1

Frame Semantics

Yoshiko Matsumoto

1.1 Introduction

Frame Semantics, often considered as a sister theory to Construction Grammar, is in fact foundational to Construction Grammar in both chronological and conceptual terms. As a theory of semantics, Frame Semantics prioritizes language users' human experience. This position is radically different from the emphasis in formal semantics on the truth-conditional aspect of language. Frame Semantics views the meaning of linguistic materials (such as a word) in terms of a network of empirical information, such as the speech situation and the sociocultural beliefs and practices which motivate the concept represented by the word. In that view, the meaning of a word (and any other linguistic structure or construction) does not exist independently of the corresponding conceptual structure of expectation and knowledge that have been accumulated through the users' experiences. Not all theories of semantics or grammar would adopt this idea. However, recent findings in cognitive neuroscience, such as Fedorenko et al. (2010), affirm that the primary function of human language is to communicate meanings across users rather than being a mechanism for processing abstract thoughts, suggesting that understanding the language system crucially involves meanings relevant in human experience. Frame Semantics, which was originally advocated in the late 1970s to 1980s, anticipated this conception of language use and laid a rich foundation for a variety of approaches associated with Construction Grammar, remaining as an intellectual resource for further research developments.

The theory of Frame Semantics was originally advocated and developed by Charles J. Fillmore. This chapter focuses on the seminal ideas that have been further advanced in relation to Construction Grammar and FrameNet. Section 1.2 then focuses on the foundational and developing ideas of Frame Semantics that were advocated and explicated in Fillmore's writings mostly in the 1980s. They trace back to his earlier transitional work from Case Grammar to lexical semantics in the late 1970s. The investigation led him to articulate the

theory of Frame Semantics more fully in the 1980s, which was further refined in the early 1990s. Those writings are not only still relevant to current theories of grammar and semantics but provide a great resource to refine and develop them. Following the overview of the theory, Section 1.3 will discuss how a variety of frame concepts and terms, such as cognitive frame, interactional frame, and linguistic frame, are or were used. Section 1.4 will consider how the idea of frames can effectively explain grammatical well-formedness through two examples of cross-linguistic studies that were conducted on the path from Frame Semantics to the establishment of Construction Grammar. The discussions are intended to present a background for some key issues that have been developed and are developing in theories and analyses related to constructionist views. Section 1.5 concludes the chapter with implications and prospects for the theory of Frame Semantics.

1.2 Main Ideas of Frame Semantics

Fillmore in his article entitled "Frame semantics" eloquently summarizes the vision he advocated for the theory (Fillmore 1982: 135–136):

> I have argued for a view of the description of meaning-bearing elements in a language according to which words (etc.) come into being only for a reason, that reason being anchored in human experiences and human institutions. In this view, the only way in which people can truly be said to understand the use to which these meaning-bearing elements are being put in actual utterances is to understand those experiences and institutions and to know why such experiences and institutions gave people reasons to create the categories expressed by the words. The semanticist's job is to tease out the precise nature of the relationship between the word and the category, and the precise nature of the relationships between the category and the background.

As suggested in the above paragraph, Frame Semantics is also characterized as the 'semantics of understanding' or 'U-semantics' as opposed to the semantics of truth or 'T-semantics' (Fillmore 1985: 222ff.). Whereas the latter focuses on truth conditions, the semantics of understanding seeks to interpret linguistic elements (or texts) based on how they are situated in the context of their use. Centrally underlying this semantics of understanding is the concept referred to in Fillmore's (1985) paper as the 'interpretive frame'. By design, Frame Semantics did not isolate semantics from pragmatics or sociolinguistics, which also address contextual conditions of language use. The degree to which this overlap has been and can be embraced may vary among different approaches affiliated with Construction Grammar that have been developed since then, but it is definitely a characteristic aspect of the approach introduced by Fillmore and stands in contrast to the formal semantics of that time (see also Petruck 1996, 2011).

The main idea in Frame Semantics is no doubt the concept of 'frame'. I will further comment in Section 1.3 how different concepts and terms have been introduced in Fillmore's writings on Frame Semantics, but in this section, without laboring to make fine distinctions, the general notion of frame is considered, including 'cognitive frame', 'interactional frame', 'interpretive frame', 'linguistic frame', 'scene', and simply frame. Fillmore (1982: 111) states that

> By the term 'frame' I have in mind any system of concepts related in such a way that to understand any one of them you have to understand the whole structure in which it fits; when one of the things in such a structure is introduced into a text, or into a conversation, all of the others are automatically made available. I intend the word 'frame' as used here to be a general cover term for the set of concepts variously known, in the literature on natural language understanding, as 'schema', 'script', 'scenario', 'ideational scaffolding', 'cognitive model', or 'folk theory'.

A notable aspect of Fillmore's notion of frame is that, unlike that employed in other fields, it traces back to the conception of Case Grammar (Fillmore 1968). This background affirms the close tie of Frame Semantics to grammatical theories and, most relevantly, to Construction Grammar.

In Case Grammar, the concept of 'case frame' was proposed to identify the semantic valence of lexical items (mostly verbs) described in terms of universal semantic roles, or 'deep cases' (Fillmore 1968), such as Agentive, Dative, and Instrumental. Other deep cases include Factive, Locative, Objective, and a few others (Fillmore 1968: 24–25). Since the semantic valence is specified independently from the grammatical realization of a verb's arguments, a full description of a verb is given by a pairing of a case frame and the argument realization; an Agentive is the subject (*John broke the window*), an Instrumental is the subject (*A hammer broke the window*), and so on. In contrast to the Chomskyan subcategorization frame, which had only strictly syntactic slots associated with a verb, the case frame supplied semantic enrichment to grammatical relations.

