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Depiction of Events in ASL:
Conceptual Integration of Temporal Components

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Paul Gary Dudis

Abstract

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Doctor of Philosophy in Linguistics

University of California, Berkeley

Professor Eve Sweetser, Chair

This dissertation is an examination of a type of iconicity in ASL involving temporality as exhibited in the depiction of events. Surrogate blends are known as resulting from mapping components of a given mental space onto signer's bodies and the surrounding space. In such blends, the time progression associated with the event being depicted can be mapped onto Real Time, e.g. the time in which spoken or signed utterances are produced. This mapping of distinct temporal components results in a unique blended component which I call depicting time. The examination of the role of such mappings is relevant to a general understanding of surrogate blends in language. However, the relationship between Real Time and depicting time is shown to be necessarily and importantly different for signed languages than for spoken languages. During surrogate blends in ASL that have depicting time, most manual or nonmanual gestures not understood to be produced by the signer as surrogate need to have associations with depicting time; otherwise depicting time is necessarily suspended. Depicting time is shown to be a component of not only certain ASL verbs, but of other constructions as well. The schematic aspectual construction that serves as an input in the creation of

aspectual forms of verbs has this component. As a result, many aspectual forms of verbs which are seen to inherit depicting time from the aspectual construction are also seen to activate a surrogate blend. Similar observations are made for other, more complex constructions examined in this dissertation. The expectation-fulfillment construction, where the signer as surrogate is depicted as performing an event in anticipation of a second event, has a backward head nod and a widening of the face that marks the punctual occurrence of the second event. This set of non-manual signals is also understood to indicate the existence of a mental space of the surrogate's recognition of the anticipated event. In descriptions of a gradual change of state or the completion of an event, a slow head nod is produced prior to the end of the construction. Another gradual change of state construction involves a slower backward head nod and a transitioning between two different facial expressions. In all these constructions, it is crucial that depicting time proceeds unbroken and that the nonmanual signals be compatible with depicting time. Examination of the semantics of these constructions allows us to consider how ASL expresses resultativity, which is also addressed in this dissertation.

Eve E. Suvanto

16 Aug '04

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Introduction

This dissertation investigates the ways ASL signers describe complex events. Signed language researchers already know that signers use their bodies as a whole, parts of the body, and surrounding space to represent individuals, entities, and places. These are some of the ways that iconicity is present in ASL and other signed languages. Such representations play various roles in the description of complex events.

ASL also exhibits iconicity with regards to temporality. One such iconicity involves the production of a sequence of verbs or expressions to describe a close succession of events. The ordering of such a sequence often indicates which event in the scenario occurred first and which came afterwards. For example, SHOUT-OUT-LOUD GET-UP “I shouted and stood up” and GET-UP SHOUT-OUT-LOUD “I stood up and shouted” describe two different scenarios. ASL is not unique in this regard; spoken languages also exhibit this type of temporal iconicity.

The temporal iconicity of interest in this dissertation includes not only the sequencing of verbs or expressions, but also the utterance time during an individual sign or more complex construction is produced. For example, the time it takes to produce the citation form GET-UP is not necessarily iconically related to the Event Time of the “getting up from a seated position” scenario. However, it is possible for the signer to prolong the sign GET-UP to depict the effort expended arising from a seated position. The protracted form of GET-UP is the result of combining the citation form GET-UP with an aspectual construction. Such a combination involves the mapping of utterance time and Event Time to create **depicting time**, which is the type of temporal iconicity examined here. The creativity underlying depicting time is similar to that which

underlies the representations of life-sized individuals by the signer's body, different entities by manual articulators, and places represented by the empty, physical space.

To describe conceptual products arising from the mappings of the body, surrounding space, and utterance time on one hand with their counterparts of the scenario being described on the other, I use Fauconnier and Turner's (1994, 1996, 2001) theory of **conceptual blending**. As demonstrated by the works of Liddell (1995, 2003, etc.) and Dudis (2000, 2004), this theory has proven to be very valuable in obtaining insights from the conceptual work performed by signers that include their bodies and the space surrounding them. Chapter 1 builds on previous discussions of such conceptual products.

I adopt a **construction grammar** (Fillmore, et al. 1988; Langacker 1987, 1990, 1991; Goldberg 1995) approach to ASL expressions that describe complex events. A major claim made in this dissertation is that the products of conceptual blending, occurring in everyday discourse, are integral parts of abstract grammatical units called **constructions**, which vary in complexity and schematicity. In Chapter 2, I argue that aspectual constructions specify that the signer represents a participant and utterance time represents the referent time of the complex event being described. For example, the protracted form of GET-UP also involves a facial expression depicting effort while the forwards physical posture of the signer depicts a similar movement of an individual who is having a hard time getting up. Such iconicity is not part of the citation form of GET-UP, but rather is part of the aspectual construction, which also has a depicting time component.

Chapters 3 and 4 build on the constructional analysis of aspectual forms of ASL verbs. Chapter 3 analyzes what I call the *expectation-fulfillment construction* in which

the signer depicts someone performing an activity until an expected event occurs. This construction not only involves depicting time, but a particular sequence of non-manual signals as well. As Chapter 4 demonstrates, depicting time and sequences of non-manual signals are also part of constructions describing gradual occurrences. Chapter 5 includes comparative evaluations of resultatives in English and ASL, and discusses ASL constructions that differ from the temporal iconicity exhibited by the constructions analyzed in Chapters 3 and 4. Overall, this dissertation demonstrates how essential it is to consider the uses of depicting time in the description of complex events, and recommends a continuing broad investigation of temporal iconicity in the grammar of ASL and other signed languages.

Chapter 1: Surrogate Blends, Depicting Verbs, and [Real-Time]

0.0 Introduction

This chapter describes a temporal property that is found in **surrogate blends** and ASL verbs that **depict** events. An example is illustrated in (1), which describes an event during a baseball game in which an outfielder catches a baseball.

1)



hitting of the ball

path of the ball



[outfielder] backpedaling

preparing to catch



catching of the ball

taking the ball out



setting the ball on its path.....

The ball was hit, and he saw it sail through the air. He took a few steps back, watching its trajectory. He caught the ball and hurled it back.

Throughout (1) a surrogate blend is activated. A surrogate blend is one of a variety of **conceptual blends** conceptualizers produce (Fauconnier and Turner 1994, 1996). A four-space model diagrammed in Figure 1 is typically used to describe such blends (although more spaces can be involved). This diagram represents the surrogate blend portion created in (1), which I now describe.

The leftmost circle, Input 1, represents conceptual structure, or mental space (Fauconnier 1985), which is structured by the frame of **BASEBALL GAME**.¹ This mental

¹ I put names of frames in smaller-sized, capitalized letters in New Courier font. Glosses of ASL signs are in regular-sized, capitalized letters in Times New Roman font.

space includes the *outfielder* and the *baseball* as conceptual elements. The *day* and *place* of this specific baseball game are also part of this mental space input. The rightmost circle, Input 2, represents Real Space (Liddell 1995), which here is the addressee's conceptualization of the surrounding environment, including the signer. The upper circle is the **generic space** which, through abstracting away from the inputs, helps create cross-space mappings between the input elements. As Figure 1 shows, the *outfielder* and the signer share counterpart mappings. These counterparts are projected together into the **blend**, resulting in a new element, the |outfielder|. ² There are also other elements in this blend, such as the |baseball|, but such elements are not visible. This is because their Real-Space counterparts are just portions of empty physical space. The |outfielder| and the |baseball| are examples of what Liddell (1995, 2003) calls surrogates. Surrogates are blended entities that are understood to be present for as long as the surrogate blend is activated. The surrogate blend includes not just surrogates but other properties such as the setting. The *day* and *place* and their Real-Space counterparts are projected into the blend, creating |game day| and |game place|. This is the blend that exists throughout (1), and it partially depicts how this |outfielder| tracks the |baseball| from the moment it is hit until it is caught and thrown back.

² Labels for blended elements are put into brackets, while labels for elements of nongrounded inputs, i.e. not Real-Space, are italicized.

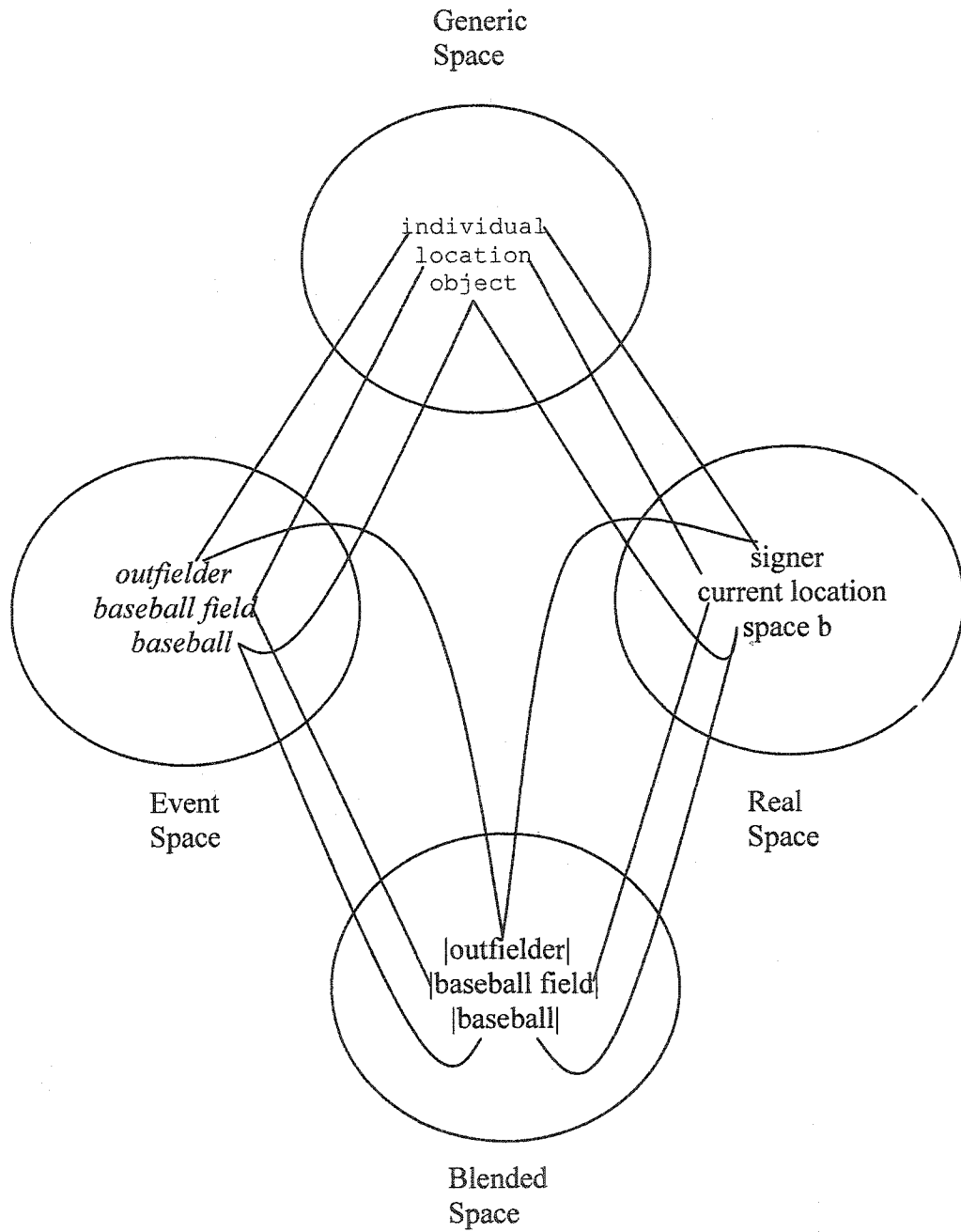


Figure 1: Conceptual blending diagram for (1), surrogate blend portion only

The |outfielder| is not the only visible blended element produced during (1). Other blended elements also co-occur, through the signer's use of verbs of a particular type. These verbs are **depicting verbs**, which "encode meanings related to actions and states...[and] also depict certain aspects of their meaning" (Liddell 2003:261).³ For example, the index fingers used in LEGS-MOVE-BACK are understood to be |legs| that move backwards. Of the three categories of such verbs Liddell (2003) describes, I am chiefly interested in those that depict movement or actions such as LEGS-MOVE-BACK. I have not included the |legs| in Figure 1, because some of their conceptual properties are dissimilar from that of the |outfielder|. Later in this chapter, I demonstrate that cases like these require a **partitioning** of the manual articulators from the signer. Had there been no partitioning involved in (1), the |outfielder| would be seen to move his |index fingers| rather than understood to prepare for the catching of the |baseball|.

The depicting verbs in (1) occur in "logical sequence," i.e. the sequence of the verbs coincides with the sequence of events that is necessary in order for the baseball to be caught and thrown back infield. Moreover, the production of the verb sequence is, impressionistically, accompanied by a temporal quality that appears when the signer is depicting actions. What will be clear is that surrogate blends depicting events exhibit a hybridization of the conceptual temporal properties associated with the two inputs. The Real-Time component in the Real-Space input and the Event Time associated with the

³ Liddell (2003) and others (including Engberg-Pedersen 1993) have found the application of the term "classifiers" to the handshapes of these verbs problematic. I do not provide a discussion of this issue but instead refer the reader to Emmorey (2002), which is a collection of papers from a workshop on classifier predicates in signed languages. Rather than "classifier predicates," I will use Liddell's (2003) label "depicting verbs" instead.

second input are counterparts and projected together into the blend. The blending of these distinct temporal properties results in depicting time, or |Real Space|.

The Real Time it takes to depict the scene in (1) might be comparable in length to the “real world” event, and so the elapse of |Real-Time| in this depiction could be understood to be similar. This is also true with many instances of constructed dialogue in ASL (Winston 1992, Metzger 1995), which is one type of a surrogate blend (Liddell and Metzger 1998). However, the mapping does not have to be precisely second for second. For example, the expression in (2) is motivated by simple reporting such as in answer to a “quick recap” request, rather than narrative description as in (1).



2) “The ball was hit, and it was caught.”

(2) is not as vivid as (1). For one thing, very little attention to the |baseball| is demonstrated. The signer maintains a more direct interaction with the addressee, consequently obscuring the presence of the |outfielder| and impacting on the quality of depicting time as well. Furthermore, the depiction of the time it took for the ball to reach the outfielder’s glove in (1) is not apparent in (2). Nevertheless, the differences between (1) and (2) are a matter of degree; a conceptual blend analysis still applies to (2).

(2) is one type of expression that would seem a counterexample to the claim that depicting time is crucial in the description of events using depicting verbs. Another type of counterexample is illustrated in (3), where in a span of time the signer produces a series of verbs that, unlike with (1), do not describe a sequence of events in a prototypical baseball game.

3)



sauntering a few steps here and there, catching every ball

Here the signer produces a set of verbs SAUNTER-TO CATCH-OBJECT four times in a short time span (the illustration shows only the first two). The intent of the signer is certainly not to depict the outfielder catching four different baseballs during few seconds of actual play. Rather, this is an example of compressing (Fauconnier and Turner 2002) a

longer stretch of game play into the blend, producing a different kind of a |Real-Time| surrogate blend.

The main goal of this chapter is to describe ASL phenomena involving depicting time (i.e., use of |Real Time| to depict the event structures linguistically referred to or depicted). This serves as background for the type of expressions discussed in the following chapters. I begin by contrasting two surrogate blends, one with and one without the property of depicting time. Then I illustrate the relationship between depicting verbs and indicating verbs on one hand and surrogate blends on the other. I follow this with a discussion of several clines associated with depicting verbs. The last section briefly discusses the ability to compress Real-Time and event time into a |Real-Time| with different characteristics. This compression can be seen to occur in aspectual constructions and certain change of state expressions in ASL, discussed in later chapters.

1.0 Surrogate blends with and without depicting time

In this section, I show that Real Time is a property of Real Space that may be selectively projected into a blend. First, I contrast two expressions that may be used to answer a question, one of which includes a surrogate blend. Then I further contrast the |Real-Time| surrogate blend with a surrogate blend that lacks |Real Time|.

1.1 Expressions with and without |Real-Time| surrogate blends

Suppose a signer is asked whether she has seen a remodeled kitchen in the home of a mutual acquaintance. (4) and (5) are possible responses to this question.



4) YES SEE FINISH BEAUTIFUL
 "Yes I saw it. It's beautiful."

5)



YES PRO-1



LOOK-AROUND..... BEAUTIFUL

“Yes I saw it. It’s beautiful.”

Figure 2 partially diagrams the mental space configurations produced by (4). The expression SEE FINISH establishes a past mental space relative to Real-Space. This past mental space is structured by the SEE frame and contains the counterpart of the signer, her *past self* as well as the element *kitchen* (for convenience, I do not include lines connecting the counterparts in the diagram). A kitchen space is also established, in which the room is described as BEAUTIFUL. This mental space is produced following the establishment of the past space. This sequence is iconically represented in Figure 2.

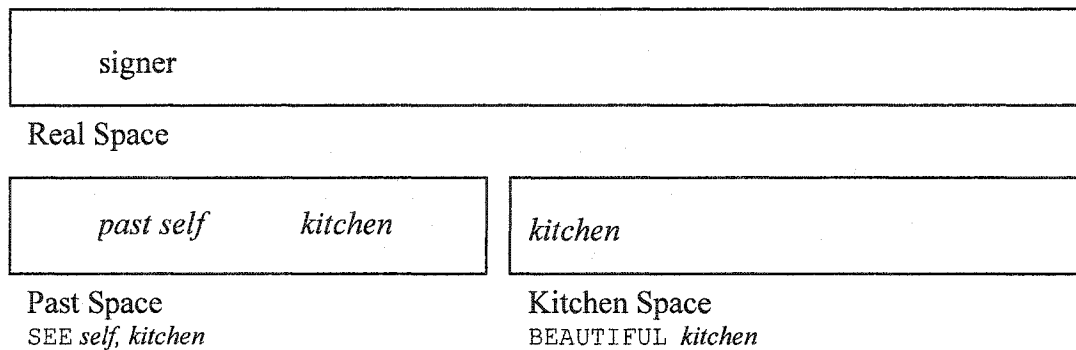


Figure 2: Mental space representation of (4)

There is no evidence that a Real-Space blend is produced in (4). SEE is not a depicting verb, and it is also not directed towards anything in particular. (4) lacks other cues signaling that a Real-Space blend been produced.

Unlike (4), in (5) we have evidence that a surrogate blend has been created. First, let’s consider the verb LOOK-AROUND. This verb calls up a VIEWING frame. In this frame are the participant roles, *viewer* and *object viewed*, as well as the relationship between the two participants. This frame also contains other information pertaining to

the experience of viewing. It happens that part of this experience is understood metaphorically. I will forego detailed analysis at this point and just mention that the Real-Space V handshape of this verb depicts (a partial segment of) lines of sight that the *viewer* has. Moreover, this conceptualization requires that the |lines of sight| be placed between Real-Space locations where the frame participants are understood to occupy. The back of the V handshape is to be directed towards the *viewer* and the fingertips towards the *object viewed*. Thus the use of LOOK-AROUND requires a surrogate blend, so the production of this verb signals the existence of such a blend. LOOK-AROUND is thus a rich but schematic construction. Its participant roles are filled when the construction is blended into the surrogate blend. Depicting verbs are discussed further in Section 3 below.

In addition to the production of LOOK-AROUND, other cues exist which signal the existence of a surrogate blend during the production of (5). The signer's head is slightly raised and moves from left to right, and the eye gaze is directed above the addressee and moves in tandem with the head. The signer's facial expression is also different from that in (4).

