</i>
74	7	(The	The
76	26	instill, put	<i>instill, put</i>
76	28	strike	<i>strike</i>
84	12	he	she
90	5,13	<i>pride and honor</i>	<i>pride and honour</i>
90	(21)	honor	honour
91	4	designate	designates
92	10	e.g.	e.g.,
92	17	fear	<i>fear</i>
93	Figure 5.2	[NP strike [negative	[NP strike [Negative
99	27	(31)	(31) and (32)
102	4	verb	verbs
105	23	e.g.	e.g.,
109	8	emotion noun	Emotion Noun
109	19	, which is association	which is associated
110	9	this section	this chapter
114	6	shiver	<i>shiver</i>
115	2	[shiver of [Emotion Noun]	[shiver of [Emotion Noun]]
115	6	[shiver of [Emotion Noun]	[shiver of [Emotion Noun]]
116	Table 6.2	emotion noun	Emotion Noun
116	Table 6.2 SADNESS / ANGER	??	?
116	2	[[shiver] of emotion noun]	[shiver of [Emotion Noun]]
117	24	[[shiver of	[shiver of
118	13	associate	are associated
120	21	(21e)	(21b)
120	25	(30a)	(23e)
121	8	(22)	(23)
123	5	(28)	(29)
129	7	11	there are 11
130	5	lexical constructional	lexical-constructional
140	25	<i>Readings in</i>	<i>Readings in English</i>
140	26	Roderick A. Jacob and Peter S. Rosenbaum	Roderick A. Jacob and Peter S. Rosenbaum
141	11	Path	Paths
143	13	Metaphor	Metaphors
143	20	Usage Based	Usage-Based
144	6	S. Nishimura	Yoshiki Nishimura

\*The line number count includes the titles of chapters, as well as section titles.