It became clear, however, that even further enrichment was needed. Since case frames relate descriptions of situations with syntactic representations, they are "characterizing a small abstract 'scene' or 'situation', so that to understand the semantic structure of the verb it was necessary to understand the properties of such schematized scenes" (Fillmore 1982: 115). That is, instead of regarding abstract semantic roles as the primary concept and having their various assemblages define different scenes and situations, as conceived of in Case Grammar, Frame Semantics placed 'schematized scenes' (i.e., frames) at the conceptual core, and semantic cases/roles were defined in relation to the specific frames. This view is epitomized in the slogan "Meanings are relative to scenes" (Fillmore 1977c: 59).

The point that some groups of verbs are not simply a collection of independent words, but belong to one domain, or a network, of vocabulary with

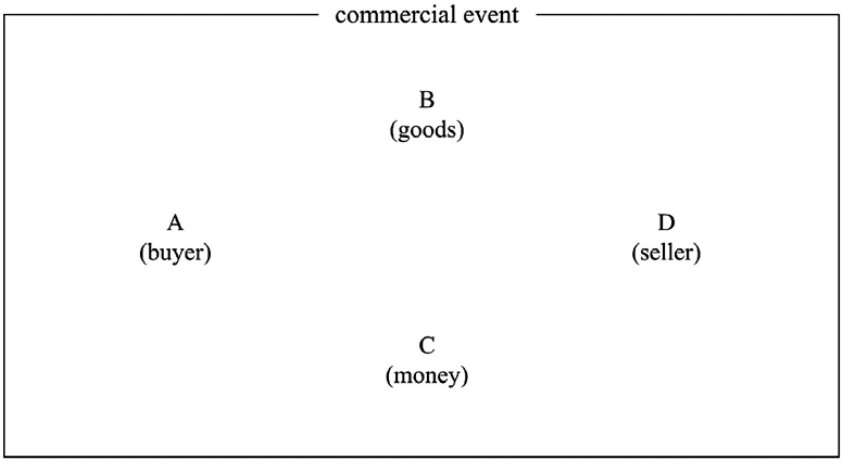

Figure 1.1 Elements in the prototypical commercial event frame (adapted from Fillmore 1977b)

a presupposition of a certain schematization of human experience was first illustrated in Fillmore (1971) with regard to verbs of judging such as *blame*, *accuse*, and *criticize*, and discussions of contrasts such as those between *come* and *go* or *bring* and *take*. The characterization of frame in this way is lucidly illustrated by the oft-cited example of the 'commercial event' frame (Fillmore 1977b, among others). According to that idea, which has inspired subsequent developments in Construction Grammar and the FrameNet project, a verb such as *buy*, *sell*, *cost*, *charge*, or *pay* is adequately comprehended only in relation to the larger context which it evokes. Fillmore claimed that lexical material points to such a scene and activates the relevant frame with its participating elements, in this case the commercial event frame, in the mind of the construer. We can visualize this scene in a schematized way shown in Figure 1.1 (based on fig. 1 in Fillmore 1977b: 104): The basic elements listed in a prototypical commercial event are the buyer (A), the goods (B), the money (C), and the seller (D).

A focus on some elements, or adopting a certain *perspective*, distinguishes related yet different verbs. For example, the verb *buy* places the buyer (A) and the goods (B) in perspective, treating them as the figures of the scene. They are obligatory elements in terms of grammatical relations, indicated by the numbers in Figure 1.2, in which 1 is the subject and 2 the object. Other elements are put in the background, are grammatically optional, and are marked with prepositions, for example, *for $50* (the money), *from Natalie* (the seller). In contrast, the verb *sell* puts the goods (B) and the seller (D) in focus, making them the grammatically obligatory elements while the buyer (A) and the money (C) are in the background and marked with *to* and *for*, respectively, as Figure 1.3 shows (based on Fillmore 1977b: 106).

Other commercial event verbs, such as *pay*, *spend*, *cost*, and *charge*, can similarly be described using the same frame of a commercial event, each verb foregrounding only a limited section of the frame. These examples illustrate

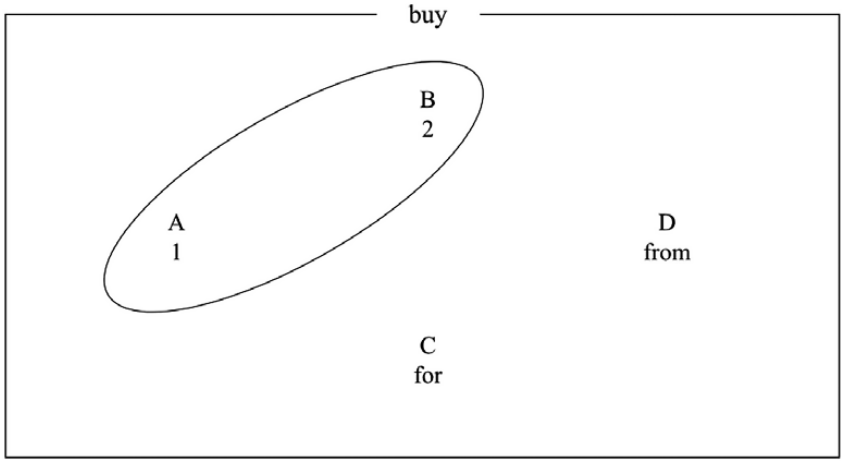

Figure 1.2 Perspective of the verb *buy* (adapted from Fillmore 1977b)