Figure 3 partially diagrams the |Real-Space| blend configuration produced by (5).⁴ The leftmost box is the Past Space, which includes the elements *past self*, the *kitchen*, as well as *Event Time*. The rightmost box is Real Space, containing the signer and the surrounding space, as well as Real Time. Counterpart mappings are represented by the dotted lines. The counterpart elements are projected together into a surrogate blend. The *past self* is projected with its counterpart, the signer, into the blend, creating the |past

⁴ It is pretty clear what the generic space of this blend is. For convenience, I do not represent it in the diagram.

self]. The *kitchen* is mapped onto empty physical space to produce |kitchen|. *Event Time* is projected with Real Time to create |Real Time|.

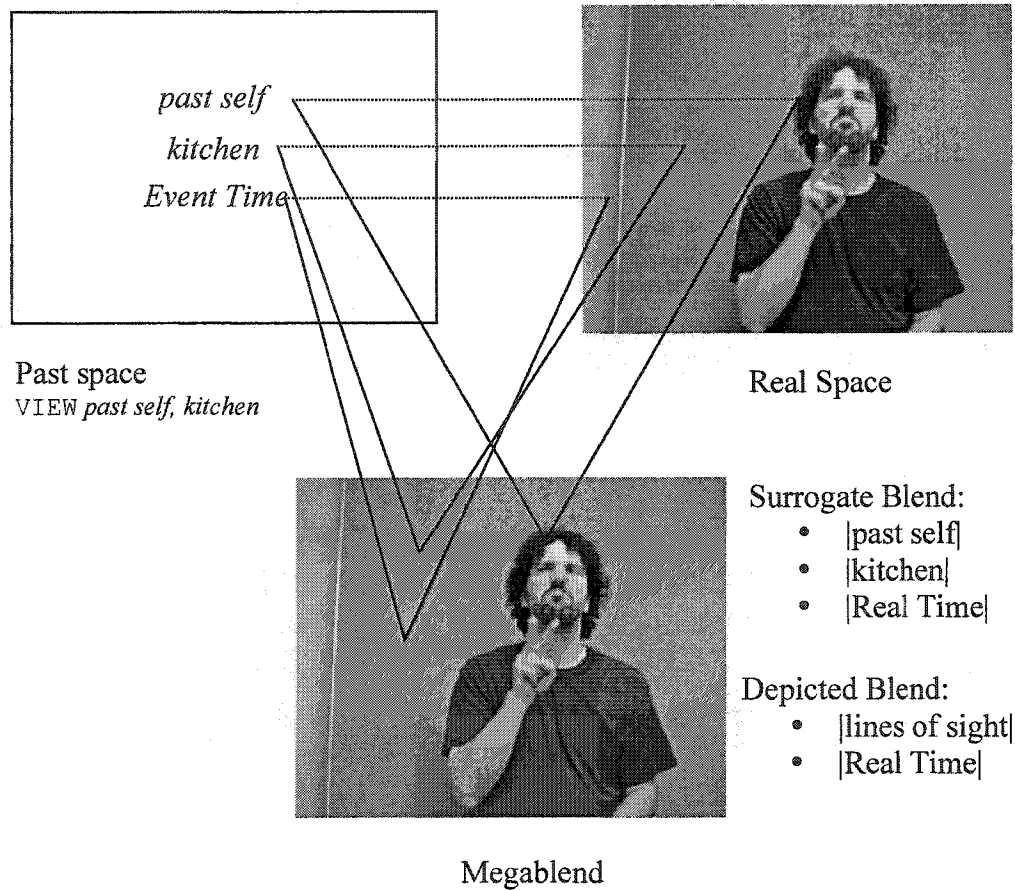


Figure 3: Mental space representation of (5)

The signer also produces the verb LOOK-AROUND. As this is not understood to be produced by the |past self|, it is not understood to be part of the surrogate blend. Instead, it is itself a blend, one that has |Real Time|. As will be discussed later in this chapter, this verb is part of a depicted blend (Liddell 2003). To understand this portion of (5), it is necessary for the two blends to integrate. This results in what Fauconnier and Turner (2002) calls a megablend.

This megablend is for the most part deactivated when BEAUTIFUL is signed. When BEAUTIFUL is produced, the signer's eye gaze returns to the addressee. It is clear that it is the signer, not the |past self| who is signing. In contrast, (6) illustrates how BEAUTIFUL is produced during the activation of a |Real-Time| blend. Here BEAUTIFUL is understood to be produced by the |past self| who is either signing out loud or silently to himself.



6) PRO-1 LOOK-AROUND.....BEAUTIFUL.....LOOK-AROUND

Here the signer's eye gaze does not return to the addressee when BEAUTIFUL is produced. Instead, the eye gaze and head maintain their rightward movement. A return of eye gaze to the addressee is a cue that a surrogate blend is deactivated, but since no such cue occurs in (6), this suggests that the blend remains active throughout the expression. It is also clear from the production of LOOK-AROUND following BEAUTIFUL that the blend continues to be active. As seen in the illustration, the |lines of sight| reappear not at the location it was in immediately prior to the production of BEAUTIFUL, but where its location would approximately be had BEAUTIFUL not been signed. So, unlike in (4) or (5), BEAUTIFUL is part of a surrogate blend.

During the production of |BEAUTIFUL|, the eye gaze and head of the |past self| continue moving to the right. This signals that |Real-Time| continues to progress in the surrogate blend. Immediately after |BEAUTIFUL|, the |lines of sight| are visible again at the location further to the right: it is as if the |lines of sight| did not disappear.

Note that the expression in (6) could be used to describe the esthetic judgment that the signer once had, but holds a different one at the time of the utterance. The signer could follow (6) by deactivating the blend and saying that his tastes has improved and now no longer thinks that the kitchen is beautiful. Because |BEAUTIFUL| is understood to be the dialogue made by the |past self|, this allows the signer to express the contrary opinion.

1.2 Surrogate blends without |Real Time|

Surrogate blends need not always have |Real Time|. (7) describes a conventional way of using surrogate blends without |Real Time| to describe the locations of an object within a room, such as a clock on a kitchen wall.



7) [ENTER] points to location above head

First, the signer produces ENTER with a set of nonmanual signals that as a combination means something like “As you enter thus.” Then the signer points to a location above his

head. In both cases, eye gaze may glance briefly away from the addressee, towards the “entrance” and towards the location above the signer’s head, respectively. Here, as in the |Real-Time| surrogate blends above, this eye gaze action cues the addressee towards the creation of a Real-Space blend.

Figure 4 diagrams the mental spaces created during the production of (7). The rightmost box is Real-Space, and the properties that are necessary for the blend is the signer’s location and the location above the signer as well as the surrounding space. Unlike in the blends above, Real-Time is not a necessary property for the blend in (7).

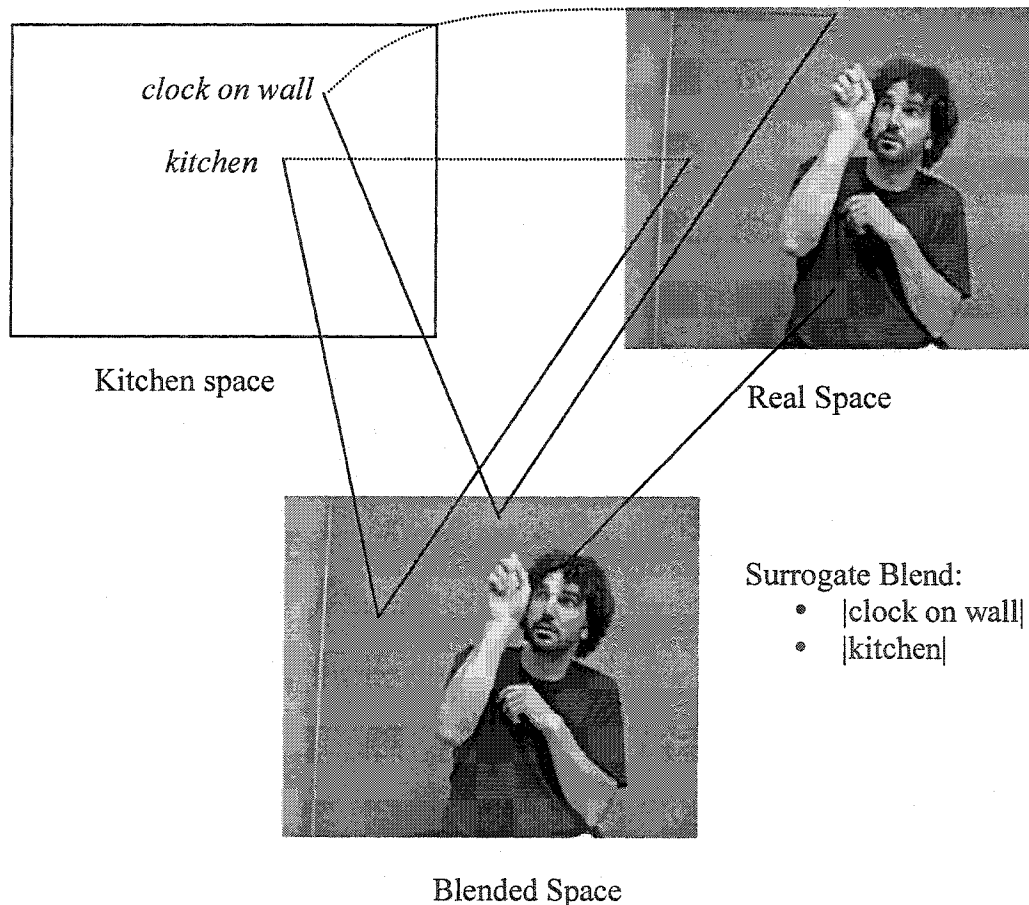


Figure 4: Representation of surrogate blend in (7)

Since both signer and addressee know that part of the topic involves the kitchen, they have access to a kitchen space. When the signer produces [ENTER], a surrogate kitchen blend is created. What [ENTER] specifically does in this context is to establish a reference point within the |kitchen| from which to locate the |clock|. This reference point is created by mapping the signer's location in Real Space onto the counterpart location in the kitchen space, the *entrance* of the *kitchen*. The signer is not mapped with any counterpart.

The surrogate kitchen blend continues to be activated when the signer points to a location above his head. As the signer is conceptualized to be in the |kitchen|, it is understood that the signer is pointing to a location in the |kitchen| that is above the |entrance|. After the pointing gesture is made, the surrogate blend potentially continues to exist, depending on what follows the expression. Because there is no |Real Time| associated with the blend, there is nothing to break, so the blend has greater potential for conceptual persistence than a |Real-Time| surrogate blend has.

1.3 Surrogate blends: depicting verbs vs. indicating verbs

|Real Time| can be a component of depicting verbs, which is clear in many verbs in ASL that depict actions. Unlike such depicting verbs, whose movement is often understood to represent that of an entity, the movement of indicating verbs serve the function of prompting mappings of mental space entities onto the trajector and landmark of the verb (Liddell 2003). The following contrasting usages of depicting verbs and indicating verbs when a surrogate blend is active is intended to further describe surrogate blends and depicting verbs as well.

The ASL verbs HAND-FLAT-OBJECT and GIVE are two verbs of GIVING that look similar in certain ways but are actually different types of verbs. There is a constraint on the use of GIVE and other indicating verbs on what sort of entities it may be directed towards; Liddell (2003) has a discussion on such directional possibilities. First, (8a) has the signer directing GIVE towards a token, an abstract Real Space blend (Liddell 1994, 1995). In (8b) the signer is understood to be a surrogate directing GIVE towards a taller surrogate addressee.



8a) TOMORROW GIVE (directed by signer towards token)



8b) PRO-1 GIVE TOMORROW (directed by signer as surrogate towards taller surrogate addressee)

There are differences in the directionality of the verbs. In (8a), GIVE moves more or less on the same horizontal plane on which the token exists. (See Liddell 1990 for discussion on varying directional properties among indicating verbs). In (8b), GIVE is part of a dialogue and is directed towards a |recipient| who is conceptualized as present and standing while the signer representing the |giver| is sitting. Here, the verb, as per convention, is directed towards the neck of the |recipient|.

(9) illustrates HAND-FLAT-OBJECT, a depicting verb (its properties are detailed in the next section). The manual articulator is understood to be the |giver's hand| that moves towards an |intended recipient|. The |intended recipient| is understood to be within reach of the |giver|, which is represented by the signer. This depiction of transfer is both produced in Real-Time and understood to be enacted in |Real-Time|.



9) HAND-FLAT-OBJECT.....

The depicting verb HAND-FLAT-OBJECT's handshape is identical to the handshapes used in (8a) and (8b). This is basically the only similarity between the two other than a GIVING frame that they share. The handshapes in (8) does not necessarily match the real-life configuration of the hand required to hold the range of objects that are capable of filling the *object-given* role in the GIVING frame. For example, to hold a

paperback novel of prototypical size, the handshape in (8) will not do: the thumb must be positioned away from the fingers in order to grip the book. However, since it is possible to sign PRO-1 GIVE BOOK “I gave her the book” regardless the thickness of the book, this piece of world knowledge is not fully relevant or profiled in the indicating verb.

In contrast, if one signs BOOK, PRO-1 HAND-FLAT-OBJECT “The book, I handed to her (like this),” the addressee has information about the book’s dimensions, e.g. it is not thick. If the book is as thick as a hardcover, college-edition dictionary, then a related verb with a wider aperture would be a better choice. This illustrates that the manual articulator in the depicting verb is understood to be the giver’s |hand| that grips an |object| while the manual articulator of the indicating verb does not (fully) depict any hand. Moreover, it is possible for |Real Time| to be activated when HAND-FLAT-OBJECT is produced, but not GIVE.

As far as I can tell, GIVE can only be used in a |Real-Time| “meta” surrogate blend where the signer represents another signer. In this case, the sign is part of a depiction of dialogue. It is possible for GIVE to be directed towards a surrogate, but only when |Real Time| is not activated. The deactivation of the |Real Time| of a surrogate blend could result in a surrogate blend similar to the kitchen blend described above. The signer would be able to maintain eye contact with and talk directly to the addressee. Any surrogate entity would be fixed at their location the moment |Real Time| is suspended, and the signer could direct GIVE or other indicating verbs to the surrogate |recipient|. A similar example is described in Chapter 3. In this example, |Real Time| is deactivated in order for the signer to describe what a surrogate was intending to do in the previous depiction. Then |Real Time| is reactivated in order to continue the depiction.

1.4 Conclusion

Real Time is a conceptual property that can take part in mappings creating blends that depict events. The nongrounded counterpart to Real Time is available within the event frame. All events are understood to have temporal structure; moreover, it is not possible to conceptualize an event independent of any progression of time. Thus such temporal information is part of the event frame. The temporal progression in the frame maps onto Real Time and produces |Real Time| in depicting verbs and surrogate blends.

|Real-Time| surrogate blends are not continuously activated throughout discourse. Like any language, discourse typically does not begin with a |Real-Time| surrogate blend—it would be like finding oneself transported in front of a movie underway in a theater—nor does it end with one. Conceptualizers at the beginning of a discourse take up participant roles in Real Time, open discourse in Real Time, and introduce discourse topics in Real Time. From there |Real-Time| surrogate blends may be activated and deactivated in various segments of discourse, sometimes even switching between surrogate blends in sequence. But all throughout this, Real Time is constant, part of the thread that holds discourse together.

Figure 5 is a diagram illustrating the alternation between Real-Time surrogate blend activation and deactivation during a portion in the middle of a prototypical ASL narrative (signed in front of a video camera). The box itself represents a 30 second portion of the narrative. Within the box are smaller gray boxes representing the activation of Real-Time surrogate blends. The gray boxes are approximately one second each—though the length of |Real-Time| could easily be longer than one second. Gaps

between the boxes represent their deactivation. I have recorded a total of seven such activations as well as their intervals.

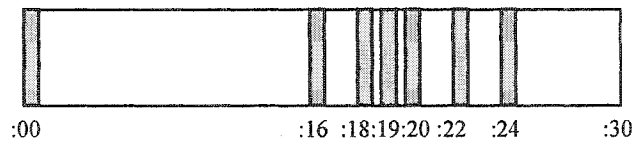


Figure 5: Seven |Real-Time| activation in a span of 30 seconds

During the intervening spaces in this narrative, between boxes, there have been several uses of depicting verbs, but they were produced without the co-activation of a Real-Time surrogate blend. Also, it is likely that during this 30 second stretch the setting of the narrative and surrogate elements are understood to have locations within the space surrounding the signer. Such a surrogate blend parallels the kitchen blend described in (7).⁵

2.0 Verbs and Real-Space blends

In Section 2, we saw an example of a sign that is commensurable with a |Real-Time| surrogate blend. We also saw how a sign was partitioned off from the |signer as surrogate| to contribute an additional layer of depiction. I have suggested that these partitioned-off entities are integrated with surrogate blend to create a megablend. Below I continue this discussion, illustrating further how depicting verbs have the property of |Real Time|.

⁵ In Chapter 5 of Liddell (2003) an ASL description three seconds long appears to show a single surrogate blend throughout with |Real-Time| activated at various points.

2.1 Manual-action depicting verbs and partitioning

Depicting verbs can be seen to fall into two categories—those that depict manual actions and those that do not. The expression in (8) includes an example of a manual-action depicting verb. For context, this expression is part of a communication exchange between a teacher and an addressee, and the teacher is saying that saying that he has already handed the roster to a worker at the principal's office.



10) PRO-1 FINISH HAND-FLAT-LIKE-OBJECT

HAND-FLAT-LIKE-OBJECT is associated with the frame of HANDING FLAT-LIKE OBJECT TO SOMEONE. The participant roles associated with this verb are *giver*, *flat-like object*, and *recipient*. The experiential motor action of grasping an object and moving it towards someone is also part of the frame as well as the time it takes to perform this action. Parts of this motor action are selected for representation—e.g. the hand holding the object—and mapped onto the signer. This cross-space mappings has a high degree of isomorphism: the *giver* is mapped onto the signer, the *giver's hand* is mapped onto the signer's hand, the *flat-like object* to empty space within the signer's hand, and *recipient* onto empty space near the signer. Even the outward direction of the *giver's hand* is represented. Table 1 lists some of the conceptual mappings underlying HAND-FLAT-

LIKE-OBJECT. Note that the *giver* and the *giver's hand* are in the same box. This reflects that the two are understood to be part of the same *entity*.