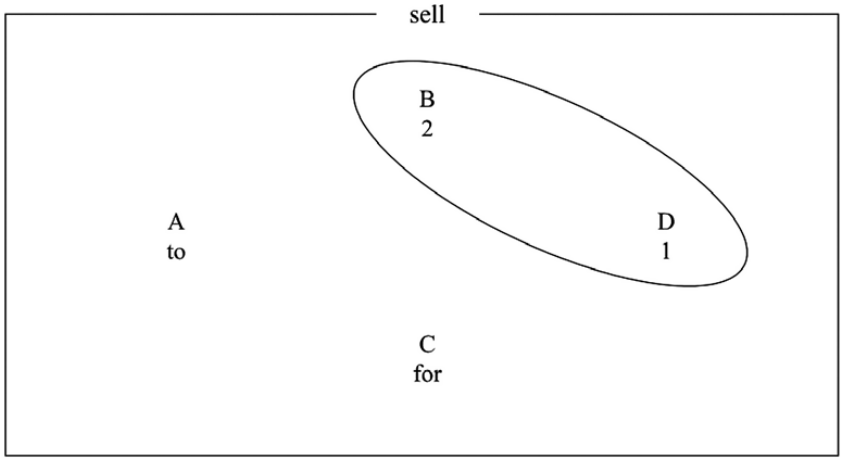

Figure 1.3 Perspective of the verb *sell* (adapted from Fillmore 1977b)

the critical point that a specific word, which selects a specific perspective, is only part of the network of words and concepts in a larger schematization of context. This insight was further advanced by Fillmore and Atkins (1992) in the analysis of the semantics of the verb *risk*. Such categories as Chance, Harm, Victim, Valued Object, (Risky) Situation, Deed, Actor, (Intended) Gain, Purpose, Beneficiary, and Motivation were proposed in the verb's valence description in a similar fashion to what Fillmore had described in his earlier work in the scene of a commercial event. Underscoring the need for such categories, they state that "in a careful description of the semantic roles associated with predicates of most verbs we need 'frame-specific' semantic role categories, thus going far beyond the familiar repertories of Agent, Patient, Experiencer, etc., found in much recent discussion of the semantics

and grammar of verbs" (Fillmore & Atkins 1992). While some categories/elements are structurally realized only as optional adjuncts from a certain perspective, they highlight specific characteristics of the frame. Some elements cannot be included in a simple clause as is the case of the seller (D) in *spend* (see example 1), or *cost* (see example 2), even though the seller is definitely a crucial conceptual member of the scene (Fillmore 1977b: 104).

(1) Pat spent $50 on the bouquet.

(2) The bouquet cost Pat $50.

Another benefit of the frame concept is that sequential aspects of an event (such as the commercial event) can be addressed. While this is reminiscent of the idea of 'script' proposed in the era of incipient Artificial Intelligence research (Schank & Abelson 1977), in which a sequence of events is included in a frame, Fillmore's proposal is strictly focused on linguistic materials. The basic scheme is shown in the diagram in Figure 1.4.

The integration of change in time conceptually enables the frame-specific categories in a frame evoked by a lexical item to include motivation (Fillmore & Atkins 1992), consequences (Matsumoto 1988, 1997), or resultative conditions (Boas 2003). Envisioning events in sequence also helps one understand the semantics of lexical items such as *on land* or *nurui* in Japanese (Fillmore 1982: 122). Being *on land* suggests a scene of an earlier sea voyage, and tea being *nurui* suggests that it was once at a higher temperature. Further developments have been made in framenets (see also Chapter 3).

Linguistic materials that evoke frames based on human experience are not limited to verbs. In the sentence *My dad wasted most of the morning on the bus* (Fillmore 1985: 230–231), for example, the use of the preposition *on* preceding *the bus* (or other nouns referring to means of transportation) evokes the frame of the vehicle in question being 'in service', as opposed to the frame evoked by the use of the preposition *in* (*in the bus*), where the vehicle is simply construed as a container and does not carry the expectation of making a journey. If an old

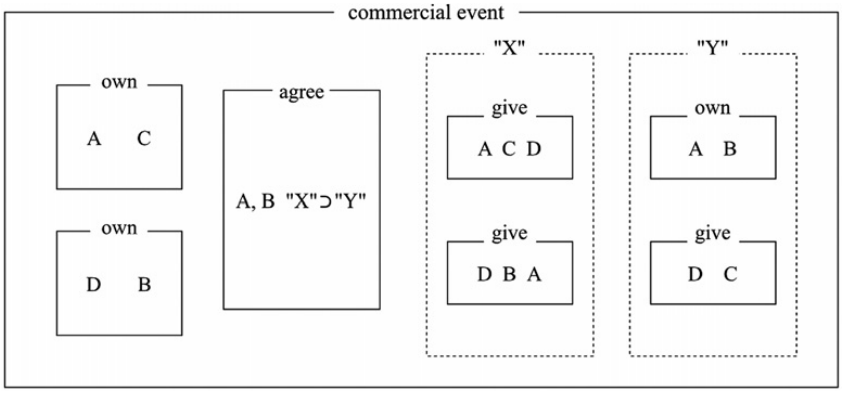

Figure 1.4 Sequence of events in the commercial event frame (adapted from Fillmore 1977b: 105, fig. 2)

bus was converted to a play space for children, the suitable frame would be evoked by the use of *in the bus* as in *Children enjoyed spending the morning in the bus*. Fillmore (1982: 123) also mentions frames that are evoked by schematic constructions. Referring to the sentence *She had been running*, he touches upon the (configuring) frame that is evoked by the combination of the pluperfect and the progressive forms. While each form in the combination is general and abstract in comparison to a specific image that a verb can evoke, the combination provides the configuring function in which the content fits. The temporal action (i.e., running) is understood in relation to the ongoing history depicted by the sentence. We see a clear harbinger of Construction Grammar in this conception of Frame Semantics.[1] The above examples illustrate that Frame Semantics approaches the meanings of texts and utterances both in *compositional* as well as *non-compositional* terms. The semantics of each lexical element and the relevant grammatical construction build the basic semantic interpretation of the sentence but such a composition of symbolic meanings is not enough to reach a holistic understanding of what is (intended to be) conveyed by the utterances. Addressing non-compositionality of meaning in various constructions is a crucial point that is maintained and developed in establishing Construction Grammar (e.g., Fillmore et al. 1988).

The examples above show that specific linguistic (lexical and grammatical) materials selected in utterances and texts evoke frames in the minds of construers. Frames can also be 'invoked' by construers without linguistic material that specifically points to a frame. A well-known example provided by Fillmore (1985: 232), in which construers invoke a frame that is not evoked by a specific linguistic material, is represented by the sentence *We never open our presents until the morning*. Nowhere in the sentence is *Christmas* mentioned, but construers who share the culturally specific experience of collectively opening presents on that holiday would be able to invoke a scene of Christmas. If such a context is not in the experience of the construers, for example, if their family tradition is to open presents on Christmas Eve, or they are not aware of the tradition, the Christmas frame may not easily be invoked. To add a similar example, the utterance *It's unreasonable to make everyone in the company come to work on January 3* would be understood as a truism by construers who invoke the frame of the New Year's holiday and the associated three-day celebration in Japan, even without an explicit mention of *sanganichi* 'the three-days celebration period'. Other conditions such as the speech situation and by whom and to whom this sentence is uttered are also relevant for understanding the meaning of the sentence. The theoretical effort of Frame Semantics to incorporate the significance of human involvement into semantics is also evidenced by its appeal to encyclopedic information about what lexical items evoke. For example, *restaurant* is more than an inanimate object or even a commercial establishment where food is served; it also evokes encyclopedic

[1] Fillmore (1982) credits Talmy (1980) and Langacker (then forthcoming, 1986, 1987) for his developing ideas of the semantics of grammar.

information including the staff members, such as the cooks and servers, the furniture such as tables and chairs, the menu, and the types of food that are served.

Influenced by the contemporaneous theory of prototypes in cognitive psychology (Rosch 1973, among others), Frame Semantics applied the notion of 'prototype' to the understanding of the categories that linguistic items index as well as the background information in which they fit (Fillmore 1975). The prototype-based view offers an advantage over the feature-based checklist of necessary and sufficient conditions for semantic categories, which was then promoted within transformational grammar.[2] Fillmore argued that a simpler prototypical understanding of a word allowed "the complexity of fit between uses of the word and real world situations to be attributed to the details of the prototype background frame rather than to the details of the word's meaning" (Fillmore 1982: 118). Therefore, for example, the age at which a person would cease to be categorized as an *orphan* does not need to be included in the specification of the category because that understanding is a part of the background prototype. An *orphan* can be defined simply "as a child whose parents are no longer living" (Fillmore 1982: 118) against the prototypical background (assumed in a society such as the USA) in which, for example, children are expected to be protected and guided by parents who assume responsibility for them until they can take care of themselves. We might imagine a situation in which a socially independent adult in his/her sixties said in an informal conversation *I became an orphan* when his/her remaining parent passed away. The prototype account can explain the recognizable mismatch yet comprehensible and socioemotionally meaningful reference to the category 'orphan' that this utterance created. A componential analysis, in contrast, would either not be able to provide an interpretation of such a use of *orphan* or would judge it ill-formed. Another category (from American culture) that Fillmore discussed is *breakfast*. The fact that some eateries advertise that "breakfast is served all day" illustrates that the category 'breakfast' can be used in many different contexts when only some of the prototypical conditions such as the time of the day when it is eaten (morning), the timing in daily activity (eaten after first waking up from sleep), and a particular set of foods that are expected are met. The *breakfast* mentioned in the above advertisement satisfies the third condition of the prototypical breakfast, the menu, although not the others (Fillmore 1982: 118–119). Salient examples of prototype categories can vary in different cultures and societies. We may therefore conclude that Frame Semantics has a potential to incorporate variations in analysis as long as it eschews rigid stereotypes.

[2] See Geeraerts (2016) for a discussion of possible problems and prospects of prototype theory especially from the perspective of Cognitive Linguistics.

1.3 A Variety of Frames: Cognitive Frame, Interactional Frame, and Others

As mentioned in Section 1.2, the establishment of Frame Semantics in the late 1970s and 1980s (e.g., Fillmore 1976, 1977b, 1977c, 1982, 1985) was marked by a shift of theoretical emphasis from a collection of universal semantic roles for the description of verbal meaning to the envisionment of the scene (frame) in which a meaning-bearing element conceptually fits. Fillmore's use of the term frame also shifted from the semantic role-based case frame (Fillmore 1968, "The case for case") to a knowledge structure anchored in human experience and human institutions, which has been referred to variously (independently and overlappingly) as 'scene', 'frame', 'interpretive frame', 'cognitive frame', 'interactional frame', 'linguistic frame', and 'abstract frame'. As noted by Fillmore (e.g., 1985, 2006), this transition coincided with, and was influenced by, the contemporaneously flourishing studies of conceptual frames in other-than-linguistics disciplines such as psychology, sociology, and Artificial Intelligence, including Bateson (1972 [1955]), Goffman (1974), and Minsky (1975).[3] The distinction between the frame concepts in Frame Semantics and those in other disciplines is, according to Fillmore (1985, 2006), the explicitness of the connection between the frame and the linguistic description. In describing Minsky's 'birthday frame' (1975) and Goffman's 'play frame' (1974), Fillmore (2006: 615) points out that no explicit linguistic expression (e.g., *birthday*, *play*) was used to evoke such a frame. In a more recent development in Frame Semantics informed by corpus studies, namely framenets, these two conceptual strands, the linguistic and non-linguistic, are more fully merged (Fillmore 2006), although they are still treated as independent concepts: 'small frames' associated with individual predicates as compared with 'big frames', the institutional concepts identifiable by names (e.g., birthday, commerce; Fillmore 2006: 616).

The distinction between the uses of the term frame in the sense of Case Frames and that of Frame Semantics is clear but the further distinctions among the variety of terms referring to frame concepts within Frame Semantics may not be entirely transparent. One such term is 'scene', a term introduced in the early stages of Frame Semantics (Fillmore 1977a), which attracted much attention. Acknowledging that the term scene may cover too many concepts, Fillmore (1977a: 126–127) suggested that more distinctions can be expressed using different terms such as 'real-world scenes', 'language frames', 'schemata of concepts', and 'a text model created by the interpreter'. The term scene is more recently "used as informally as, say, *situation* or *state of affairs*" in the framework of FrameNet (Fillmore reported in Andor 2010: 162).