HANDING frame	Real-Space	Blend
<i>giver</i>	signer	giver
<i>giver's hand</i>	signer's hand	giver's hand
<i>flat-like object</i>	empty space: o	flat-like object
<i>recipient</i>	empty space: r	recipient

Table 1: Mappings underlying HAND-FLAT-LIKE-OBJECT

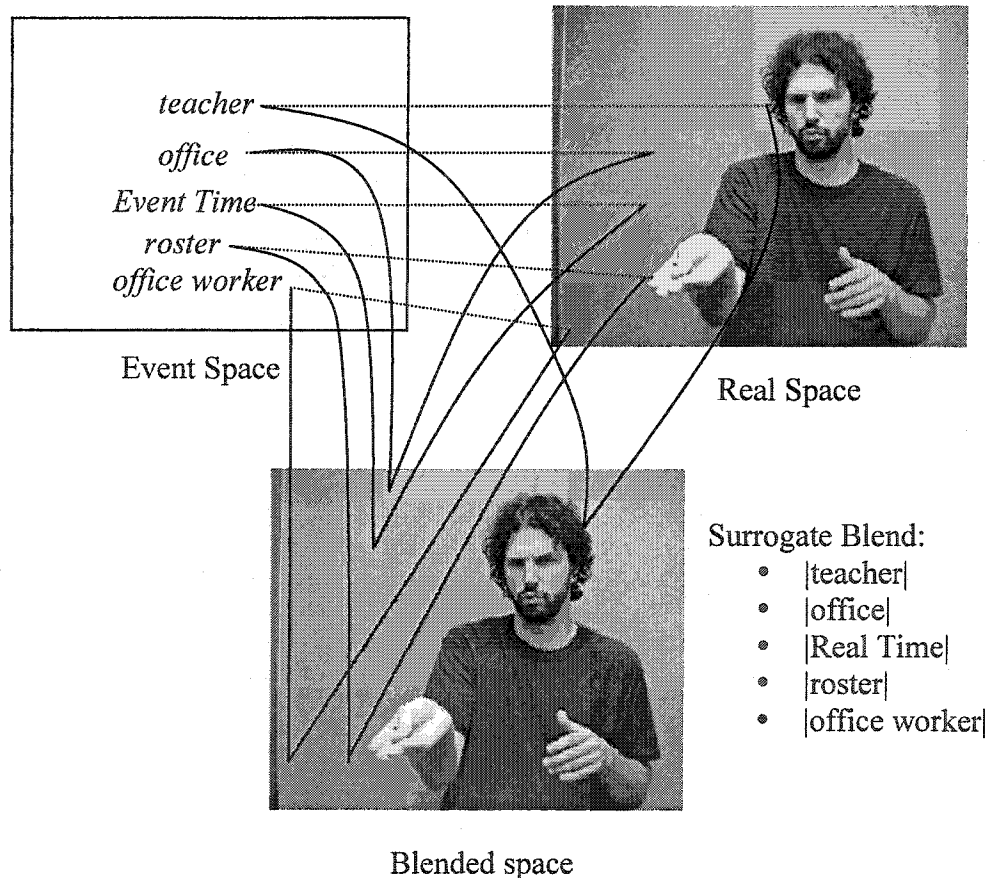


Figure 6: Representation of blend in (10)

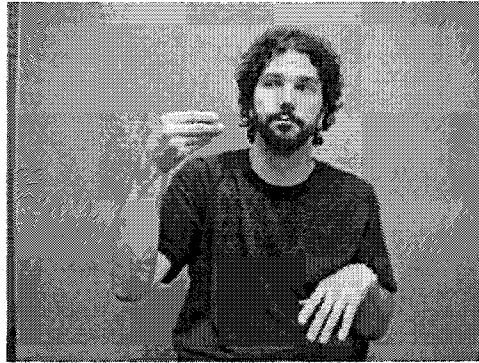
Figure 6 represents the blend produced during (10). When the signer uses HAND-FLAT-LIKE-OBJECT in (10), the participant roles are specified by values from the event space. These are the *teacher*, *roster*, and *office worker*. The result is a surrogate blend that depicts part of the transfer event, in which the elements |teacher|, |roster|, and |office worker| co-exist. This surrogate blend has |Real Time|, the result of mapping Real Time with the temporal progression (Event Time) associated with the HANDING FLAT-LIKE OBJECT TO SOMEONE frame.

The verb HAND-FLAT-OBJECT is one example of a class of depicting verbs in which the |hand| is understood to part of the visible |entity| from whose viewpoint the blend is described. Other examples of this manual-action depicting verbs include what is known as “handling” classifier predicates, such as OPEN-BOTTLE, SHOOT-SYRINGE, DRINK-WHISKEY-SHOT. Other verbs in this class also include those that do not depict the holding of objects, just the actions of the hand itself. PUSH, PUNCH, CLAP, ITCH all are understood to depict the manual actions of an |entity| towards an |object| or in the case of the latter two verbs, on the |entity| itself.

Also included in this class are verbs whose depiction of an action is metonymic for the event it encodes. CONSIDER-CHIN is one example. It depicts not only the index finger and thumb stroking the chin, but the head and eye gaze behavior as well. This verb means something like “considering.” SCRATCH-HEAD-IN-PUZZLEMENT is another such example.

The surrogate blends in which manual-action depicting verbs are typically described from the point of view of the |agent| performing the action, and the visible portions of the blend, e.g. the facial expression or the hand, are understood to be this

|agent's|. However, it is possible for the signer to use such verbs in a way so that two distinct visible elements co-exist in the blend. This can be seen in (11) which is similar to (10) but from the viewpoint of the |office worker|.



11) HAND-FLAT-OBJECT

Here the signer is understood as the |office worker|. The |hand| being directed towards the |office worker| is understood to be the |teacher's| and is further understood to be holding the |roster|. So we have two visible elements in the blend, but they are distinct.

The creation of this blend is possible despite a clash between the inputs. As can be seen from the illustration, rather than moving the hand outward, the signer directs it towards his own face. In a different context, this could be interpreted as the act of drawing an object closer to one's own person. In the HANDING FLAT-LIKE OBJECT TO SOMEONE frame, however, this has no obvious counterpart.

To be able to produce two visible blended elements, there need to be two independent Real-Space objects that provide a good image schematic match vis a vis their counterparts in the HANDING frame. The only visible elements in Real Space that are conventionally available to signers are their bodies. Moreover, as Dudis (2004) demonstrates, the signer's body has several partitionable zones that may be used to make

additional contributions to the surrogate blend. In (11) as well as in (5) we have seen that the hand is partitioned off from the signer to depict an entity that is not continuous with the surrogate whose viewpoint is being constructed. Table 2 lists the mappings made possible by partitioning off the signer's hand.

HANDING frame	Real-Space	Real-Space blend
<i>giver</i>	empty space: r	giver
<i>giver's hand</i>	signer's hand	giver's hand
<i>recipient</i>	signer	recipient
<i>flat-like object</i>	empty space: o	flat-like object

Table 2: Mappings made possible by partitioning off signer's hand

The |recipient| is the result of mapping the role *recipient* onto the signer, and because the signer is a visible Real-Space element, this blended element is also visible. The |giver|, with one exception, is not visible, as it is the result of mapping the *giver* onto empty space "r". The only part of the |giver| that is visible is the |giver's hand|, created via the mappings of *giver's hand* onto the signer's hand. Now this does not mean that the concept of the hand in Real-Space is unavailable for further mapping once it is understood to be the |giver's hand|. The |recipient| is still conceptualized as having a |hand|, but it would not be visible in the blend when this partitioned off verb is used. This is made possible by the process of pattern completion which, so to speak, "fills in the blanks" (Fauconnier & Turner 1994).

2.2 Partitioned verbs and multiple visible blended elements

In the above, I have demonstrated that manual-action depicting verbs are the result of blending components of a physical action frame with Real-Space components. The physical action frame associated with such verbs has the whole body involved in the

execution of the action, even if the actions of the hands are foregrounded. Thus the |hand| is not disembodied, even when it is partitioned off. Below I examine verbs whose manual articulators are understood to depict a component of an event frame other than the *agent's hands*. I suggest that we can make a distinction between depicting verbs regarding the requirement for body partitioning.

Let's begin with contrasting two verbs that depict the action of shooting a gun in (12a) and (12b) (only the first segment of the signs are illustrated).



12a) SHOOT-GUN



12b) SHOOT-GUN (partitoned-off)

(12a) is the result of mapping, among other elements, the signer and a particular hand configuration with the *shooter* and *hand configuration*. Thus the blend has a visible element, |shooter|. The *gun* is mapped onto empty space in the area of the hand, so the |gun| is not visible but is understood to be held by the |shooter|. This is a manual-action depicting verb, whose mappings are similar as those underlying HAND-FLAT-OBJECT.

Instead of depicting the actions of a hand, the manual articulator in (12b) depicts a |gun| with the thumb understood as the |gun hammer|. The |shooter's hand| is not visually depicted here, although it is present. Moreover, from the SHOOTING frame we know that

guns are typically held by a person when it is fired, and so we understand that in (12b) the |gun| is being held by the |shooter|.

While the blend in (12a) has the |shooter| as the sole visible element, the blend in (12b) has two visible elements—the |shooter| and the |gun|. Also, in the former blend the counterparts associated with |shooter|, i.e. the signer and the *shooter* role, share similar formal properties, allowing much of the signer to be understood as |shooter|. In contrast there is, on one level, a clash between the inputs of the blend in (12b). Here some parts of the signer are understood to be the |shooter|, but the right hand is understood to be the |gun|, not the |shooter's hand|.

The clash is partially resolved through body partitioning. Table 3 lists the mappings underlying SHOOT-GUN.

SHOOTING frame	Real-Space	Real-Space blend
<i>shooter</i>	signer	shooter
<i>shooter's hand</i>		shooter's hand
<i>gun</i>	signer's hand	gun
<i>target</i>	empty space: t	target

Table 3: Mappings underlying SHOOT-GUN

The table demonstrates that while the |shooter| is visible as a result of mapping *shooter* on the signer, the |shooter's hand| is not visible because the *shooter's hand* is mapped onto the schematized right hand of the signer, which is not visible.

Partitioning off the signer's hand also allows it to be schematized. The configuration of the hand into a L handshape, guided by an image schema, now partly corresponds with the configuration of the prototypical *gun* of its type within the SHOOTING frame. The resulting |gun| is an adequate depiction, despite having different

“functional” properties. For example, the thumb that represents the |gun hammer| does not cock back at all, like a gun of this type does. Nevertheless, the |gun| serves its intended purpose well. Should the signer wish to depict the cocking back of the |gun hammer|, other verbs are available for this purpose.

SHOOT-GUN appears to be a type of a verb known as depicting handle classifier predicates (Slobin et al. 2002). Other such verbs include USE-SCISSORS, USE-SCREWDRIVER, USE-SPOON. What these verbs have in common is that (a) the hand is partitioned off to depict an |object| and (b) the |object| is understood to be used by an |agent|. These verbs are suggestive of a melding of the instrument and agent, i.e. the |instrument| is literally an extension of the body—c.f. a depiction of Peter Pan’s nemesis Captain Hook and his hook-hand or a specially fitted cyborg. However, in the case of these type of verbs, a complete melding of the |instrument| and |agent’s arm| is precluded by the MANUAL USE OF INSTRUMENT frame.

I have just demonstrated why body partitioning is crucial in the creation of surrogate blends and for depiction in general. What is also involved here is further blending that is necessary to completely resolve the clashes. Such integration results in a **megablend**. I will illustrate this further with a stronger example of a clash below.

2.3 Scale clash and partitioned verbs relating to actions of legs

Depicting verbs also include other well known classifier types such as “limb classifier predicates.” Like SHOOT-GUN, these verbs involve schematized, partitioned off manual articulators. However, limb classifier predicates also involve mappings that create visible blended elements whose scale is different from the life-sized scale of the |signer as surrogate|. This results in a clash, and to resolve this a megablend is created.

There is a large class of verbs that depict the actions of the legs. One example is LEGS-MOVE-BACK, illustrated in (1), repeated here as (13).



13) LEGS-MOVE-BACK

The index fingers of LEGS-MOVE-BACK each represent a leg. Their alternating movement represent the backward step by step motion which is part of the HUMAN MOVING BACKWARDS frame. The mappings underlying this verb recruit not the index finger per se, but its shape which conforms well to the image schema associated with legs, in particular their “elongated” shape and their individuation from the rest of the body. To conceptualize the index fingers in this way, they need to be partitioned off and schematized. This is one step in the analogue-building model of linguistic iconicity described in Taub (2001).

It appears that the fingers are not the only visible Real-Space elements that are key components in LEGS-MOVE-BACK. The signer as a human individual with legs is another component of this verb. The *human mover* role of the frame is clearly mapped onto the signer, creating |human mover|. The torso of this |human mover| may be leaning several degrees backwards while the |legs| are in motion, depicting the slight tilt human individuals have when walking backwards. Sometimes the leaning back is intended to depict part of the backwards movement path. The roles *human mover's legs* are mapped

onto the index fingers, and so this verb profiles the *legs*, backgrounding the rest of the *human mover*.

In the blends described above that involve body partitioning, the distinct visible elements are understood to share somewhat identical scale properties. This allows the elements to co-exist and interact even to the extent that contact can be made between the two. This interaction on one level is not possible between the visible |legs| and the |owner of the legs|. It would be quite unconventional if, for example, the event of stretching a leg by its owner is depicted by having the |owner| grabbing the |leg| and bending it backwards. What this illustrates is the existence of a clash of scale between the |owner| and the visible |legs|. This clash arises from the different properties established with the respective elements via cross space mappings. The scale of the |owner of the legs| (and the |surrounding environment|) is determined by the blending of the scale associated with the signer and the scale associated with the HUMAN MOVING BACKWARDS frame. In contrast, the scale of the |legs| is determined by the blending of the scale associated with the partitioned off and schematized finger (not the actual finger itself) and the scale associated with the *legs* in the HUMAN MOVING BACKWARDS frame.

Yet despite this clash of scale we have this conventional verb LEGS-MOVE-BACK which activates two blends, a surrogate blend that contains a visible |mover| and a depicting blend (Liddell 2003) which contains the |legs|. There is another clash between the two blends concerning the location of the visible |legs|: despite the location of the manual articulators in relation to the signer, we are not instructed to conceptualize the |legs| as existing in front of the |human mover|.

While the two simultaneous but distinct depictions clash in scale, they nevertheless are aspects of a single scenario. When there are simultaneous blends, “the pressure will be to integrate them if they are compatible” (Fauconnier & Turner 2002:151). Being two different perspectives of a single scenario, the blends are certainly compatible. To be able to “entertain” the two blends simultaneously and make proper connections between the two, the blends are integrated to create a megablend. This megablend resolves the clashes. When a surrogate blend and a depicting blend co-occur, clashes between the two are noticeable only when each blend is considered separately, not as an integrated whole. Figure 11 is a diagram representing the mappings underlying LEGS-MOVE-BACK.

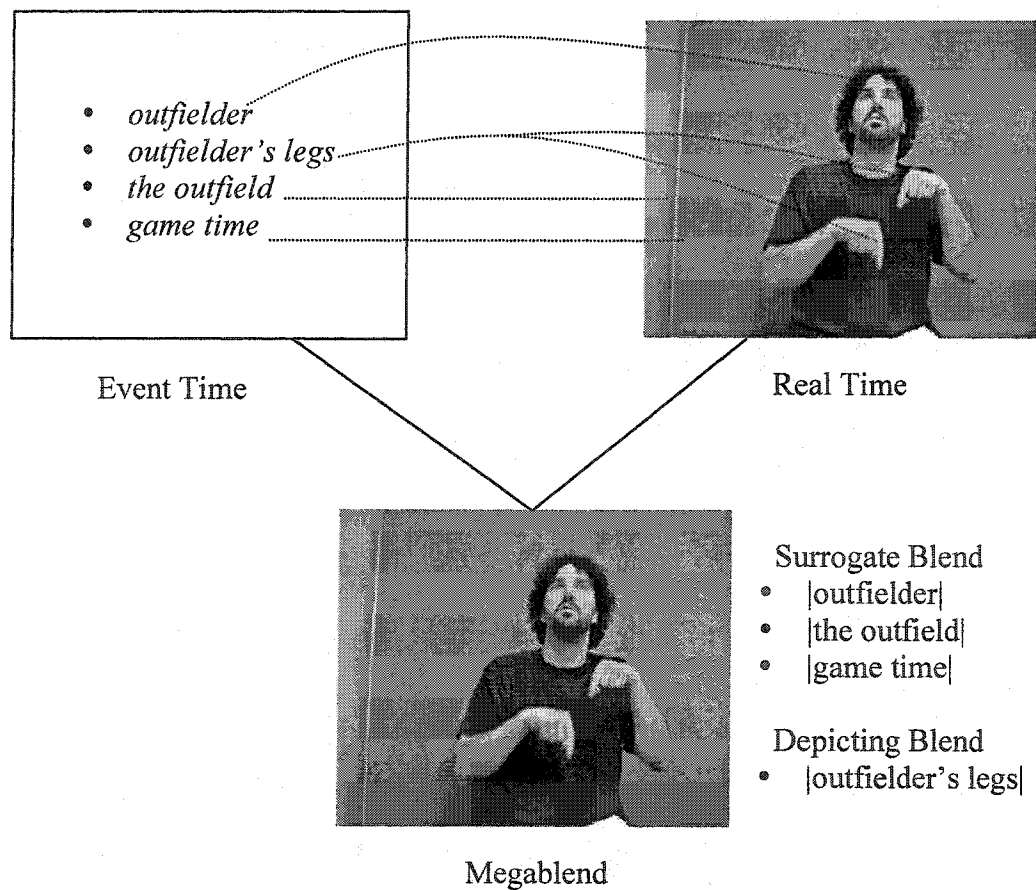


Figure 7: Mental space representation of (13)

Partitioning the manual articulator from the signer's body in the fashion of LEGS-MOVE-BACK also produces two simultaneous deictic centers occurring in the surrogate blend and the depicting blend. The deictic center in the surrogate blend is the result of projecting the signer's deictic center into the blend. The deictic center in the depicting blend is the result of projecting *human mover's legs* onto the partitioned fingers and locating them in a particular location in front of the signer. The incoherence of two simultaneously occurring deictic centers is resolved when the two blends are integrated into a megablend.

(14) is another example where two simultaneous |deictic centers| are created. Here the signer is describing a scene in which someone bumps into someone else, and throughout (14) the signer is understood to be the |victim|. First, the signer depicts the |victim| who is standing with a |glass of wine| in hand. Then the signer produces a verb depicting the accident while maintaining the surrogate blend. The right index finger is placed upright near the signer's chest. This finger is understood to be an |upright human individual| at a smaller scale than that within the surrogate blend. Placing this finger near the signer's chest here with the |Real-Time| surrogate blend activated connects the |upright human individual| and the |victim| creating a second deictic center and integrating it with that of the |victim|.

There is a second |upright human individual| produced in the depicting blend of (14). Because of the megablend, its appearance also introduces a life-sized |individual| in the surrogate blend. Its placement to the left of the |victim| in the depicting blend depicts the spatial relations between itself and the |victim|, and this |individual| moves towards and bumps into the |victim|. Even though the |individual| is not visible in the surrogate

blend, the addressee infers from the depicting blend that there is a |individual| moving towards the |signer as victim|. Because the counterparts in the surrogate blend and the depicting blend are integrated into the megablend, right at the moment when the bump occurs, the |signer as victim| and the |index finger as victim| simultaneously move to the right. The |signer as victim| also contributes additional information, such as the immediate reaction to being bumped, which is not available in the depicting blend. So each blend depicts different aspects of the overall bumping event, but these aspects are understood to be cohesive within the megablend. (14) also clearly demonstrates that the location immediately in front of the signer's chest has a special status when a surrogate megablend is produced.



14) HOLD-CONTAINER.....beginning of accident.....the bump.....

2.4 Scale clash and partitioned verbs related to “whole entity” actions

The complex depicting verb illustrated in (14) has two upright fingers understood to represent |individuals|. Unlike the |legs|, which obviously depict only parts of a |body|,

it has been noted that these entities represent “whole entities.” AIRPLANE-FLYING-BY in (15) is another example of such an entity.



15) AIRPLANE-FLYING-BY.....

In accordance to the image schema associated with the plane, the signer’s hand is configured to the “three-pronged” handshape, resulting in a small scale |plane|. This |plane| flies through a |portion of sky| created by mapping *portion of sky* from the AIRPLANE frame onto some portion of empty space. Unlike LEGS-MOVE-BACK, in which the |legs| are understood to be part of a |mover|, the |airplane| is a self-contained entity. It is not a physical extension of some whole.

If a |Real Time| surrogate blend exists when this verb is signed, this verb integrates with the blend to produce a megablend. The megablend produced by (16) has two visible elements, the |airplane| which is produced by the depicting verb and the surrogate represented by the signer, who is looking at where the life-sized surrogate |airplane| (not the visible |airplane|). The visible |airplane| is produced near the signer, but in the megablend, this |airplane| is understood to be located where the life-sized surrogate |airplane| is.



16) AIRPLANE-FLYING-BY.....

(17) produces a different megablend with two visible blended entities. The depicting verb used is PLANE-TAKE-OFF. The manual articulators in this verb represents an |airplane| and the |ground| it is taking off from. This verb can be placed at a variety of locations in relation to the signer. In (17), it is located immediately in front of the signer. This placement of a partitioned-off blended entity parallels the one in (15). The signer is understood to be a surrogate inside the |airplane|. Integrating the verb and the surrogate blend results in a megablend in which the addressee sees two different but related aspects of a single scenario.



17) PLANE-TAKE-OFF.....

3.0 Clines

In this section I discuss some clines associated with depicting verbs. First, I will illustrate how depicting verbs fall into a cline of scene complexity. Then I discuss a cline of iconicity associated with what the hands depict. In Section 4, I discuss another cline of iconicity associated with signer's involvement, which impacts on the quality of |Real-Time|.

3.1 Cline of scene complexity

Figure 8 lists the different types of Real-Time surrogate blend described in the above sections. It demonstrates that these blends fall in a cline of a certain scene complexity. This cline exists because of the different mapping possibilities, and this is part of what I mean by "scene complexity." This complexity is also associated with the number of visible elements within a blend and how they are conceptualized.

least scene complexity	Real-Time surrogate blend, no partitioned elements	Real-Time surrogate blend with partitioned elements, no clash in scale	Real-Time surrogate megablend	Real-Time surrogate megablend with two integrated deictic centers	greater scene complexity
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Figure 8: Cline of scene complexity

The following is a brief run-through of the cline, starting with the least complex. The least complex blend involves no body partitioning. HAND-FLAT-OBJECT is an example of this blend. While there may be any number of blended elements within this blend, only one is visible, and this is the |signer as surrogate|.

The next point on the cline is a surrogate blend containing distinct visible blended elements. The blend in (11), which contains the partitioned off |giver's hand| is an example of this. In this surrogate blend, the visible element co-exists with the visible |surrogate|, whose |hand| is not visible but nevertheless conceptually present. The two visible elements do not clash in scale, so they may interact, even to the point of contact.

|Real-Time| megablends are the result of blending partitioned off manual articulators which represent blended entities whose scalar properties clash with those within the surrogate blend. When the surrogate blend and the depicting blend are integrated into a megablend, the clashes are resolved. Other examples of partitioning have been described in my 2004 paper. The facial expression can be partitioned off to represent a |facial expression| not understood to be the deictic centered surrogate. Another example of body partitioning described involved the partitioning off of the mouth to produce onomatopoeic signs associated with the event which the megablend is being constructed to describe. This nonmanual partitioning allows signers certain resources with which to describe complex events, as we shall see later in this dissertation.

Finally, there are megablends in which there are two distinct visible blended elements who are understood to be associated with the deictic center. This is seen in LEGS-MOVE-BACK, BUMP-INTO-MY-SIDE, and AIRPLANE-TAKE-OFF. The |deictic center| of the surrogate blend is the result of mapping the Real-Space viewpoint of the signer and the viewpoint of one of the counterparts in the frame input space. The |deictic center| of the depicting blend is partly the result of locating the partitioned |entity| onto the location in front of the signer. Since expressions have only one deictic center,

integrating these two |deictic centers| into the megablend resolves the clash arising from their existence.

In Figure 8, the least complex scenes involve no partitioning, while scenes of increasing complexity involve and are made possible by partitioning. This illustrates the importance of body partitioning in ASL. For example, in a description of an event involving a car, the signer can (a) depict the actions of only the driver using a manual-action verb, or (b) the driver can depict both the perspective of the |driver| participant and the global perspective of the |car| (using a depicting verb that has is known as a “whole entity,” see Section 3.2). Without partitioning, resources available to represent events would be austere. Not only would it be impossible to depict events from different viewpoints, the depiction of events would be limited to manual-action verbs.

3.2 Cline of isomorphic mappings involving the manual articulator

As I have mentioned above, the manual articulator can be configured to meet the physical specifications of a selected portion of the event being described. The “faithfulness” of the manual configuration to the shape of the referent can be seen to fall in a cline as well.

At the richest and least schematic end of the cline are configurations of the handshape used in manual action events. Often the connection is that of “identity,” i.e. “this is the handshape used to perform this event.” In the event frame input we have the role *hand* mapped onto the signer’s hand. Because of this type of mapping, there is always a connection between the |hand| and the rest of the |body|. If the shape of the |hand| may not be exactly the configuration used for a certain manual action, it is nevertheless understood to fall nearer to this point on the cline than the following point.

To be able to use the signer's hand to represent entities other than the *hand*, it is necessary to partition it off from the body and schematize it to obtain the fiction that the hand is independent from the body. Schematizing the hand allows it to be considered as a physical object with a particular shape. In this way the resulting representations fall further away from the least schematic end.

Note also some differences between the “depicting handle” verbs USE-SCREWDRIVER and SHOOT-GUN. The former has only part of the |screwdriver| visible, which is the |edge| and part of the |stem|; the |handle| is not visible. With SHOOT-GUN, more of the surface of the |gun| is visible, including the |barrel| and the |hammer|. Still, the |gun| does not depict the |bullet chamber|, the |trigger|, or even the |barrel opening|. These aspects of the *gun* were not selected in the creation of SHOOT-GUN. Rather, the general outline of the *gun* was selected to configure the hand into the L handshape, and the more specific properties are projected into the blend.

Then there are the handshapes in the class of “whole entity” verbs. Many of such handshapes do seem to represent the whole of the trajector of the verb. For example, to describe specifically how a pencil has fallen to the ground, the signer would select the verb LONG-THIN-OBJECT-MOVING-DOWNWARDS. However, if the sharpness of the pencil is an important part of the description, there does not seem to be an obvious way to represent the sharp end of the pencil with the “whole entity” handshape.

Thus there seems to be a cline in the isomorphic mappings between the hand and the referent. This demonstrates that iconicity is not an all or nothing affair. The visible portions of the depicting verbs may be understood to profile the crucial aspects of the

referent, but it is not possible to create such depicting verbs without relying on what amounts to pattern completion, e.g. the |pencil| has a |sharp end| and an |eraser end|.

The use of CATCH-OBJECT in the baseball expressions in this chapter illustrate a different aspect of “iconicity is not an all or nothing affair.” The handshape of this verb begins with a relaxed 5 handshape and ends with an S. This depicts the handshape sequence necessary to grasp something; reversing the sequence will not depict grasping but instead the action of letting go. In the game of baseball, players catch baseballs with their mitts. This action involves a B handshape and the closing of the thumb to the palm. It is possible to use a verb involving the B handshapes to describe the quality of the baseball mitt, depicting the opening and closing of the |mitt|. But this verb isn’t used to describe the prototypical catch of a baseball. Instead, CATCH-OBJECT is used, despite the clash between motor actions of grasping vs. closing.

4.0 Compression and |Real Time|

This section briefly discusses two sets of examples that demonstrate how |Real Time| can vary among surrogate blends. The variation is related to the signer’s purpose of producing the discourse in which a |Real-Time| surrogate blend is created. The cognitive process of compression (Fauconnier and Turner 2002) is also discussed.

4.1 Discourse goals and |Real Time|

At the beginning of this chapter, I described (1) and (2) as two different descriptions of an outfielder catching a baseball. (1) is quite extensive, involving approximately seven verbs. In contrast, only two verbs are produced in (2). There are also additional ways that this particular event could be described. An interesting question

is, is there a way to describe this event without using |Real Time|? If the signer only mentions the result of this event, i.e. the player who hit the ball is out, then a single, non-depicting sign could be used. However, the use of just about any of the depicting verbs is very likely to produce a |Real-Time| blend. In fact, it is difficult to avoid creating such a blend if these verbs are produced to describe this event. This demonstrates how |Real-Time| blends are central to ASL.

Both (1) and (2) produce a |Real-Time| blend and are used to describe the same scenario. That both expressions differ in length is partly due to the signer's discourse goal when producing the respective expressions. (1) is a good example of a narrative while (2) would be more appropriate as an answer to a request for a quick summary of events. However, in both cases, we imagine that the temporal "texture" of the represented world functions just like that of the representing world. Any differences in the |Real-Time| quality between (1) and (2) are gradient, a matter of degree.

Thus, despite the differences in the quality of |Real Time| quality, we should not be too quick to establish a dichotomy between expressions that have surrogate blends and those that do not, at least where depicting verbs are concerned. Depicting verbs always have connections to their inputs, so the use of HIT-BALL and CATCH-OBJECT bring with them the knowledge that not only the events that these verb encode have temporal structure/progression, but that they have |Real Time|. (Moreover, as CATCH-OBJECT is understood to be a manual-action depicting verb, the rest of the |catcher| is visually accessible via the signer's body, (c.f. 3.2).) The depiction of |Real Time| in such events may be obscured by discourse intent. This affects the use of facial expressions, eye gaze, and so forth. Despite the fact that the conceptualized locations of entities and the

interaction among them may not be as robust as the other expressions, the signer's eye gaze still may glance ever so briefly at where the entities are. This eye gaze behavior demonstrates that entities and the events they are associated with are conceptually manifested anytime depicting verbs are used. Such conceptualizations become elaborate when signers use more of their bodies—the facial expression, eye gaze, body posture, in addition to their hands—to talk about events using depicting verbs. Similar instantiations of a given expression may thus vary in the quality of |Real Time| and explain the cline of sorts evident in the different ways ASL signers can describe a single event of the catching of a baseball.

4.2 Compression

The expression illustrated in (3) involves a |Real-Time| blend that is created to demonstrate what makes the signer think that the outfielder is cool. The example the signer provides is the outfielder's effortless catching of baseballs. In (3), the signer produces a sequence of verbs depicting |legs| moving and |glove| catching |baseballs|. This is done while the signer wears an insouciant expression, and the signer produces three more cycles of the verb sequence, each in different directions. The signer's continuously directing the eye gaze away from the addressee and the maintenance of a single facial expression are some of the evidence that a |Real-Time| blend is produced, one that continues unbroken as the verb sequences are produced.

The sequence of sauntering and catching the ball as depicted is not likely to happen during a regular baseball game. The signer's intent is not to depict a string of events that occur in the normal progression of Real Time. Rather, the signer is compressing a longer string of time from a mental space input relating to the history of

the outfielder's performance. This history could be a few innings, a game, a season, or even a whole career. This does not mean that the outfielder has only caught four baseballs in one season, but the depiction of the sequence of actions are representative of all the actions the outfielder has made.

This is an example of what Fauconnier and Turner (2002) have observed as making adjustments to conceptualization so that it is manageable on the level of human scale. In the player history input space, we have a rich and specific knowledge about the *outfielder*. This includes the way the player has *performed* on the field and the *span of time* concerned, as well as the *game* itself. We also have the LEGS-MOVE and CATCH-BALL depicting verbs as inputs. The surrogate blend resulting from the mappings of the inputs is in many ways similar to the other baseball examples above. We have the |baseball field|, the |outfielder|, the |ball|, and so forth. We also have a sequence of moving and catching actions. What is different about the blend is (a) how |Real-Time| is conceptualized, and (b) how the further sequence of actions are to be understood. In the player history space, we have a high number of *catches* made by the *outfielder* over a stretch of say, a *rookie season*. This season lasts several months, which is much longer than the time the signer has available during routine narration to describe the outfielder's performance. This season is compressed into a few seconds within the blend. From many multiple instances of baseballs caught during a season, the signer chooses to portray only four. Each of these four representations is not intended to represent specific catching events, i.e. not the one made on opening day. Rather, the events are schematized for the purpose of illustrating what makes the outfielder cool, and producing four schematic instances illustrates well that the outfielder's performance is not a one-

time fluke. Illustration of this nature requires the addressee's understanding that |Real-Time| is compressed between each depiction of a catch.

5.0 Conclusion

This chapter describes |Real Time| as a conceptual blending product involving two distinct temporal components, Event Time and Real Time. |Real Time| can be part of surrogate blends, which involves mappings of entities and locations onto the signer's body and the surrounding space. The depiction of events in ASL often involve |Real Time| surrogate blends. |Real Time| was shown to be a component of verbs that depict events as well. A cline of such depicting verbs was described, and body partitioning was shown to underlie the variety of depicting verbs. When a surrogate blend and a partitioned-off depicting verb are co-produced, they are integrated together to create a megablend in which clashes involving scale are resolved. |Real Time| can vary among blends due to discourse goals, but the variation is often one of degree. |Real Time| is also shown to involve compression, so the length of the depicted event can be compressed into a shorter utterance time span to produce a different type of |Real Time|. The ability to compress over time is important to the constructions described in the following chapters.

Chapter 2: Depicting Time and Aspectual Forms of ASL Verbs

0.0 Introduction

In Chapter 1, I discussed how Real Time, i.e. utterance time, takes part in the conceptual mappings that create depicting time, the depictive blending of Real Time with depicted referent time; this is an essential component in the depiction of events in ASL. Depicting time was also seen to be a lexical component of some but not all citation form verbs in ASL that depict actions. Those verbs that do not have this |Real-Time| component cannot be produced in a |Real-Time| surrogate blend, outside of constructed dialogue. In this chapter, depicting time is shown to be a component of aspectual constructions. Combining a citation form of a verb that lacks |Real Time| with an aspectual construction results in an aspectual form that has |Real Time|. Such aspectual forms, unlike the citation forms they are related to, can be produced during depictions of events. This combination of aspectual construction and citation form verb is described here as a blending operation. This approach to the creation of expressions is not new. Fauconnier & Turner (1994, 1996) uses conceptual blending in their analysis of the caused motion construction in English. Mandelblit (1997) uses the theory in the analysis of the Hebrew *binyamin*. In the analysis I propose here, the temporal aspectual forms analyzed in this chapter all depict an event either at one of its temporal stages or its entirety. If this analysis bears out, we would be able to extend the surrogate blend analysis to other, more complex aspectual forms of ASL verbs.

0.1 Brief overview of ASL aspectual verb forms

Aspectual forms of ASL verbs related to temporality are very different from their citation forms. Klima & Bellugi (1979) describe temporal aspectual forms of ASL verbs

as products of inflection which “rely heavily on *temporal* patterning, making crucial use of dynamic qualities such as rate, tension, evenness, length, and manner in the movement of signs” (Klima & Bellugi 1979:292, italics theirs). Some of the aspectual inflections they identify are shown in their illustration of the aspectual forms, reproduced in Figure 1.

According to Klima & Bellugi (1979), forms in the first column in Figure 1 are produced with “a durative form [of LOOK-AT] made without directional-path movement” while those in the second column are associated with the “punctual form made with a short directional-path movement...” (Klima & Bellugi 1979:292). Below I instead assume that the “punctual form,” or in the terminology of Liddell and Johnson’s (1989) phonological model of signs, a particular *movement-hold* form, is the form associated with the durative aspectual form. I base this assumption on observations of aspectual forms of other movement-hold verbs. STAND and SIT are movement-hold signs, and it seems to me that it is these verbs that STAND.protracted and SIT.protracted are related to.

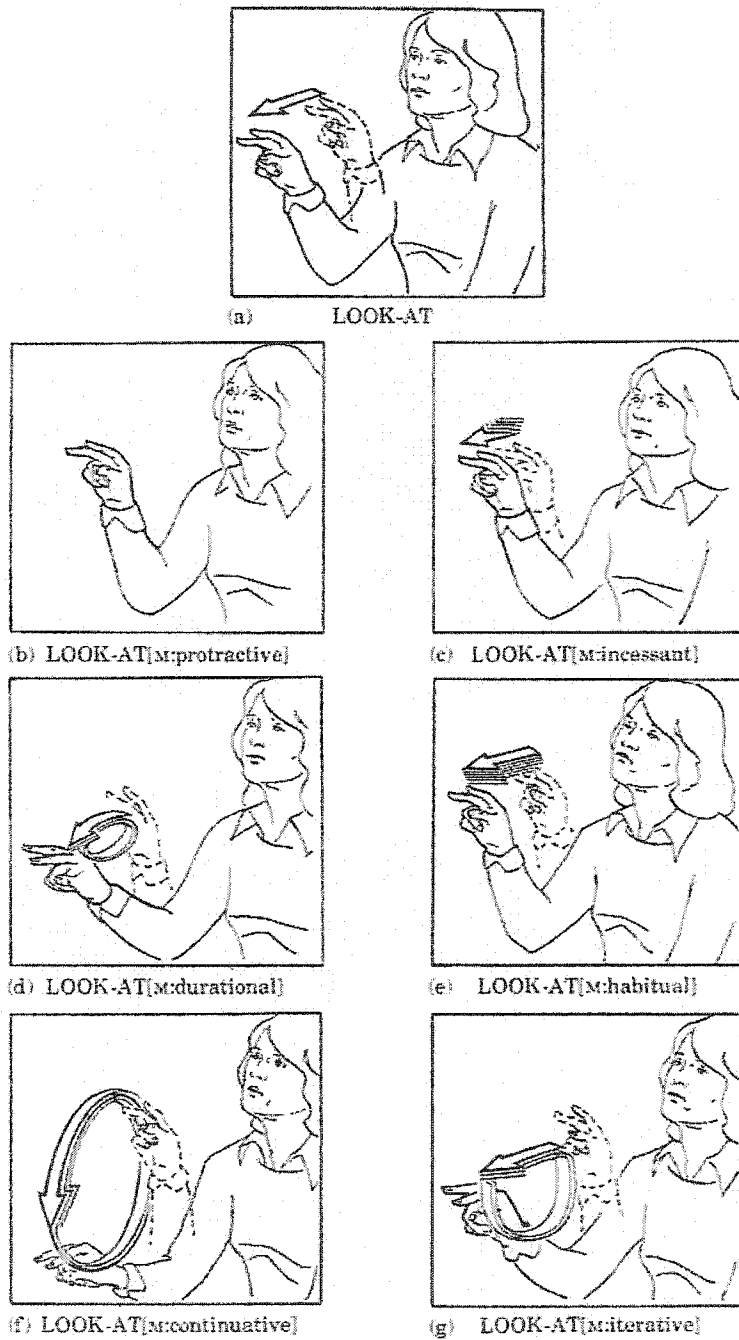


Figure 1: Illustrations of ASL aspectual forms¹

¹ Reprinted by permission of the publishers from THE SIGNS OF LANGUAGE by Edward S. Klima and Ursula Bellugi, Cambridge, Mass.: Harvard University press, Copyright © 1979 by the President and Fellows of Harvard College.

According to Liddell (2003), aspectual forms of verbs in ASL are produced by a reduplication rule, a frame process, or a combination of the two. The incessant aspectual form involves reduplication. As can be seen from Figure 1c, this aspectual form has a short path, and this path is shorter than the citation form verb. This aspectual form is also tensed and repeated several times.

Examples of aspectual forms that involve a frame process include the unrealized inceptive form (Liddell 1984). Figure 2a illustrates the citation form TAP-SHOULDER and Figure 2b illustrates the related unrealized inceptive form, which means something like “As I was about to get her attention...”