[3] See Tannen (1979) for a useful sketch of the history of these works. Similar concepts were also proposed in linguistics. Chafe (1977) proposed 'schema' in analyzing the verbalization of cognitive (non-verbal) knowledge of the world; Lakoff (1987) used 'idealized cognitive models', which includes Fillmore's notion of frame; Langacker (1987) proposed the notion of 'profile' against the background 'base', the latter corresponding to Fillmore's frame.

Two terms introduced as major concepts by Fillmore (1976, 1982, among others) were 'cognitive frame' and 'interactional frame'. Although there has been some variation in terminology and the exact definition (e.g., interpretive frame, abstract frame in place of cognitive frame) and although Fillmore's later work did not discuss interactional frames, the two concepts have remained active and important. The scope and importance of these two major concepts is summarized in the following sections.

1.3.1 Cognitive Frame (and Associated Terms)

The examples given in Section 1.2 mainly pertain to the idea of cognitive frame. An example of cognitive frames often mentioned by Fillmore and others is the commercial event frame, as discussed in Section 1.2. In arguing for the concept of cognitive frame as a linguistically relevant conceptual structure, Fillmore employs the commercial event frame "to show that a large and important set of English verbs could be seen as semantically related to each other by virtue of the different ways in which they 'indexed' or 'evoked' the same general scene," stating that "the frame structures the word-meanings, and that the word 'evokes' the frame" (1982: 116–117). At that stage of Frame Semantics, Fillmore considered a cognitive frame, such as the commercial event, to be *evoked* by linguistic material, and the same view is expressed in Fillmore (2006: 614), contrasting with the non-linguistic use of cognitive frame as a frame that is *invoked*: "There is a common nonlinguistic use of this word [cognitive frame] where it refers not to what a piece of language evokes in the mind of an interpreter, but what kinds of conceptual structures an interpreter invokes to make sense of some experience." In Fillmore's later work, however, the term cognitive frame was apparently used in a different sense: For example, "I shall use *cognitive frames* to refer to the structures that people *invoke* to make sense of their observations and *linguistic frames* to refer to those frames that are conventionally associated with specific linguistic material" [emphasis added]; Fillmore 2008: 1).

The term 'abstract frame' has also been used, although infrequently in Frame Semantics, to describe the background frame that motivates the category expressed by a linguistic item, similarly to (the earlier use of) a cognitive frame (Fillmore 1985: 234; Andor 2010: 163). The term 'interpretive frame' has been used more inclusively (1982, 1985), to suggest any structure of conceptual or contextual knowledge that is used to understand a wide variety of linguistic materials and texts. The distinction between an interpreter-invoked frame and a linguistic material-evoked frame is interestingly reminiscent of 'cognitive scenes' and 'linguistic frames' mentioned in one of the very early papers on Frame Semantics by Fillmore, "Scenes-and-frame semantics" (1977a).[4] Distinctions between evoking and invoking, and between frames

[4] Matsumoto (1988, 1997) uses a somewhat similar distinction between a frame based on linguistic material (predicate, noun) and the world-view in discussions of semantic frame integrations in Japanese noun-modifying constructions.

evoked by strictly linguistic material and more general cognitive knowledge could be an analytically meaningful exercise. However, close observation of language use in a variety of situations may support the sentiment expressed in the last sentence of "The Merging of 'Frames'": "Whether in the end there is a principled distinction between cognitive frames and linguistic frames, as conceptual entities, in a world in which anything at all can be a target of human intellection, and discourse, remains an open question" (Fillmore 2008: 10–11).

Another example of the application of the concept of cognitive frame given by Fillmore (1976: 25–26) is in an account of contrasting expressions such as the Greek nouns *brotos* and *anthropos*. According to Fillmore (crediting Coseriu), both nouns designate a human being, but the former is in contrast with gods while the latter is in contrast with animals. An analogous well-recognized pair in English is *land* and *ground*. Both refer to the same thing, the dry surface of the earth, but they are semantically situated in different larger frames: *Land* is contrasted with *sea*; *ground* is distinct from *air*. In both examples, the same basic fact can be presented from different perspectives depending on the background cognitive frame in which the word is situated. Similarly, as another example, someone who is unwilling to spend money easily can be described as *stingy* (as opposed to *generous*) or as *thrifty* (as opposed to *wasteful*). In such cases, negation can be used at two different levels – within a category or between categories – for example, *He is not stingy* can be used to mean 'He is generous' or 'He is thrifty'. More examples are given in Fillmore (1982).

1.3.2 Interactional Frame

The interactional frame was described as "the framing of the actual communication situation" and as "a second and equally important kind of framing" (Fillmore 1982: 117). It is concerned with schematization of the interaction between the speaker/author and the hearer/reader. Such framing covers a wide range of phenomena: pragmatic matters including deixis, presuppositions, speech acts, the cooperative principle, and routinized speech events; matters of narrative structure, such as text and discourse types and genres (e.g., folktale, business contract, obituary), and how a text starts, develops, and ends; and so on. Interaction is accomplished by "having in mind an abstract structure of expectations which brings with it roles, purposes, natural or conventionalized sequences of event types, and all the rest of the apparatus that we wish to associate with the notion of 'frame'" (Fillmore 1982: 117). To describe in detail the types and functions of interactional frames is a vast and complex endeavor, and the target data are more challenging to collect. It is therefore not surprising that discussions on the topic of interactional frame did not continue in later papers of Fillmore after the 1990s.

The concerns motivating the concept of interactional frame remain crucial factors for describing linguistic constructions that are not what generative

theories consider core phenomena or that are contextually varied. 'Unusual' forms may be chosen in a specific genre; expectations may also depend on the purpose of the communication. Notwithstanding the difficulty, a notable number of researchers have continued to pursue Fillmore's original goal of including all factors that are relevant to understanding the mechanism of language as a system based on human experience. Such work includes research on interaction and conventional discourse (e.g., Fried & Östman 2005; Östman 2005), genre and context (e.g., Nir & Berman 2010; Fischer 2015; Nikiforidou 2015, 2021), the role of pragmatics (e.g., Finkbeiner 2019), sociocultural perspectives (e.g., Matsumoto 2008, 2021; Croft 2009), and interactional Construction Grammar (Bordería & Fischer 2021), to name a few.