Figure 2a & 2b: TAP-SHOULDER and the related unrealized inceptive form

The frame process basically is the insertion of features of an input, like TAP-SHOULDER, into a phonological construction, which Liddell calls a *frame*. The aspectual form in Figure 1d is analyzed by Liddell (2003) as resulting from a frame process plus reduplication. This frame process appears to involve a type of a formal blending operation discussed in Fauconnier & Turner (1994, 1996, 2002). Examples of formal blending in English include noun-noun compounds such as “house boat” whose form prompts for the integration of the two conceptual structures called up by the two

nouns. This compound is more compact than other expressions exhibiting different formal structure. Sometimes the two items in the noun-noun compound can be further integrated, as in “the Chunnel,” which is an even more compact construction. The difference is that the frame process includes two constructions that exhibit different degrees of schematicity. The phonological information (or in cognitive grammar terms, the phonological pole) of the verb serving as the input in the process are for the most part specified as to handshape, orientation, movement, and so on. The phonological frame, in contrast, has many components that are not *specified* (or, also in cognitive grammar terms, *schematized*). Certain components of the frame are specified, such as the syllabic type and particular nonmanual signal usage. The combination of the verb and frame involves what in cognitive grammar is called *elaboration* (Langacker 1991a).

In this chapter, I basically use a conceptual blending approach in the analysis of four aspectual forms in ASL. It is expected that this aspectual construction is also involved in the creation of other aspectual forms such as those with cyclical patterns as in Figure 1d, 1f, and 1g.

1.0 Aspectual forms examined in this chapter

In this section, I demonstrate four aspectual forms chapter is concerned with, demonstrating that each exhibit cues that a surrogate blend is activated. This is followed by a brief discussion on how we might determine whether a verb is a citation form or an aspectual form by observing certain nonmanual signals, mouth patterns, and whether a direct object can follow the verb.

1.1 General description of aspectual forms

As discussed above, the citation form of LOOK-AT (Figure 1a) is a movement-hold structure, and LOOK-AT.protracted (Figure 1b) is a single hold sign. (2a) is an expression that uses LOOK-AT during an investigation of an alleged faulty operation of the toaster oven co-owned by the interlocutors, e.g. the oven was said to be emitting sparks, but the signer does not see any. Liddell (2003) describes indicating verbs like LOOK-AT as having the requirement to be directed towards one of many possible locations, including towards the addressee. These locations are associated with the main figures or participants associated with the verb, what in cognitive grammar is termed the trajector and landmark (Langacker 1991). In (2a), the signer is directing the verb towards a toaster oven. This indicates that the toaster oven elaborates the landmark of the verb.



2a) PRO-1 FINISH LOOK-AT^[TOASTER OVEN]
I did look at it.

Figure 3 is a diagram of the two mental spaces necessary to understand (2a). Real Space involves the conceptualizations of the signer and the toaster oven. Relative to this mental space is another mental space set up by FINISH. This second mental space is a past mental space that has counterpart elements to those in Real Space. In the Past Space,

through the frame associated with the verb, the *toaster oven* is understood to be the *object viewed*, and the *past self* which is understood to be the *viewer*.

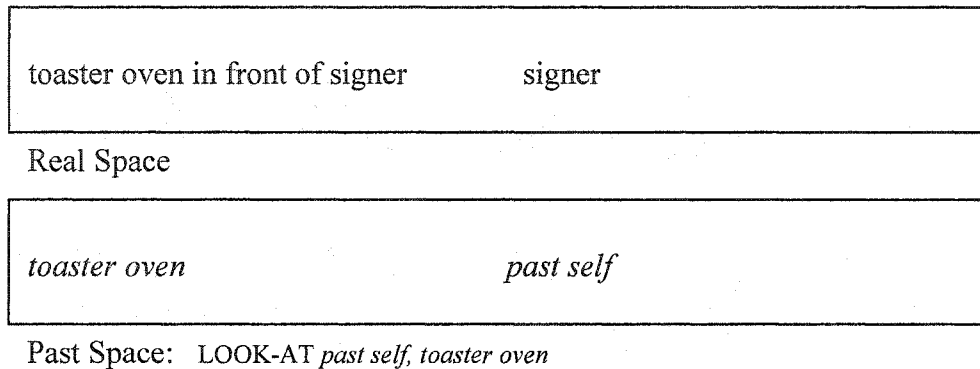


Figure 3: Mappings underlying the first part of (2a)

The expression in (2b) is another way the signer could report his observations about the alleged faulty toaster oven. The expression produced prior to (2b) (not shown) indicates that the signer has put bread into the toaster. Following this expression, the signer directs the first person pronoun towards himself and produces LOOK-AT, protracted. During the production of this verb, the signer's head is turned slightly to a side and slightly lowered. The eye gaze is also directed away from the addressee towards a location below the level of the "neutral," forward eye gaze. The signer also wears an expression of attentiveness. The manual articulator, eye gaze, and facial expression remain unchanged for a longer period of time. These are cues signaling the activation of a |Real-Time| surrogate blend.



2b) PRO-1 LOOK-AT^[PROTRACTIVE]

I was looking at the toaster oven (like this).

Similar cues are not found in (2a). The illustration in (2a) shows that the signer's eye gaze is directed at the toaster oven when LOOK-AT is produced. Bahan (1995), working within the Principles and Parameters theoretical framework, analyzes such use of eye gaze as exhibiting object agreement. I prefer to view this eye gaze simply as looking towards the object under discussion. In any case, this eye gaze is not always necessary, but the eye gaze in (2b) is required. It is required because the signer is representing a surrogate. As part of the performance expectations established when such a surrogate blend in (2b) is created, the signer needs to demonstrate, among other things, what the |past self's eyes| are doing.

Figure 4 diagrams the blend network created in (2b). The Event Space has been created prior to (2b), containing *toaster oven* and *past self*. The Real Space counterpart elements are, respectively, the empty space to the left of the signer and the signer himself. The counterpart elements are projected together into a surrogate space, creating |toaster oven| and the |past self|. It is not just the signer's body involved in this mapping, but his viewpoint and that of the *past self* as well, so the blend revolves around the viewpoint of

the [past self]. Not included in the diagram is the blending of not only the counterpart settings, i.e. calendrical time and location, but also the temporal progression counterparts. Thus the blend is not only understood as occurring in the “here and now,” but because the blend has depicting time, the event being depicted is understood to be *ongoing* or in progress.

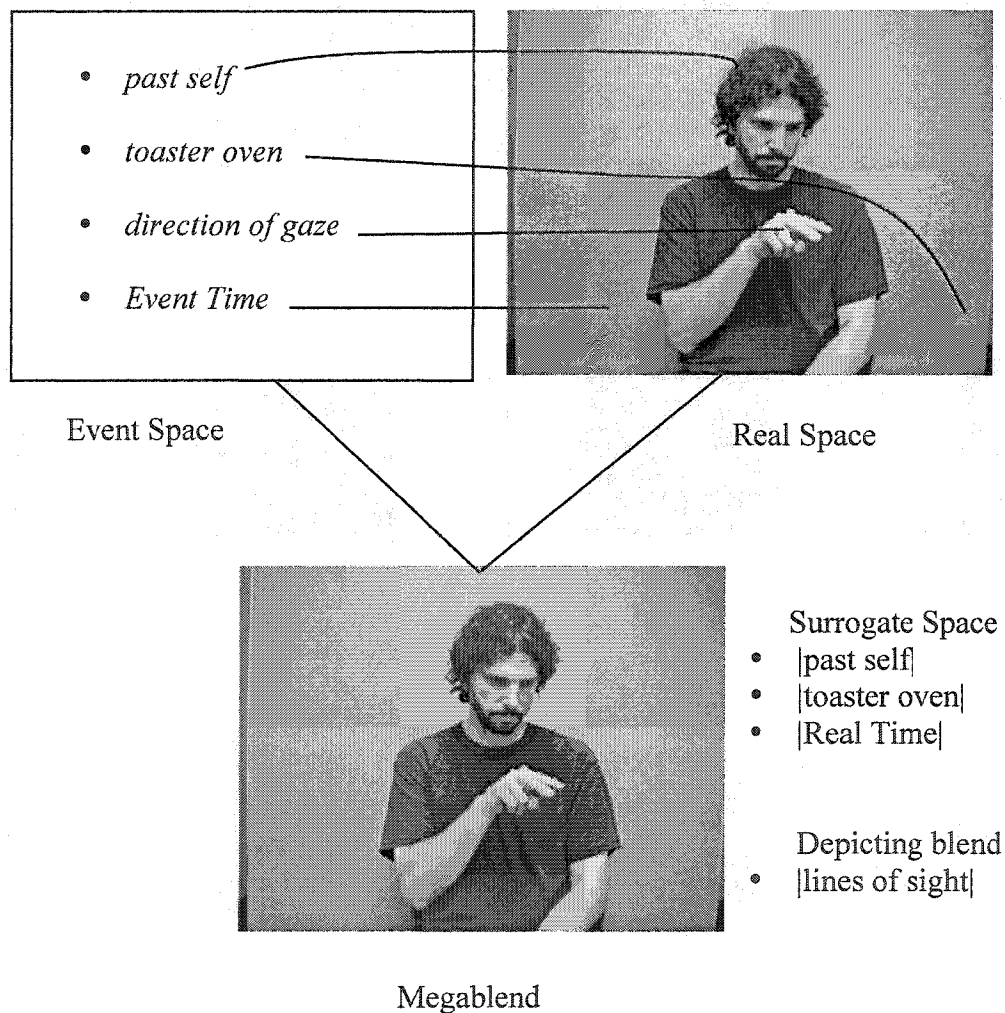


Figure 4: Representation of conceptual blending underlying (2b)

As discussed in Chapter 1, depicting verbs are partitioned off from the signer as surrogate when they do not depict the surrogate’s hand. LOOK-AT.protracted is

partitioned off from the signer because it does not represent the [hand] of the [past self]. Because the surrogate blend continues to have the [Real-Time] property, LOOK-AT.protracted must have some associations with depicting properties. In contrast, it is not possible to produce LOOK-AT during a [Real-Time] surrogate blend. If the indicating verb does not have depicting properties, then the depicting properties associated with LOOK-AT.protracted must come from the aspectual construction with which LOOK-AT combines. It is this association that allows not only verbs like LOOK-AT that exhibit iconicity but verbs that exhibit a lesser degree of iconicity as well. This will be discussed below with EXPLAIN.protracted. In the case of LOOK-AT.protracted, this aspectual form is integrated with the surrogate blend to create a megablend which resolves the clashes arising from the co-existence of the visible blended elements, the [past self] and the [lines of sight].

It is worth considering here what it means for a verb to be depicting as opposed to iconic. Many citation form ASL verbs are iconic but not depictive. LOOK-AT has iconic components, including a handshape that is iconic for “lines of sight.” Taub (2001) discusses metaphorical and iconic paths that certain indicating verbs have. However, these iconic properties do not confer to LOOK-AT the status of depicting verb.

An in-depth discussion of what makes a verb a depicting verb is beyond the scope of this chapter, but the following should illustrate the semantic contribution depicting time makes to certain depicting verbs. Some depicting verbs “signify the shape and extent of a surface or the extent of a linear arrangement of individual entities” (Liddell 2003:262). The handshapes or parts of them used in these verbs are both iconic and depictive. For example, to describe someone as having curls, the signer can produce an

index finger on top of the cheekbone on both sides and move it down in a spiral fashion. One possible analysis of the index finger is that it represents the |strand of hair|. This verb is produced in Real Time without mappings producing depicting time. The movement rate of this verb is normal, not fast or slow.² There is a related verb that is used to depict the growth of the curls. In addition to the depictive work of the index fingers in the creation of the |strands of hair|, Real Time also takes part in mappings that create depicting time. As a result, the growth of the curls is portrayed as if happening in front of the addressee's eyes.

Some parallels can be made between the pair of depicting verbs just described and the pair of LOOK-AT and LOOK-AT.protracted. Just as the fictive movement of the articulator used to describe the length and spiral width of the curl is not intended to be depictive, the path of LOOK-AT is not intended to represent a literal movement path. However, while the index finger handshape is depictive, exactly the same thing does not appear to be the case for the V handshape in LOOK-AT. However, the same handshape in LOOK-AT.protracted is depictive. Evidence comes from its requirement to move in conjunction with the movement of the surrogate's head, which is understood to occur in |Real Time|. This demonstrates that the signer is profiling the continuous existence of the surrogate's eye gaze during the activation of the surrogate blend.

Another difference between the two pairs is worth pointing out briefly here. Both pairs of verbs are partitioned verbs as they do not represent the |surrogate's hands|. When the depicting time within the surrogate blend is active, the partitioned depicting verbs need to be integrated with the surrogate blend. Because the scale of the |strands of hair| and the surrogate are compatible, the two blended elements are understood to share the

² This appears to be a good example of fictive motion (Talmy 2000a) in ASL verbs.

same |physical space| within the megablend that results from the integration of the two blends. In contrast, certain properties associated with |lines of sight| clash with those associated with the surrogate. For one thing, the |lines of sight| are, unlike the |strands of hair|, not understood to be existing near the |surrogate|. Yet once the |lines of sight| is integrated with the surrogate blend, the resulting megablend allows them to co-exist in a different way. We can see here how the ability to partition the body not just allows the signer to add distinct blended elements, but also interesting depicting possibilities that cannot be said to be wholly iconic.

EXPLAIN (3a) and EXPLAIN.protracted (3b) are comparable with the LOOK-AT and LOOK-AT.protracted. Both citation forms are indicating verbs and the aspectual forms profile an ongoing event. There are some differences between the two pairs. First, EXPLAIN is not a movement-hold sign, but a bidirectional sign that is reduplicated. EXPLAIN.protracted is not a single hold, but can be seen to have a length that is more extended than that of the citation form. Despite the differences in their forms, I assume that LOOK-AT.protracted and EXPLAIN.protracted are both the result of the same process of blending a citation form verb and an aspectual construction.



3a) EXPLAIN



3b) EXPLAIN.protracted

The second difference between the two pairs arises from the iconic properties associated with the handshapes. In contrast to the V handshape in LOOK-AT, it is not obvious at all as to what motivates the iconicity of the F handshapes in EXPLAIN. Still this does not preclude the creation of EXPLAIN.protracted or its use during the activation of a surrogate blend. (4) is an example of how the aspectual form can be used.



4) PORTER EXPLAIN.protracted
“Porter was explaining it (like this).”

After the signer produces a name sign (PORTER), the signer’s eye gaze shifts away from the addressee and produces EXPLAIN.protracted. It is clear that the signer is understood to be |Porter| during the production of the verb. Since |Porter| is not construed as producing the verb, the manual articulators are partitioned off. The ability of this particular verb to be produced simultaneously with the surrogate blend demonstrates that the lower degree of (or even lack of) iconicity of the verb does not preclude the creation of the protracted aspectual form.

The other two examples of aspectual forms differ from the two just described above in that they involve manual verbs and they exhibit different outcomes of the formal portion of the blending process. OPEN-CHAMPAGNE-BOTTLE in (5a) is a movement-hold verb, and its aspectually related form in (5b) is a single, extended hold similar to

LOOK-AT.protracted. However, as discussed in Section 2, (5b) profiles a different temporal stage of the event, a pre-inceptive stage rather than the durative stage that LOOK-AT.protracted profiles. It is also clear that in (5b) that the signer is understood to be a surrogate and that the signer's hand represents the |surrogate's hands| and thus are not partitioned off.



5a) OPEN-CHAMPAGNE-BOTTLE



5b) OPEN-CHAMPANGE-BOTTLE.protracted.pre-inceptive

Finally, there is an aspectual form that depicts the event at the moment of inception until completion, and I tentatively call this the “goal-completive” form as it depicts perfectly good instances of the event in question. As will be discussed in Section 2, depicting time is not deactivated at the moment the event is understood to be completed, but continues for at least a few moments after the completion. This is one of the characteristics, admittedly a somewhat nuanced one, that contrasts it from the citation form. For example, (6) is the citation form of OPEN-BOTTLE, a verb that is a highly iconic, two-handed, movement-hold sign. This verb is produced without the activation of a surrogate blend so its movements are to be seen as schematized. The aspectual form (not illustrated) has the citation form symbol integrated with the aspectual construction, resulting in a |Real-Time| depiction of opening a bottle. The |Real Time| is continuously activated from the moment the |hand holding the opener| touches the |hand holding the neck of the bottle| through the completion of the opening. The |Real Time| is still activated, even only briefly, in the aftermath of the opening and its continued activation depends on the communicative goals of the signer.



6) OPEN-BOTTLE

1.2 Distinguishing between citation forms and aspectual forms

To determine the process that creates aspectual forms, it is necessary to know what the citation form verb that serves as one input is. In ASL, it is not always easy to distinguish between citation form verbs and certain related aspectual forms. A number of cues are available to assist in distinguishing between the two. One comes from whether a direct object appears after the verb. As noted by Liddell (1980, 2003), Fischer & Janis (1990), and Metlay & Supalla (1995), nominals typically do not follow verbs that co-occur with certain aspectual forms of verbs. This is the case with the aspectual forms described above. The contrast in (7) demonstrates this constraint.

7a) PRO-1 OPEN-BOTTLE SODA-POP
“I opened the pop.”

*7b) OPEN-BOTTLE.goal-completive SODA-POP

Part of the motivation underlying this constraint probably could be attributed to the |Real-Time| property of the aspectual form. It seems clear that the aspectual form in (7b) is phonologically more dense than its related citation form verb, but we might want to also consider a semantic motivation, which the following includes. The integration of the citation form verb and the aspectual construction involves not only an elaboration of phonological components but semantic components as well, so that blended entities, whether visible or not, are specified. I have observed signers (and myself) producing a phonologically dense form of a verb but stop short of producing it longer than the citation form verb in order to produce a nominal. This nominal could be seen to function as direct object, but lacking an in-depth analysis, it is prudent to say that at the very least

this nominal elaborates the landmark of the verb. After the production of the nominal, the signer produces the aspectual form of the verb. This in a way resembles the verb sandwich construction described by Fischer & Janis (1990), which involves a citation form verb followed by a direct object and an aspectual verb form.

Another cue is available via nonmanual means. Most of the citation form verbs described above are typically accompanied by what Engberg-Pedersen (1993) terms *mouth patterns*. For example, the citation form of EXPLAIN can be accompanied by oral articulation that approximates the oral articulation of the English equivalent, “explain.” Such mouth patterns may indicate that depicting time is not in effect. A good example involves the verb SHOOT-GUN.goal-completive, which does not have the mouth pattern resembling any English verb. Prototypically, people typically do not say or mouth “shoot” when firing a gun, so this mouth pattern is not part of the event to be depicted. The signer is likely to instead produce a conventionalized onomatopoeic form such as the mouth pattern resembling “boom.” As onomatopoeic forms typically occur during depicting time, such forms can appear with aspectual forms of verbs. In some cases, mouth patterns that co-occur with citation form verbs could be extended in aspectual verb forms. For example, the mouth patterns that co-occur with STIR or REST could be extended to “stirrrrr” and “reeeeest” with the aspectual forms of the verbs, respectively. Finally, nonmanual adverbs (Liddell 1980, Baker-Shenk & Cokely 1980), which will be discussed in Section 4 below, are produced simultaneously with verbs. The verbs that these adverbs co-occur with are often aspectual forms, and so these adverbs can assist in distinguishing between citation forms and aspectual forms of verbs.

2.0 Temporal profiles of aspectual forms

This section describes the temporal profiles of the aspectual forms described in Section 1. Each form is demonstrated to be associated with particular portions of the event represented by the citation form verb.