The importance and complexity of interactional frames can easily be illustrated by an attempt to account for greetings. Fillmore briefly discusses the greeting frame and states that

> In some languages a greeting frame specifies that the socially superior initiate the greeting, in some it is the socially inferior, while in others the initiator role is unassigned or is based on other considerations; in all languages the form of a greeting is determined from a restricted inventory of topics and expressions, many of these dependent on highly specific contextual conditions. A part of knowing a language is knowing or recognizing a large number of such frames, and knowing what linguistic choices are relevant for each of them. *(1976: 25)*

Using *Good morning, sir* as an example, he points out the dependence on pragmatics, "the knowledge of the appropriate and meaningful contexts in which this purpose can be achieved with this utterance." Knowing all the appropriate information to greet successfully is not very simple, as it involves complex pragmatic and sociocultural knowledge and practice. *Good morning, sir* is a conventionalized phrase that indexes a variety of meanings: It is a formal greeting in the morning expressing deference to the hearer, but also conveys information about the speaker's persona. The rich array of interactional factors and the contrast with alternative greetings, such as *Wassup dude*, and how interpretations of the pragmatic import of such variants has changed over time, call for analysis in terms of interactional frames and emphasize the need and potential for further development in that area.

1.4 Grammaticality Explained by Frame Semantics

We have considered the main features of Frame Semantics in the previous sections. This section will illustrate how the concept of frames effectively explains grammaticality (or well-formedness), particularly from the perspective of incipient construction grammar, by tracing the path from Frame Semantics to the establishment of Construction Grammar. Together with a number of past and more recent studies (e.g., Lakoff 1987; Shibatani & Thompson 1996; Fried & Nikiforidou 2013; papers in *Constructions and*

Frames, to name only a few), the observations will contribute to the thesis that Frame Semantics is an integral part of Construction Grammar. Affirming Frame Semantics' applicability to languages other than English, two non-English constructions, German bare binomials (Lambrecht 1984) and Japanese noun-modifying constructions (Matsumoto 1988, 1997), are used for illustration. These constructions were not accounted for by conventional syntactic analyses and were generally relegated to the periphery, perhaps because of the irregularity in the form and use (apropos German binomials) and the construction's non-prototypicality among more commonly studied languages (apropos Japanese noun-modifying clauses). In each case, Frame Semantics is able to provide principled explanations of the grammaticality of these atypical constructions. The illustrations also provide evidence that Frame Semantics has been greatly contributing from an early stage toward achieving an important aim of Construction Grammar: accounting for both so-called core and peripheral phenomena in grammar.

1.4.1 German Bare Binomial Expressions

Lambrecht (1984) focuses on German formulaic binomial expressions of the form *N und N*, and proposes an analysis appealing to the concept of frames in order to account for their production and use. In the current parlance of Construction Grammar, the expression with its particular form and meaning/function would be referred to as the *N und N* construction (or bare binomial construction), and the process of its becoming a recognized structure could be considered as an instance of 'constructionalization' (Traugott & Trousdale 2013). Furthermore, its relation to genres and how some instances have become or will become conventionalized are obvious topics for investigation. In addition to illustrating how notions in early Construction Grammar were conceived of, what is notable in Lambrecht's (1984) study is that he finds the concept of frame essential in describing the grammaticality of the construction.

From the point of view of ordinary conjoined nouns, the formulaic binomial expressions at issue appear anomalous in their morphosyntax and subtly different in the conveyed meanings. Ordinarily in German, nouns are preceded by determiners. However, the conjoined nouns at issue, which are found especially in formulaic speech associated with elevated registers, are not preceded by any determiners, for example, *Rechtes und Ordnung* 'law and order' vs. *des Rechtes und der Ordnung* 'the law and the order', *Freiheit und Gleichheit* 'freedom and equality' vs. *der Freiheit und der Gleichheit* 'the freedom and the equality'. On account of this structurally striking difference, Lambrecht terms this expression the Bare Binomial (BB).

A BB also presents other differences in morphosyntactic behavior, as compared with regular conjoined nouns (no inflection, the two nouns cannot be separated, no modification), as well as semantic disparities, suggesting non-compositionality of the structure. The construction therefore inhibits a syntactic analysis and resembles an idiom (the BB's lexical status is also suggested by the fact that the

verb agreement tends to be in the singular). On the other hand, it also differs from an idiom since a BB's structural pattern is productively used to create new pairs of BBs.

In view of the syntactically ambiguous and problematic properties of BBs, Lambrecht argues that their production is subject to complex semantic and pragmatic constraints, which are subsumed under general frame-semantic principles. For an instance of German BB to be construed as a grammatically well-formed expression, the nouns in the pair need to be interpreted as well-linked within a single frame, which may be evoked by the BB itself, by a pre-existing cognitive relation between the denotations of the paired nouns, or by the external context. These three ways of frame evocation correspond to three general types of BBs: (a) lexicalized and irreversible, (b) novel but semantically motivated, and (c) semantically unmotivated but pragmatically constrained. The following examples (3a)–(3c) illustrate the three types, respectively.

(3a) *Sie spielte {Katz und Maus / *Maus und Katz} mit ihm.*
'She played cat and mouse with him.'

(3b) *{Katze und Maus / ?Maus und Katze} sind Feinde von Natur.*
'Cat and mouse are natural enemies.'

(3c) *{Katze und Maus / Maus und Katze} liefen weg, als ich näherkam.*
'(The) cat and (the) mouse ran away when I came closer.'