2.1 Temporal profile of citation form verbs in Section 1

The diagrams below of the temporal profiles of ASL verbs are based on work on verb semantics modeling by Narayanan (1997) and Chang et al. (1998). The citation form verbs described in Section 1 share the temporal profile illustrated in Figure 5.

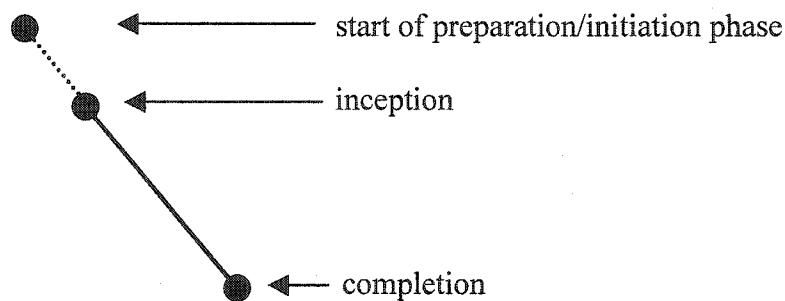


Figure 5: Temporal profile of citation form verbs in Section 1

The temporal structure is represented as a slanted line to distinguish this iconically from Real Time in the phonological pole of the verb, which is discussed below. The length of any part of this line is not intended to refer iconically to the specific length of the phases represented here.

The three bullets mark major temporal points of the event encoded by the verb. The topmost bullet represents the start of the preparation/initiation phase in which things are set up in order for the event to occur. For example, to be able to look at something,

prototypically the head need to be turned towards the object to be viewed and the eyes need to be open. The dotted line between the first two bullets indicate that this is not the profiled part of the LOOKING event, i.e. the head-turning or eye-opening do not themselves count as instances of “looking.” The bullet below the topmost one represents the inception of the event. The event’s duration is represented by the line from the second bullet to the next bullet, which represents the point of completion.

2.2 Temporal profile of the protracted aspectual form

LOOK-AT.protracted and EXPLAIN.protracted describe an event that is ongoing and not completed, so these verbs depict the central activity phase. These verbs are represented in Figure 6, where all the bullets are not profiled. The circled portion is the profiled activity phase, so the event is occurring between the inceptive and the complete points.

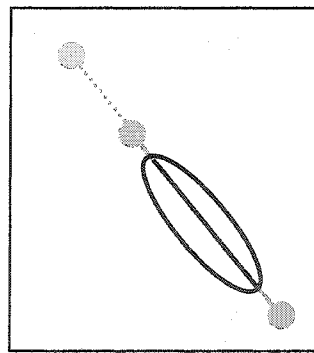


Figure 6: Temporal profile of the protracted aspectual form in ASL

Typically, when the protracted aspectual form of a verb is produced, the signer is understood to be a surrogate engaged in the profiled activity.

2.3 Temporal profile of the protracted pre-inceptive form

OPEN-CHAMPANGE-BOTTLE.pre-inceptive is also understood to depict an event occurring over a span of time. Instead of occurring after the inceptive point as with the profiled central activity phase (Figure 7), here the span of time occurs prior to the inceptive point.

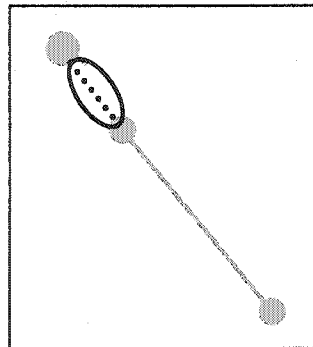


Figure 7: Temporal profile of the pre-inceptive form in ASL

When the signer produces the pre-inceptive form, OPEN-CHAMPANGE-BOTTLE.pre-inceptive, addressee see a surrogate prepared to perform the event. This aspectual form can be distinguished from the unrealized inceptive form of OPEN-CHAMPANGE-BOTTLE. The pre-inceptive form could be used to describe someone preparing to uncork the champagne bottle when a New Year's Day arrives. The unrealized inceptive cannot be used to describe such a situation. Instead, as Liddell (1984) points out, the unrealized inceptive is used when the agent is about to perform the activity but is interrupted. For example, the form could be used to describe how someone who was about to apply force to the champagne cork is interrupted, stopping the attempt to open. Therefore, the temporal profile of the unrealized inceptive aspectual form is similar to that in Figure 9, but is understood to be closer to the inceptive point.

2.4 Temporal profile of the goal-completive form

In Section 1, I described OPEN-BOTTLE.goal-completive as depicting the opening of a bottle with a bottle opener from the moment the opener is fastened onto the bottlecap to the opening of the bottle and the aftermath. This sign profiles the inceptive and completive points, as illustrated in Figure 8.

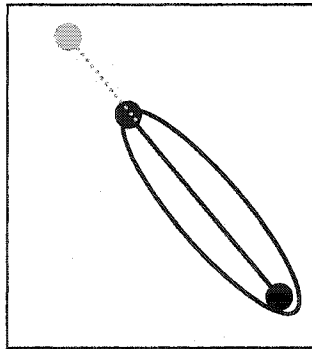


Figure 8: Temporal profile of the goal-completive form in ASL

(7) is one example of how OPEN-BOTTLE.goal-completive could be used. This verb is part of a verb sequence depicting an event of opening of a bottle and handing it to someone, from the viewpoint of the person opening the bottle.

- 7) OPEN-BOTTLE.goal-completive HAND-BOTTLE-OVER
“I opened the bottle and handed it to her.”

There is no intervening break between the two verbs. (7) could be described as a depiction of a single scene because the depicting time proceeds unbroken throughout the expression. The production of two verbs without suspending |Real Time| is illustrated in Figure 9.

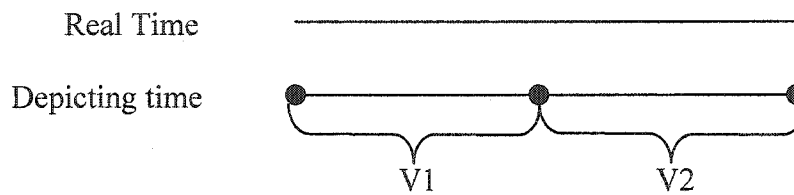


Figure 9: Verb sequence produced without interruption of depicting time

As previously described, Real Time is the progression of time that is part of Real Space. In Figure 9, Real Time does not have any endpoints, so there are no bullets on the Real Time marking temporal phases. Real Time continuously exists prior, during, and after discourse. Depicting time, the result of mapping a conceived Event Time onto Real Time, proceeds during Real Time. This is represented by putting the depicting time line in parallel with the Real Time line in Figure 9. The bullets on the depicting time line represent the endpoints of the two verbs in (7). The final endpoint of the first verb, V1, and the initial endpoint of the second verb, V2, coincide. The phonological integration between these endpoints is part of the |Real-Time| depiction, so that the depicted event of handing over the bottle is construed as occurring immediately after the depicted event of the bottle opening.

Depicting time, of course, is not continuously activated in ASL discourse. Sometimes, for instance, discourse goals such as listing activities do not require depicting time. For example, the expression in (8) has two verbs related to those in (7), but does not create a |Real-Time| surrogate blend.

8) OPEN-BOTTLE.nod HAND-BOTTLE-TO.nod

(8) could be used by someone describing what activities have been successfully programmed into a robot. The first verb is analyzed to be a citation form verb because it has the mouth pattern resembling “open.” This mouth pattern, as discussed above, is one cue that the expression does not exhibit depicting time. Occurring with this verb is a head nod, which appears to have the function of communicating a list, here a list of activities. This particular head nod seems to be associated with expressions that do not have depicting time. Figure 10 illustrates how the verbs and nods are produced as part of signing time, i.e. production time. The pause occurring between the two verbs (during which the manual articulators are held in place) are also part of signing time as it is itself a part of the utterance. Signing time proceeds during Real Time, but in (8) does not contain depicting time.

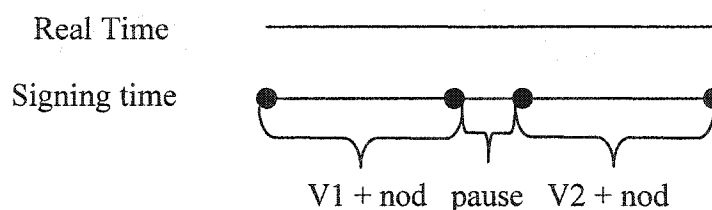


Figure 10: Sequence of verbs in (8) produced without depictive [Real-Time] blending

Depicting time is produced as part of a surrogate blend in order to depict actions. The actions being referred to often have a larger context, of which a broader description is not conventionally performed via [Real-Time] surrogate blends alone. In normal, everyday ASL discourse, whether a conversation, a lecture, or a narrative, this larger context is likely to be introduced during the first moment of signing time and produce

|Real-Time| surrogate blends after such an initiation. For example, the signer might provide cues that a narrative is going to be produced by signing (9), which does not activate depicting time. The “conversation-opener” is an attention getting sign that involves the waving of an hand towards the intended addressee.

9) *conversation-opener* AWFUL! YESTERDAY...

Moreover, the larger narrative context can be seen to have its own, specific temporal progression. I will call this *depicted time*. As demonstrated below, this reveals a greater complexity than described in (7) or (8).

During narratives it is common for the signer to activate, deactivate, and reactivate depicting time (the surrogate blend itself can be continuously activated independently of any activation of depicting time). We see such an example in (10), which uses the non-depicting temporal adverb TOMORROW. The first part of (10) has the signer talking about not being happy about seeing a group of individuals loitering. (10a) is a depicting verb that encodes “mingling”, and this verb co-occurs with a surrogate blend in which the signer is understood to be a |viewer|. (10b) depicts the reaction of the |viewer| who “waves it away.”³ The production of TOMORROW (10c) deactivates |Real Time|. Then the signer then briefly reactivates |Real Time| by returning the body and eye gaze to the right. As the |viewer| once again, he depicts the entity’s reaction to seeing the group again (10d). |Real Time| is deactivated when a sign meaning something similar to “Yet again!” is produced (10e), and reactivated in (10f).

³ This sign does not necessarily depict the physical action made by the |viewer|. It is probably more likely that this sign is used metonymically to describe the |viewer’s| judgment. Nevertheless, the sign retains its depicting status.

10)



10a)



10b)



10c)



10d)



10e)



10f)

The temporal progression and the depicting time activation sequence in (10) are represented in Figure 11. Real Time and signing time have already been previously discussed. Depicted time is represented by a single line with bullets coinciding with those on the depicting time line, which is fragmented due to two instances of |Real Time| deactivation (during 10c and 10e). The solid portions of the depicted time line represent the temporal component that is projected into the surrogate blend to create |Real Time|. The dotted line represents the portions that are not projected into the blend. This can be seen with the dotted line during the production of TOMORROW (10c). This sign is a space builder (Fauconnier 1985), which can be seen to partition the depicted time into two distinct mental spaces. The activation of the mental space built by TOMORROW allows the discourse participants to jump forward to a different time interval associated with depicted time. Obviously, during this temporal leap, the signer is bypassing all the events and activities that occurred in this interval. This bypass is represented by the dotted line portion during the production of TOMORROW (10c in the diagram). The dotted line during (10e) in the diagram

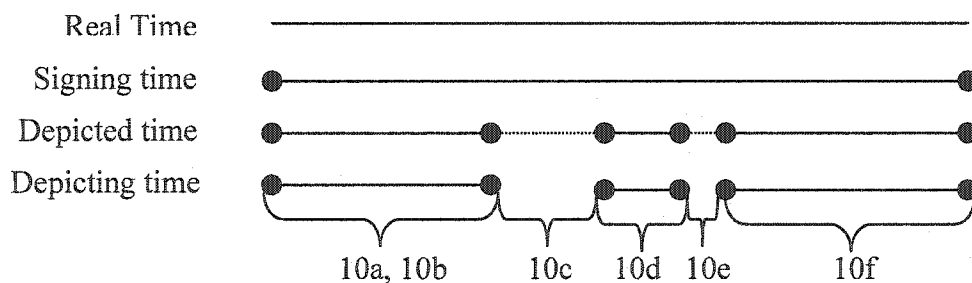


Figure 11: Sequence of verbs in (8) produced without depicting time

⁴ Often, however, the mappings are not second for second. Nevertheless, addressees construe that the depiction is a fine “re-enactment” of the event (perhaps a prototypical one), even if the actual event is shorter or longer. Signers have other conventional resources at their disposal should they wish to bring attention to the length of the event being depicted.

To fully describe the conceptual blending involved, we would need to add *depicted space* and *depicting space* to Figure 13 as well. An example of a depicting space is a surrogate blend without |Real Time| used to describe the layout of a real-world kitchen. In (10), the |viewer| is understood to be at the same place, looking towards the same direction, but on different days. Therefore, the depicting space as well as the depicted space remains constant in this portion of the discourse.

In Chapters 3 and 4, we will examine ASL expressions in which the signer produces |Real-Time| surrogate blends to describe a series of events or an event followed by a change of state. Depicting time plays a role in other expressions as well, such as those considered to be serial verbs. Serial verbs of motion were analyzed in Supalla (1990) and Slobin & Hoiting (1994). (11) is an example.



11) GO-THROUGH..... EXIT

As far as I can tell through reconstruction from illustrations and prose, most serial verb constructions are produced with depicting time. If this is the case, such expressions deserve a conceptual blending analysis. Moreover, this would then have typological

implications impacting on cross-modal comparisons between patterns in signed language and those in spoken languages.

3.0 Grammatical aspect in ASL: the schematic construction

In this section, I provide a constructional analysis of the aspectual construction involved in the creation of the aspectual expressions described above. I also use this approach to the complex expressions described in Chapters 3 and 4. I first briefly describe what is meant by “construction.”

3.1 Description of “construction”

Constructions “are taken to be the basic units of language” (Goldberg 1995:4).

Croft & Cruse (2004) offer the following description of the construction.

The notion of a construction in construction grammar is much more general than the traditional notion of a construction. In construction grammar, a construction can be atomic or complex; it can have parts that are morphologically bound as well as free; and any or all of the parts may be substantive or schematic. All constructions in construction grammar, though, are pairings of a syntactic and morphological (and where relevant, phonological) form with a meaning, including pragmatic meaning. Croft & Cruse (2004:256)

As Croft (1999) notes, these are some general principles shared by the existing varieties of construction grammar such as Construction Grammar (Fillmore et al. 1988) and Cognitive Grammar (Langacker 1987, 1991b). Since a continuum exists between lexicon and grammar, a single lexical item could also be considered as a construction. A verb like LOOK-AT is seen to be a form-meaning pairing that consists of (mostly) specified components. Aspectual constructions are also form-meaning pairings that consists of components that vary in their degree of schematicity. I will be demonstrating that these aspectual constructions need to have a |Real-Time| component as well as schematic

mappings of viewpoints. Such aspectual constructions also figure in the more complex constructions to be described in later chapters.

3.2 A constructional analysis of LOOK-AT

The following is a description of the components residing in each pole of the citation form verb LOOK-AT, which is diagrammed in Figure 12. These components are necessary for the constructional analysis of LOOK-AT. The semantic pole of LOOK-AT is represented by two boxes. The right box represents the verb's temporal structure, already discussed in Section 2.1. The left box indicates the participants associated with the LOOKING frame, *viewer* and *viewed object*.

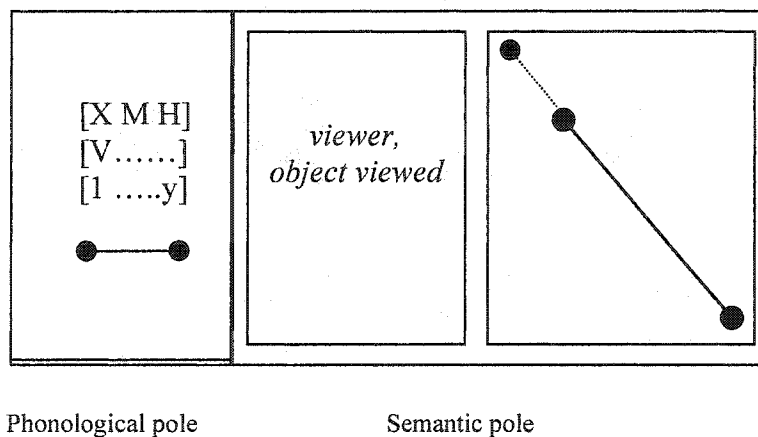


Figure 12: Diagrammatic representation of LOOK-AT

In the representation of the phonological pole in Figure 12, I use a simplified movement-hold (MH) phonological notation. The first tier represents segmental information, with “M” standing for movement, “H” for hold. “X” is used to represent the transitory phase in which the articulators are formed into configurations and placed at locations before the sign is executed. The second tier is the handshape tier, and “V” represents the handshape configuration, which is constant throughout the sign production.

Other information certainly needs to be included here, such as palm orientation, but for the sake of simplicity, I will not include them here. The next tier represents the locations that the hand moves between. For convenience, “1” in the MH notation is used to represent the beginning location of the sign, which is near the signer. The final location of this sign is marked by a variable “y.” This is because this final location is not (fully) determined by the verb. As discussed above, this verb be directed towards where the entity understood to be the *viewed object* is located, which could be just about anywhere in relation to the signer. Finally, at the bottom is a line bookended by two bullets. This is an iconic representation of the time it takes to produce the sign. This is intended for contrastive purposes only, to demonstrate that this citation form sign has a shorter production length than LOOK-AT.protracted.

3.3 The protracted aspectual construction described

Table 1 lists the mappings underlying LOOK-AT.protracted.

Phonological pole	Megablend	Semantic pole
signer	viewer	<i>viewer</i>
Hold segment V handshape	lines of sight	<i>lines of sight</i>
space t	object viewed	<i>object viewed</i>
general surroundings	environment	<i>environment</i>
Real Time	Real-Time	<i>Event Time</i>

Table 1: Mappings underlying LOOK-AT.protracted

This is the result of combining LOOK-AT and the schematic protracted aspectual construction described in the following. To determine the properties of the aspectual construction, one could compare the LOOK-AT and its aspectual form to determine what

components are necessary to create the aspectual form. Some of these components are listed in Table 2.

Phonological pole	Surrogate Blend	Semantic pole
signer	entity w/ viewpoint	<i>entity with viewpoint</i>
H		
manual articulator	entity ₁	<i>entity₁</i>
spatial locus	entity ₂	<i>entity₂</i>
general surroundings	environment	<i>environment</i>
Real Time	Real Time	<i>Event Time</i>

Table 2: Mappings underlying the aspectual construction

Part of the process of combining the verb and the aspectual construction involves cross-space mappings of components. Both constructions appear to have similar components such as the signer and the general surroundings. These entities are schematic, i.e. the ASL user or a generalized surrounding, as they are not yet employed in actual discourse usage. When they are used, they receive the appropriate mappings that specify the roles associated with these entities.

The elaboration of schematic components is another part of the process. A lexical verb construction has more specific components than the aspectual construction has. For example, the verb has for the most part a fully specified phonological pole, while the aspectual construction only specifies a single hold segment and a particular length of the segment. In this way, the aspectual construction is seen to be a more schematic construction than the verb. The V handshape of the verb elaborates the schematic handshape of the aspectual construction. The syllabic structure and the length is specified by the aspectual construction rather than the citation form because the former is the profile determinant (Langacker 1991a) there is no “competition” between the

constructions in this regard: it is the syllabic structure and the length of production of the aspectual construction that is projected. There are also differences in the schematicity of the semantic components of the lexical verb construction and the aspectual construction. The verb has more specific roles like *viewer* and *object viewed* rather than less specific ones like *actor*, *patient*, etc.

Figure 13 diagrams the aspectual construction involved in the creation of LOOK-AT, protracted. The phonological pole has only two specific components, a single hold (H) segment and the length of the sign. The ellipsis in the tiers indicates that the handshape and location features are schematized (as well as other features of the sign). In the semantic pole, for the frame participant we have an *agent*, and *participant* is specified as well as the temporal profile of protractedness.

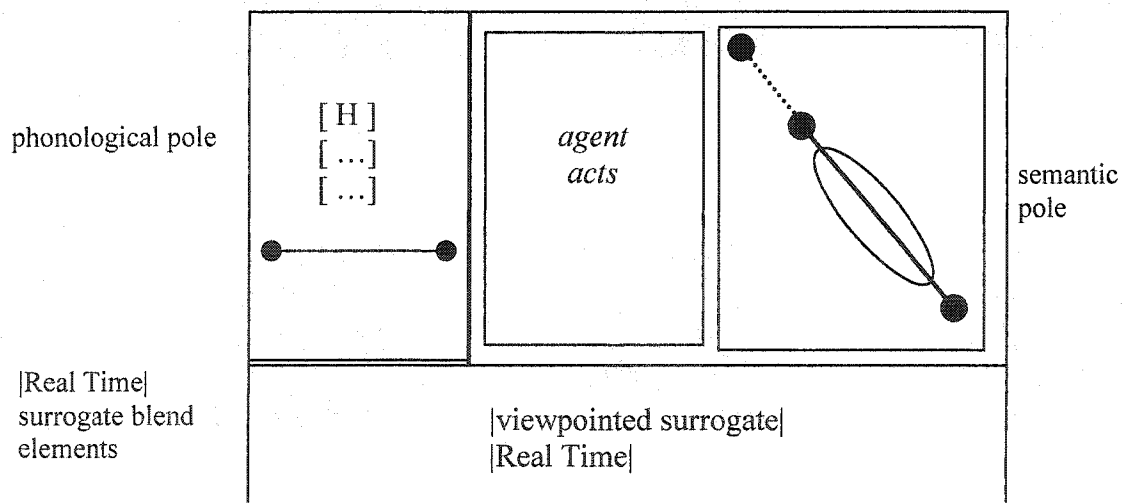


Figure 13: Diagrammatic representation of the aspectual construction

There is an additional component to the aspectual construction. This is the |Real-Time| surrogate blend that the construction activates. This blend is also schematic, containing a

[viewpointed surrogate]. This surrogate may or may not be the instigator of the event, e.g. the surrogate may be a patient or experiencer. However, the event is described from the viewpoint of this surrogate.

3.4 Blending of lexical verb and aspectual constructions

Having described the protracted aspectual construction, I now proceed to illustrate the process in which the verb LOOK-AT and the aspectual construction are assembled together to produce LOOK-AT.protracted. Figure 14 illustrates this integration.

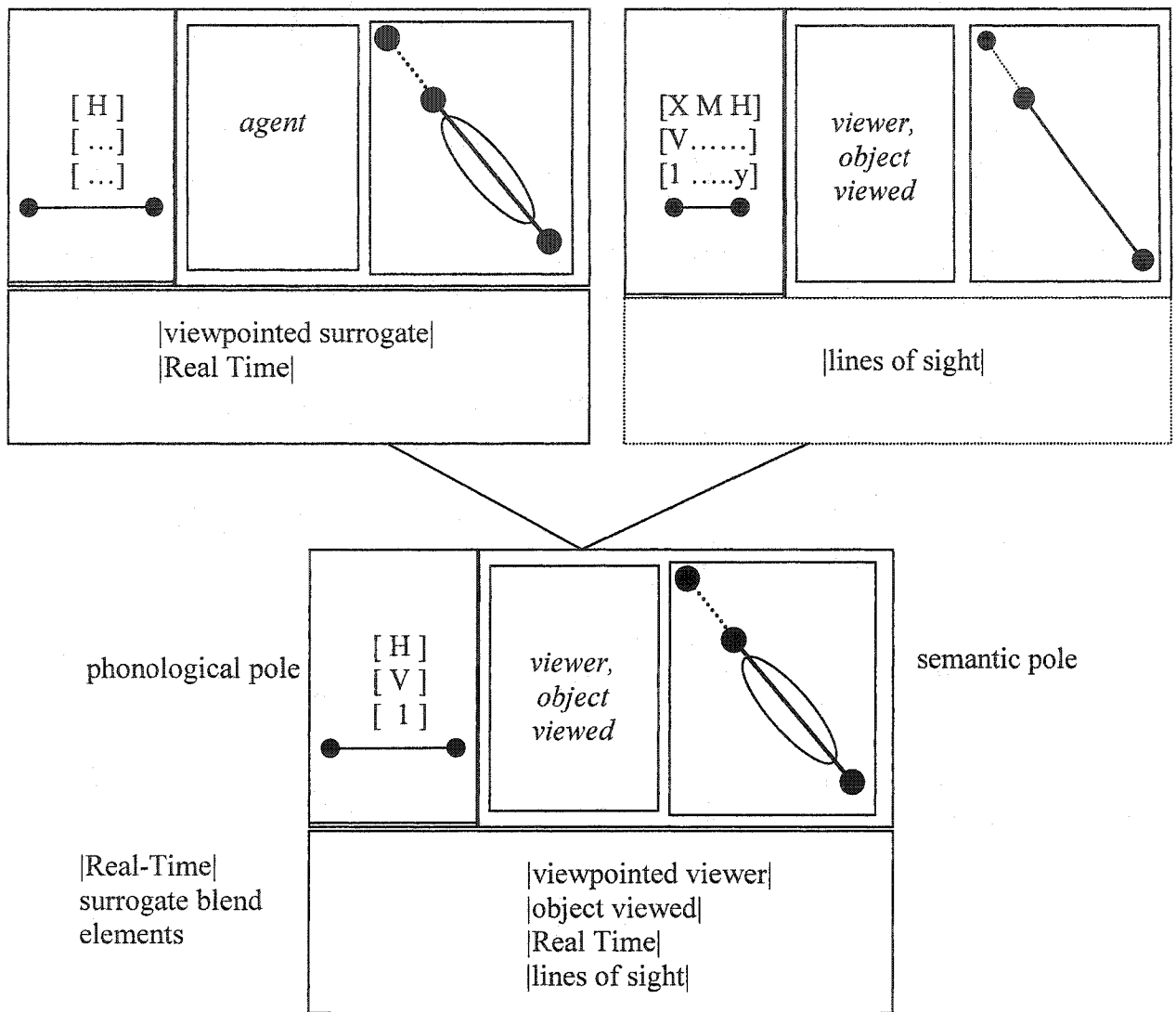


Figure 14: The integration of the citation form LOOK-AT and the protracted aspectual construction

I will describe a portion of the integration of the phonological poles first, which is illustrated in Figure 15. The citation form verb has for the most part a fully specified phonological pole. In contrast, the aspectual construction involved in the production of LOOK-AT.protracted is more schematic. What it does specify is a single hold segment and the length of the sign production. This information is also specified in LOOK-AT,

but it is the information from the aspectual construction that the resulting form inherits.⁵

The V handshape of LOOK-AT elaborates the schematic handshape of the aspectual construction, and is projected into the blend. Other information within the phonological pole, such as palm orientation and particular features of the sign also elaborate their counterparts and are projected into the blend as well. As for the projection of the manual articulator location, it would seem that there are two possibilities. If this is a matter of choosing which of the two segments is projected, what determines the selection? As the location of the manual articulator of the LOOK-AT, protracted is similar to location 1 in the verb construction, we can assume for the moment that the default is the selection of the first segment.

⁵ Again, the lines of the Real Time components are not intended to correspond with the actual length of sign production. They are included only to remind us that the aspectual construction specifies a longer sign production time.

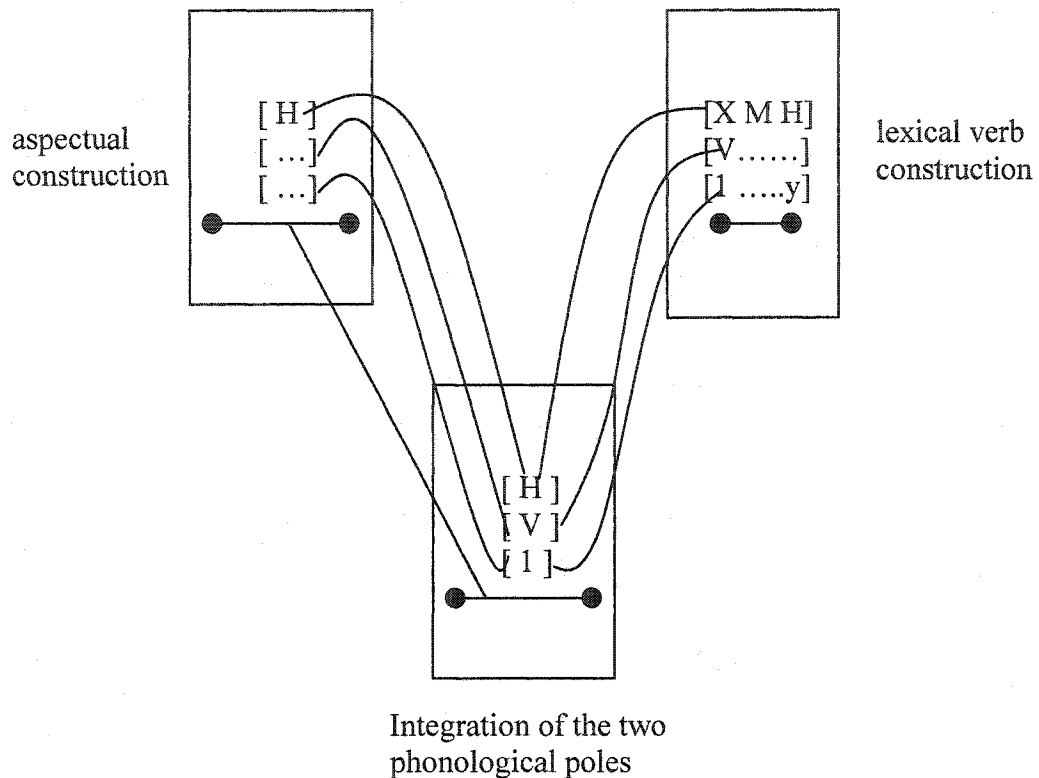


Figure 15: Phonological poles of LOOK-AT & the aspectual construction integrated

Turning to the semantic pole, the temporal profile in LOOK-AT.protracted is a specific instance of the temporal profile in the aspectual construction input. This is the result of integrating the schematized durativity of an event and its counterpart in the LOOK-AT input together. Figure 16 illustrates this integration. The counterparts are linked by a cross-space mapping. The temporal profile of LOOK-AT.protracted does not include the endpoints (the profiled portion is circled). This means that the activity is ongoing, not initiated or completed. However, these endpoints are backgrounded, continuing to be parts of the semantic pole. This allows the sign to be combined with other constructions, such as those that directly or indirectly indicate the endpoint of the event.

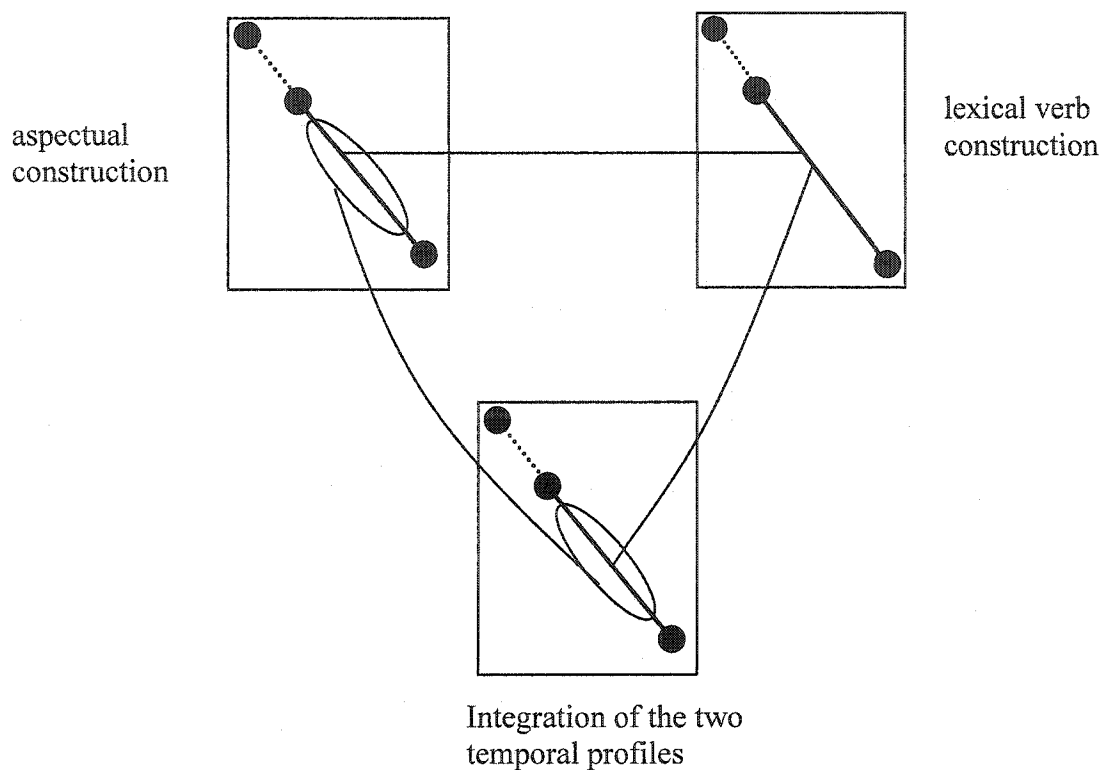


Figure 16: Temporal profiles of LOOK-AT & the aspectual construction integrated

As seen in Figure 16, an elaborative relationship also exists between the participant information contained in the semantic poles. The frame role of *viewer* in LOOK-AT elaborates *agent* in the aspectual construction. The frame in the latter is also schematic enough to contain an *entity* which the *object viewed* elaborates.

In addition to the integrations described above, there is an integration that creates a megablend. This is what makes the aspectual construction and its integration with lexical verb constructions distinct from equivalent constructions in English: to use the ASL aspectual construction is to activate a |Real-Time| blend. The |Real-Time| surrogate blend associated with the aspectual construction is elaborated, with the |viewpointed

surrogate| being specified as the |viewer|. Here the signer is then understood to be the |viewer|.

Because the V handshape is not part of a manual action verb, it is partitioned off from the |viewer|. However, since the |Real-Time| surrogate blend is activated, there is a need to integrate the V handshape with the surrogate blend. It is clear that the V handshape is not only understood to be |lines of sight| but is linked with the |viewer| as well. This link clearly exists when we see how the turn of the |viewer's head| is always accompanied by a corresponding movement of the |lines of sight|. It is not possible for one and not the other to move.

We also see here that certain signs may exhibit iconic associations that are “strengthened” when they exist in |Real Time|. The source of the |lines of sight| must be the citation form verb, LOOK-AT. The use of the citation form verb does not activate a |Real-Time| surrogate blend. We nevertheless can say that the verb's handshape has iconic associations, via metaphorical mappings, with the frame of LOOKING. When the verb and aspectual construction are blended together, the status of visible blended element is conferred upon the iconic handshape, activating the |lines of sight| that exist in |Real Time|. The iconic component of the verb is represented in Figure 16 in the dotted-line box at the bottom of the LOOK-AT representation.

4.0 Other issues

In this last section, I briefly address some issues relating to the aspectual verb forms. First, I suggest that other aspectual verb forms described in Section 1 are the result of a similar integration of aspectual construction and citation form verb. I then discuss how the manual articulators of indicating verbs like EXPLAIN, which cannot be

produced in a |Real-Time| surrogate blend (aside from constructed dialogue), are able to co-occur in the |Real-Time| surrogate blend that the aspectual construction activates. The compression of Time as a Vital Relation (Fauconnier and Turner 2002) into the blend is touched on as well as the role of facial expressions vs. nonmanual adverbs that co-occur with the aspectual verb forms.

4.1 A single aspectual construction and the blending process

In Section 3, I have detailed the constructions and integration involved in the production of LOOK-AT.protracted. Here I suggest that the same aspectual construction is involved in the other aspectual forms described in this chapter. These verbs can be analyzed as the result of integrating the aspectual construction and a citation form verb. Differences among these aspectual forms come from the differences in cross-space mappings.

As mentioned above, the temporal profile of EXPLAIN.protracted is similar to that of LOOK-AT.protracted. The essential difference between the two forms lies in the phonological poles of the citation form verbs: LOOK-AT is a MH sign while EXPLAIN is bidirectional. This bidirectional property probably impacts on resulting form of EXPLAIN.protracted, but the temporal profiles remain similar.

OPEN-CHAMPAGNE.protracted.pre-inceptive has the same single hold form as LOOK-AT.protracted. However, the two differ in their temporal profiles. Nevertheless, it appears that the same aspectual construction and blending process are involved. First, it makes sense that OPEN-CHAMPAGNE does not have a related aspectual form having a protracted temporal profile, as the opening of the champagne bottle is an instantaneous event. What could be protracted is the preparation stage of the event occurring prior to

the inceptive stage, e.g. the gripping of the bottle and its positioning necessary prior to its opening. In Figure 17, there is a counterpart mapping between the temporal stages of the inputs. These counterparts are projected into the resulting verb, OPEN-CHAMPAGNE-BOTTLE.protracted.pre-inceptive.

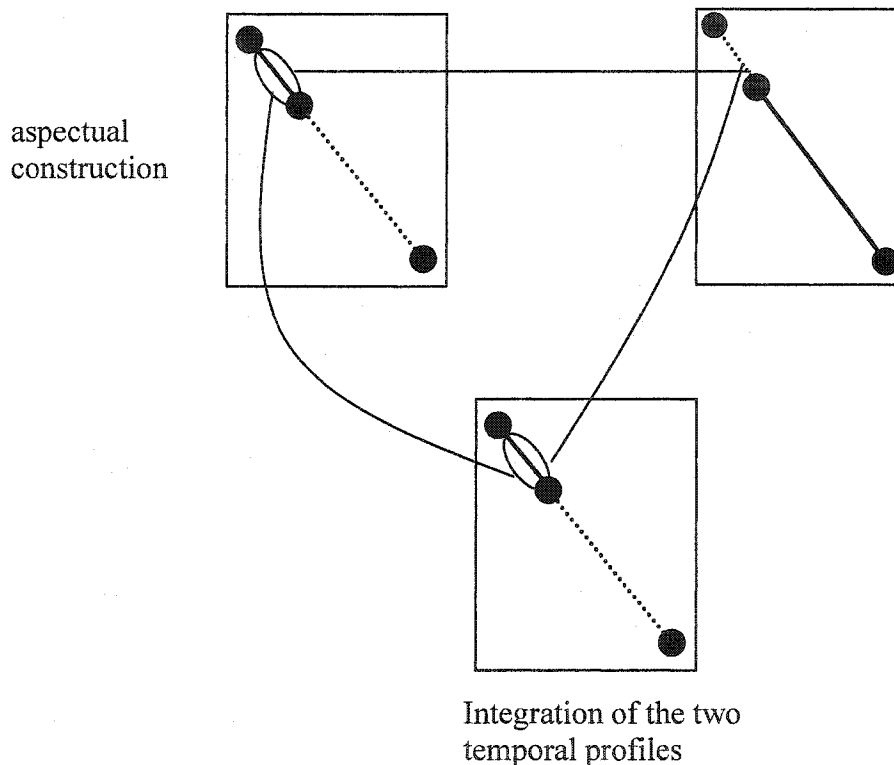


Figure 17: Pre-inceptive temporal profiles of OPEN-CHAMPAGNE-BOTTLE & the aspectual construction integrated

Finally, the goal-completive aspectual form is the most distinctive of the aspectual forms examined in this chapter. The temporal profile includes the inceptive point through the completive point and the aftermath. I have not yet made the following determination, but it is possible that the goal-completive aspectual forms involve only manual action verbs. This is because manual action verbs such as OPEN-BOTTLE, PUSH, START-

IGNITION have the manual articulators and related features such as orientation and location are iconically associated with the inceptive and completive stages of the events that they encode. These citation form verbs do not exhibit depicting time, but the goal-completive forms of these verbs clearly do. Again here we see the same aspectual construction and blending process involved, but with differences in cross-space mappings between the inputs.