(Lambrecht 1984: 777 [36a, b, c])

The order of the nouns in (3a) is irreversible. The expression is highly formulaic, evoking its own frame that is culturally relevant, and its meaning is understood even without contextual support. In a novel but semantically motivated BB as in (3b), the order of the two nouns is *not* completely irreversible and the BB is not fully conventional. When the pairing of the two conceptual frames evoked independently by each noun is supported by a pre-existing cognitive relation (e.g., the pairing of cat and mouse cognitively makes sense), this is consistent with the cognitive frame of the binomial that is expressed as BB. The appropriateness of pairing in these cases is again dependent on the cultural setting. (3c) exemplifies instances of BB where no inherent semantic motivation exists for the pairing, unlike (3a) and (3b), except that the frame concurrently evoked by the discourse (e.g., the rest of the sentence) anchors the referents of the nouns as a pair. German bare binomial constructions thus illustrate the utility of the concept of frames in accounting for the well-formedness of constructions that syntactic analysis cannot explain.

1.4.2 Japanese Noun-Modifying Clause Constructions

Japanese noun-modifying clause constructions (NMCCs) provide another example that underscores the ability of Frame Semantics to offer a systematic analysis of an atypical construction. In Japanese NMCCs, the two main

constituents, the clause and the noun, are simply juxtaposed to each other, that is, [[Clause] N], while a wide variety of semantic relations are conveyed. As Japanese is a head-final language, the modifying clause precedes the head noun. The only basic structural requirement is that the predicate in the clause should be in the prenominal form, although this requirement may be relaxed in some emotive contexts.[5] There is no explicit marking specifying the grammatical or semantic relation between the two constituents, the head noun and the modifying clause (i.e., there are no relative pronouns, no complementizers, no markings in the clause predicate or the head noun). For example, *[[aisukuri:mu o katta] hito]* '[[ice cream ACC bought] person]' can be interpreted as, for example, 'the person (who) bought ice cream', 'the person (from whom) (someone) bought ice cream', 'the person (for whom) (someone) bought ice cream', depending on the participants' understanding of the present linguistic and non-linguistic context and the background of the utterance. Exactly the same basic form is used not only for equivalents of relative clause constructions like the above examples, but also for noun complements and other instances that cannot plausibly be categorized as either relative clause or noun complement constructions, such as *[[aisukuri:mu o katta] uwasa]* 'the rumor that (someone) bought ice cream', *[[aisukuri:mu o katta] koto]* '(the fact) that (someone) bought ice cream', *[[aisukuri:mu o katta] otsuri]* 'the change from (someone) buying ice cream', *[[aisukuri:mu o katta] wake]* 'the reason why (someone) bought ice cream', to mention just a few. As there is no structural requirement in Japanese for arguments to be expressed in a sentence (or a clause), there can be more than one unexpressed argument in a relative clause equivalent, for example, *[[katta] mise]* 'the shop where (someone) bought (something)', making it impossible to identify a syntactic gap.

The fact that there is no syntactic representation of the different relations between the main constituents in Japanese NMCCs, particularly in view of the existence of languages that do syntactically display the distinction (e.g., English), indicates that the Japanese NMCC is best considered as a single construction, rather than a collection of syntactically disparate constructions that happen to manifest the same surface form. In the mid to late 1980s, when investigations of (incipient) construction grammar were largely focused on English and productive formulaic constructions, Frame Semantics was the most promising theoretical foundation that could provide a principled analysis for Japanese NMCCs (Matsumoto 1988, further developed in 1997). It could do so because it integrated form, meaning, and usage (syntax, semantics, and pragmatics) based on human experience, and its ideas are still persuasive and relevant in the current efforts in understanding grammar.

The structure of the NMCC implies an expectation of semantic coherence between the two main constituents, creating a conceptual unit (this condition would be interpreted as the form–meaning or form–function pairing in terms

[5] The basic description and analysis of the noun-modifying construction are based on Matsumoto (1988, 1997, among others).

of Construction Grammar). To put it differently, the NMCC is a structural realization of a conceptual unit (or frame) based on the accumulated experience and knowledge of the construers. Accordingly, it is not that any combination of clause and noun in the [[clause] N] pattern is possible or can be coerced into creating a conceptual unit. When we seek to explain systematically what instances of the construction are readily accepted, Frame Semantics is again effective. Naturally occurring spoken and written data show that successful (production and) construal of the construction crucially depends on whether the conceptualization of prototypical scenes of the event/state evoked by the linguistic materials of each constituent can integrate into one unified frame. Matsumoto (1988, 1997) suggested three general patterns of semantic/pragmatic integration based on which constituent plays the role of anchoring frame (or host) for the semantic and pragmatic coherence/integration: the 'Clause Host' (CH) type, the 'Noun Host' (NH) type, and the 'Clause and Noun Host' (CNH) type.

In the CH type NMCCs, a variety of elements (roles) are potentially associated with a frame evoked by the clausal predicate, as claimed by, for instance, Fillmore (1977c, 1982) and Fillmore and Atkins (1992). These include frame-specific elements as well as elements such as time and place if the predicate designates an action, which may be viewed as inherited by virtue of more general semantic properties of the predicate. Such frame elements offer a potential spot in the frame for the meaning of the head noun to fit in. This type of NMCC largely corresponds to relative clauses that modify arguments or adjuncts, but notably includes relationships that cannot be represented by a case marker (or a preposition, if it were in English), and therefore fall outside of a syntactic account. An example (given earlier) is *[[aisukuri:mu o katta] otsuri]* 'the change (i.e., tender minus cost) from (someone) buying ice cream'. Since the frame evoked by *katta* 'bought' can include sequential events as in a script or a story (see Figure 1.4), a byproduct that resulted from the exchange of goods and money is always a potential element and the head noun *otsuri* 'change' can be integrated in the frame as such an element.

An important point to note in analyzing the NMCC *[[aisukuri:mu o katta] otsuri]* 'the change (i.e., tender minus cost) from (someone) buying ice cream' is that *otsuri* 'change (i.e., tender minus cost)' semantically calls upon the condition that engendered its existence, evoking a frame that includes such a condition as an element. Other instances, such as *[[doa o tataku] oto]* 'the sound of (someone) knocking at the door', in which the referent of the head noun makes salient its production source, show that the head noun can evoke a frame for the clause content to be integrated, while at the same time the clause predicate can evoke a frame in which some consequences of the described event/state can be an element. These are CNH type instances as the direction of frame integration is mutual to create a conceptual unit.

In the NH type NMCC, a frame evoked by the noun functions as a host frame for the content of the clause to be integrated. In one of the examples mentioned above, *[[aisukuri:mu o katta] uwasa]* 'the rumor that (someone)

bought ice cream', *uwasa* 'rumor' can evoke a frame that includes the content as an element since the meaning of rumor calls for its content. This type includes, but is not limited to, the equivalents of noun complements in English (*the fact that . . .*, *the story that . . .*) and extends to instances used as a verb complement (*I heard that . . .*).

In all cases, the integration of frames needs to be supported by the construers' cultural and personal experiences of the world (their 'world-view') including encyclopedic knowledge that is expected to be shared by the participants of the interaction. Some experience and knowledge are more widely shared by speakers than others and the 'envisionment', or mental image, of the scene may vary. For instance, *[[atama no yokunaru] hon]* '[[head GEN/NOM improve] book], head improving book (one's head improves if one reads this book)' presents no interpretive problem among most speakers of Japanese, but in a society in which book reading is not a common activity, the expression may not be interpretable. On the other hand, *[[aisukuri:mu o katta] hon]* '[[ice cream ACC bought] book]' may not easily be understood by many Japanese speakers, but it might be construable by a subgroup if they happened to share knowledge of some relation – such as a causal relation – between a certain book (or type of book) and purchases of foods like ice cream.

There are many other instances of Japanese NMCCs in which the semantic/pragmatic coherence of the construction involves sociocultural relevance. As was described above, the grammaticality of Japanese NMCCs is determined by properties and conditions that fall outside the central concerns of conventional syntax. In fact, similar constructions have been observed to a varied degree in a number of languages in Eurasia (Matsumoto et al. 2017): Mari, a Uralic language (Matsumura 1983), Gavião, a Tupian language of western Brazil (Moore 2012), and others. These cases indicate the potential of the frame concept in effectively describing grammaticality of linguistic forms and functions in a variety of languages.

As the above discussion of German and Japanese constructions illustrated, Frame Semantics, largely because it is designed to account for forms and meanings as part of human experience, is able to account for grammatical phenomena that purely syntactic analysis is indifferent to and incapable of explaining. The features of Frame Semantics have continuously been refined and incorporated in the development of Construction Grammar.

1.5 Retrospect and Prospect

It is not an overstatement to say that Frame Semantics changed the study of semantics. With its view that linguistic units and categories exist for the purpose of communication and understanding and are anchored in human experiences and institutions, Frame Semantics significantly expanded the scope of theoretical linguistics while broadening the range of phenomena

that can be explained by appeal to regular principles.[6] Frame-semantic theory maintained that words and texts are to be understood against a conceptual background, with their pragmatic meaning supported by world knowledge. While these pioneering insights are now more or less assumed among researchers whose interests go beyond truth-conditional semantics, they were epoch-making when first advocated, they foreshadowed Construction Grammar, and they formed the basis of the framenet project(s). The original papers on Frame Semantics offer a depth and breadth of ideas and observations which are still worth (re-)examining and further developing in current research.

More research has been conducted in languages other than English, corpora have been actively utilized to provide empirical evidence, and computational studies are flourishing. The increased access to corpora can help accelerate long-awaited studies of elements other than verbs, such as nouns and adjectives. The area that presents probably the biggest potential for theoretical advancement is the question of how the concept of frames can be situated in the interactional environment. Fillmore wrote:

> The conventional (or 'literal' or 'properly linguistic') meaning of a sentence is that set of conditions on the interpreter's understanding of the sentence which figure in all of its contexts; in determining the situated meanings of uses of the sentence, one integrates the sentence's conventional meaning with its linguistic and extra-linguistic context. *(1985: 233)*

This is an important question, and it is interesting to consider how we can represent such an integration. Incorporating cross-disciplinary concepts or ideas from linguistic sub-fields (e.g., sociolinguistics, anthropological linguistics, interactional linguistics) seems promising, in the same way that the influence of frame-related concepts from non-linguistic fields was beneficial in the earlier theoretical developments. For example, frame concepts of the type discussed by Goffman seem still useful since linguistic expressions cue a meta-message regarding the frame(s) of an ongoing interaction. In a similar fashion to the meta-message 'this is play' that is signaled by a dog's 'play bow' to establish a play frame (Goffman 1974), utterances such as *what's up?* (or *whassup?*) and *how do you do?* can convey a meta-message 'this is a greeting' establishing a frame of greetings. These conventionalized phrases, however, point to additional sociocultural information. Here, the idea of ordered indexicality appears to be useful too, as it is possible to consider that a linguistic material indexes, in addition to its semantically conventional meaning, socially and interactionally relevant meanings, such as one's stance, formality, or a specific genre, in a specific speech/text context. This can be represented as multiple layers of ordered indexical meanings.[7] For example, *what's up?* as

[6] The concept of frame also provided a new perspective on traditional semantic notions such as ambiguity, metaphor, antonymy, etc. (for a detailed discussion, see Fillmore 1982).

[7] See Silverstein (2003) for discussions of ordered indexicality and Matsumoto (2021) for its application in grammatical constructions.

a greeting (in the USA) indexes informality and rapport while *how do you do?* is notably formal. These may in turn index an additional layer of meaning related to characteristics of a person who chooses to use such greeting expressions. In particular, the greeting *how do you do?* is generally considered old-fashioned at the present time and is not likely to be used particularly by younger speakers. In contrast, the use of *what's up?* would be more associated, through frequency of use, with young speakers who favor a stance of informal intimacy.[8] Speakers can align with, or be in opposition to, their age cohort through the socially mediated meaning of such expressions.

Concepts deriving from frames are also useful in analyses of changes in grammar over time (e.g., Fried 2009; Law 2019). Frame Semantics has thus provided a wealth of theoretical resources to tackle these challenging topics.

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[8] Schmid (2015), for example, proposes a process of conventionalization that includes innovation, co-adaptation, diffusion, and normation, which takes place in societies and speech communities.

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