4.2 Non-iconic handshapes in aspectual forms

In most of the aspectual verb forms described above, the handshape depicts a metaphorical or iconic object. The exception is the F handshapes in EXPLAIN, protracted, which are not understood to depict anything, not even the *explainer's hands*. If the handshape has an iconic association, it is not as immediately clear as to what it is, so unlike the |lines of sight| which are part of the iconic component of LOOK-AT, the F handshapes are not part of the iconic component of EXPLAIN.

Yet the non-depicting status of the F handshapes does not preclude the activation of the |Real-Time| blend that is associated with the aspectual construction. Recall that EXPLAIN, like other indicating verbs such as ASK, GIVE, and TELL cannot be produced during a |Real-Time| blend. Moreover, as proposed earlier, partitioning the manual articulator with |Real Time| continuing to be activated prompts further integration. It seems that the indicating verb EXPLAIN is able to integrate with a |Real-Time| blend because of its association with the aspectual construction. That is, the non-depicting verb has cross-space mappings with the aspectual construction, and once the links are made, the co-occurrence of the depicting and non-depicting elements pose no

problem. In fact, the presence of the handshapes and its continued movement could be seen to mark the ongoing process of the event.

We could look at the unrealized inceptive form of EXPLAIN for supporting evidence. The relative position the handshapes have to each other is where they would be at the beginning of the citation form location. The fact that they do not move in alternating fashion could be seen to mark that the process has neared but not entered the inceptive stage.

4.3 Compression of time in aspectual forms

In Chapter 1, I mentioned that the mapping between Real Time and Event Time is not necessarily one-to-one. In some verbs, however, it seems that depicting time has temporal characteristics that are understood or assumed to progress at a prototypical rate associated with the event that the verb encodes. The depicting verb HAND-OBJECT-TO is a good example of this. The temporal characteristics of some aspectual forms such as EXPLAIN.protracted are not understood in the same way. In such forms, the Real Time it takes to produce the sign is shorter than the amount of time it typically takes, for example, to explain even an uncomplicated matter. Those who are not inclined to entertain the role of iconicity in signed language might offer this as an example of how grammar can be seen to suppress iconicity. I would argue that that despite the differences in temporal characteristics, depicting time—itsself an iconic product—is still created in such instances.

Fauconnier & Turner (2002) describe *compression* as one important process associated with blending. There are different kinds of compressions involving *vital relations*, which are relations within a mental space or between mental spaces. Time is

one such vital relation, which can be compressed so that the conceptualizers are able to “handle” a particular stretch of time in any domain.

Many vital relations come with a scale. An interval of time, for example, can be long or short. One of the most obvious kinds of compression is simply scaling down. In the ritual of the Baby’s Ascent, one input encompasses an entire human life. That temporal interval is shortened, as it is projected to the blend, to equal the amount of time it takes to carry a baby up the stairs. An inner-space vital relation within one of the inputs is thus compressed to a tighter inner-space vital relation in the blend by using the temporal compression already provided by the other input. (Fauconnier & Turner 2002: 312-313)

This description of such a compression appears to be involved in the production of EXPLAIN.protracted. When the time associated with the verb EXPLAIN is scaled down in the blend, it does not mean that depicting time cannot be created. Instead, EXPLAIN.protracted has a depicting time that is potentially understood to represent a longer stretch of time. We will see many instances of this type of compression in the following chapters. This notion of compression as applied to aspectual verb forms in ASL deserves an in-depth examination. Other types of aspectual constructions, especially those that include cyclic movements of the manual articulators, should also be included in such a study.

4.4 Facial expression & adverbial NMS in the aspectual forms

During the activation of a |Real-Time| surrogate blend, the facial expression of the signer is often understood to depict the facial expression of a surrogate. Such facial expression, while it might be considered affective, is nevertheless conventional and contributes to the meaning of the expression. LOOK-AT.protracted may be accompanied with a blank stare, a wry look, puzzlement, and so on.

Some non-manual configurations that may accompany aspectual verb forms are well known as non-manual adverbs (Liddell 1980, Cokely and Baker 1980). Examples of

such non-manual adverbs include the “*ih*” NMS—which has the tongue partially stuck out—that is associated with “carelessness” or “impropriety,” and what I call the *effortful* NMS, which has the teeth clenched and eyes squinting. In some cases, it is clear that the surrogate is not producing the face configurations that produce these forms and so they are partitioned off. These partitioned off nonmanual adverbs are integrated with the surrogate blend to create a megablend. This is possible because the nonmanual adverbs are associated with depicting time.

5.0 Summary

This chapter demonstrates that |Real Time| is not just found in discourse or in verbs, but in larger constructions as well. |Real Time| here was shown to be a component of a number of aspectual constructions in ASL. The aspectual constructions described in this chapter include the protracted aspectual form, the pre-inceptive, protracted aspectual form, and the goal-completive aspectual form. It is typical for many aspectual forms of verbs to have the signer representing a surrogate, even when the related citation-form verb does not. This was offered as evidence that |Real Time| is part of aspectual constructions, and it is suggested that |Real Time| is found in other aspectual constructions as well. This illustrates the importance of |Real Time| to ASL grammar. The following chapters further demonstrate this importance through the analyses of more complex constructions of which |Real Time| is shown to be one component.

Chapter 3: The Expectation-Fulfillment Construction

0.0 Introduction

In Chapter 2, depicting time was shown to be an integral component of a different aspectual constructions existing in ASL. These constructions are found in more complex constructions, which this and the following chapters examine. In this chapter, I examine what I call the expectation-fulfillment construction. This construction is used to produce expressions like (1) – (3) below.



- 1) WAIT.protracted.....CALL-1.ah
I waited and then they called me.



- 2) TWIST-OPEN-CONTAINER.pre-inceptive.effortful.....ah
I struggled to open the jar and finally opened it.



- 3) READ.protracted.*effortful* EXTANT-KNOWLEDGE-INCREASE.goal-completive.*ah*
I read and read until I obtained a store of knowledge.

In (1) – (3), a |Real Time| surrogate blend is used to describe (at least) two events that have a particular relationship with each other. The first event depicts an action performed by a surrogate represented by the signer. This surrogate performs the action with the *expectation* that a specific event will occur. A description of the second event immediately follows. As seen in the illustrations, during this description the signer simultaneously produces a backwards head nod and slightly opens his mouth. I use “*ah*” to gloss this set of NMS. This NMS indicates that the expectation has been *fulfilled*. These two phases have a tight relationship. While it is possible to produce the aspectual form of verbs in (1) – (3) in isolation, it is not possible to produce the *ah* NMS and the lexical item it co-occurs with in isolation. For example, it is not possible to leave out WAIT.protracted in (1) to produce (4).

- *(4) CALL-1.ah
They finally called me.

To describe the expectation-fulfillment construction, below I first closely examine the expression illustrated in (1). This is followed by a description of the integration of the construction with the event space and the lexical items representing entities in that space. These discussions will illustrate the role |Real Time| and other, schematic surrogate blend components are part of ASL grammar.

1.0 General description of the expectation-fulfillment construction

The expectation-fulfillment construction in ASL is used by the signer to describe a sequence of two interrelated events using a single, unbroken stretch of depicting time. In this section, I describe both phases of the construction, the expectation phase and the fulfillment phase, using the expression illustrated in (1). This will serve as a starting point from which to address different instantiations of the construction.

To place (1) in context, the expression could be used as part of a narrative about someone's job interview experience. The expression describes the job applicant's waiting to be summoned for the interview until he sees that an office worker is summoning him.

1.1 The expectation phase

The expectation phase begins with the activation of a |Real-Time| surrogate blend. Several cues indicate this activation. Directing the eye gaze away from the addressee while signing is often a reliable indicator that the signer has projected himself into a blend. In the case of (1), the signer also blends his viewpoint with that of the counterpart *job applicant*, creating a surrogate |job applicant|. The eye gaze behavior in (1) is understood to be that of this |applicant|. Other nonmanual activity such as head

movements and facial expressions are also understood to be that of this |applicant| (this surrogate is looking around with a slightly resigned look). Table 1 lists the mappings underlying the surrogate blend.

Real Space input	Event space input	Blended space
signer	<i>past self</i>	past self
environment	<i>office</i>	office
Real Time	<i>event time</i>	Real Time

Table 1: Mappings underlying surrogate blend in (1)

We also know that a |Real-Time| surrogate blend is activated in (1) because the signer produces an aspectual verb form of WAIT. As described in Chapter 2, the schematic aspectual construction has a |Real Time| component that is the result of mapping *Event Time* with Real Time. When the citation form WAIT and the protracted aspectual construction are integrated, the result is a |Real Time| megablend in which a surrogate |individual waiting| exists and the manual articulators are partitioned off to produce WAIT.protracted. It is not possible to use the citation form WAIT during |Real Time| to describe a “waiting scenario,” so it is clear that |Real Time| is activated during the expectation phase in (1).

Figure 1 is a diagram of WAIT.protracted. The upper two boxes indicate the participant involved (|*individual waiting*|) and the temporal profile. Both are the results of the integration of WAIT and the protracted aspectual form. The bottom box represents the megablend. Here we see the signer as the |applicant|, who specifies the role |*individual waiting*|. The environment surrounding the signer is understood to be the |office|. Again, the depiction of waiting involves a compression of time, and addressee

will decompress this as indicative of a prototypical waiting time, neither overly long or very short.

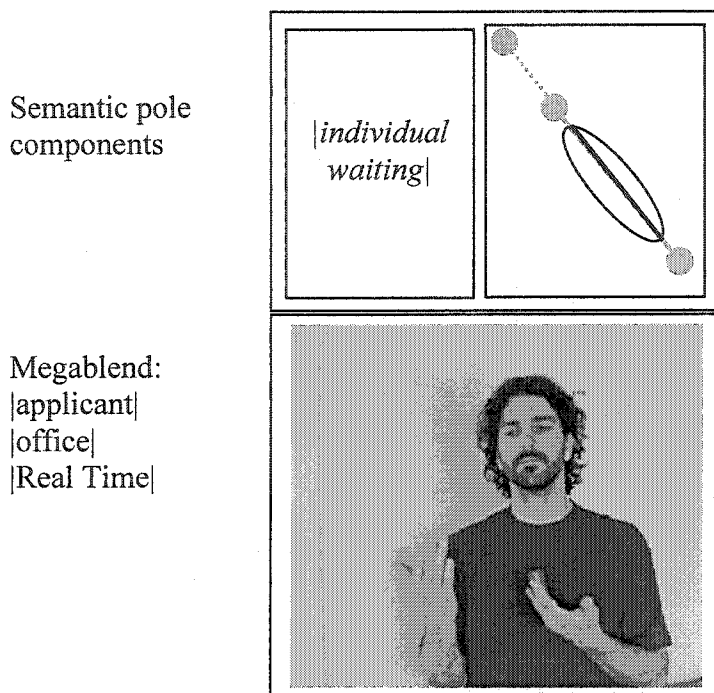


Figure 1: Diagrammatic representation of WAIT.protracted in (1)

Because WAIT.protracted is produced as the first phase of the expectation-fulfillment construction, there is an additional component involved here. This is the expectation that the [job applicant] has during this phase, which is being called into for the scheduled job interview. The construction will need to have an “expectation” slot in the expectation phase, which we will see in the diagrams in Section 2 below.

1.2 The *ah* NMS and the fulfillment phase

Immediately following WAIT.protracted, CALL-1 is co-produced with the *ah* NMS. These mark the fulfillment phase. The interpretation here is that the [applicant] notices that he is being summoned by the surrogate [office worker]. It is clear that the [job

applicant continues to be present here. As seen in the illustration of this phase in (1), the signer's eyes remain directed away from the addressee. This indicates that the |Real-Time| surrogate blend activated in the expectation phase continues unbroken into the fulfillment phase: neither CALL-1 or the *ah* NMS suspends depicting time in (1).

The *ah* NMS produced in (1) includes a backward head motion and the face widened, eyebrows slightly raised, and jaw lowering slightly with the mouth producing "ah." The set of NMS is clearly associated with the surrogate. However, as we will see, this NMS is not necessarily understood to be the actual, physical configuration made by the surrogate, i.e. these external features are visible to other human surrogates within the blend. Sometimes it appears that the NMS indicate the surrogate's cognitive response to the 2nd event, e.g. it is not a physical state that is changed, but a psychological state. The latter state is associated with the recognition of an anticipated event.

There are other instances in ASL where NMS similar to the *ah* NMS used in (1) can be found. PAH! "finally" illustrated in (2a) often is accompanied by similar NMS. In some cases, it is possible to use PAH! instead of a verb in the fulfillment phase of the construction. The ASL sign IX-AH, illustrated in (2b), is another sign where similar NMS is found. This sign is used by the signer when he wishes to communicate that he finds some comment to be useful or interesting ("Ah, that's a good point!").



4) IX-AH

Here the manual portion of this sign is an index finger pointing towards a location of another signer or some entity eliciting this particular sort of attention. It could be used in direct discourse or as part of constructed dialogue. Despite its apparent nonprototypical semantics—it appears to be a discourse marker, perhaps akin to types such as the clearing of one's throat to get attention—there is no reason for not considering IX-AH to be a full sign.

As illustrated in (5), IX-AH can be used in a different scenario of recognition. Here since the surrogate is not communicating to another surrogate, IX-AH is not understood to be the actual signing produced by the surrogate. In (5), the signer is talking about looking for an insect missing from his live collection and finding it. Throughout the expression |Real Time| is activated during which the signer is understood to be the |past self|.



5) LOOK-AROUND.....IX-AH
“I looked around and there it was!”

Because the surrogate is looking for the [insect], IX-AH can be used to indicate that the surrogate has found the [insect]. If a signer is talking about being surprised when seeing an insect crawl up a wall next to him, IX-AH would not be produced in this case. This demonstrates that the *ah* NMS has the frame associated with not just NOTICING, but with EXPECTATION as well.

A gesture similar to IX-AH in form and meaning is also found in non-signing populations, often accompanying spoken utterances such as “Ah, there you are” or “Ah there it is.” The manual gestures used in tandem with the facial expression appear to vary, but they all point towards the location of the entity in question. There is thus a possibility that this gesture has been grammaticalized into ASL. As discussed further in 1.3, it is plausible that the three items—the ASL sign IX-AH, the larger, “mainstream” gesture, and the *ah* NMS—share a similar frame of NOTICING. This suggests a probability that the *ah* NMS is a conventionalized gesture exhibiting frame metonymy.

During the fulfillment phase of (1), there is a partitioning of manual articulators that is necessary to produce CALL-1. What is interesting here is that CALL-1, an

indicating verb, is produced with |Real Time| activated. It appears that this is possible because the verb is associated with a mental space of the surrogate's recognition of the event. As this recognition occurs during |Real Time|, CALL-1 can be produced without suspending |Real Time|.

In sum, the expression in (1) depicts a |job applicant| waiting until the surrogate sees that he is summoned by an |office worker|. |Real Time| continues unbroken from the beginning of the expression until the end. It is not possible to produce CALL-1.*ah* in isolation. As described in Section 2, this expression instantiates the expectation-fulfillment construction. This construction has a schematic surrogate entity, a continuously activated |Real Time|, the aspectual construction, and the *ah* NMS marking the fulfillment phase. This is a single construction in which two schematic events are interrelated and occur in immediate succession. It is this interrelationship that sets the expressions apart from other expressions describing two events that occur in sequence.

1.3 The mental space signaled by the *ah* NMS

The use of CALL-1 in (1) is interesting because it is produced during depicting time. Like GIVE, CALL-1 is an indicating verb, and is typically not produced during depicting time outside of constructed dialogue. The following analysis suggests that it is possible to use CALL-1 in (1) because we are well in understanding the mental space activated during this phase.

To better understand CALL-1, the following examines how the indicating verb CALL is used. CALL is directed towards an individual or a representation of the individual who is understood to be the *called* in the frame associated with the verb. (6) demonstrates how this verb might be used in a narrative in which a female office worker

calls the job applicant into an office. The signer first signs (6a) WOMAN, identifying the surrogate that he soon represents. When this sign is produced, |Real Time| is not activated.



6a) WOMAN

As illustrated in (6b), the signer then leans forward and turns to his left, looking out at a distance on his left hand side and produces WAVE-AT, a manual-action verb. Such actions of the signer activate a |Real Time| surrogate blend in which the signer and the surrounding space are understood to be the |office worker| and |office|, respectively. In this blend, the signer is depicting how the |office worker| is waving at the |job applicant|.



6b) *leaning forward*..... WAVE-AT

Soon after the depiction of the waving, the signer re-establishes eye contact with the addressee, thereby suspending |Real Time| in this blend. The signs in (6c) are understood to be produced not by the |office worker| but by the signer himself who is communicating directly to the addressee. CALL is directed towards the left, where the |job applicant| is understood to be located. The following sign MAN identifies who is being summoned.



6c) CALL MAN

The suspension of |Real Time| in (6c) does not mean that the surrogate blend creating the |office| is deactivated as well. For the signer to be able to direct CALL towards the |job applicant|, the surrogate blend needs to remain activated. We saw a similar thing previously in Chapter 1 in a discussion of the use of the verb GIVE within a surrogate blend. The signer's remaining in the leaning position previously held by the |office worker| can be seen to be part of the signer's attempt to maintain the surrogate blend, anticipating the reactivation of |Real Time|. As seen in (6d), the signer's eyes return towards the left and WAVE-AT is directed at the left again. This is a continuation of the |Real Time| depiction of the |office worker's| waving towards the |job applicant|.



6d) WAVE-AT

The above shows that when CALL is produced, any |Real Time| that has been activated needs to be suspended. This is also generally true for CALL-1 except when it is produced as part of the expectation-fulfillment expression. As the following shows, the use of CALL-1 during |Real Time| is possible in part because of the existence of a mental space in the fulfillment phase which represents the surrogate's recognition of the anticipated event. The *ah* NMS signals this mental space, and it is used in association

with the signer as surrogate only when this surrogate is expecting or hoping that an event would occur.

In (1), the |past self| is understood to be waiting and expecting to be summoned. In the fulfillment phase, CALL-1 is produced, which calls up a frame comprising the roles of *summoner* and *summoned*. As part of this verb's phonological specification, the fingertips of the bent B hand are directed towards the signer. This directionality instructs that the surrogate has the role of *summoned*. The back of the B hand is directed towards where the *summoner* is conceptualized to be. This tells the addressee that the |office worker|, who is the *summoner*, is located a distance from the |past self's| right. The approximate distance between the two surrogates is in part supplied by the eye gaze of the |past self|. Despite the invisibility of the |office worker|, the addressee infers that this surrogate is doing something to get the |past self's| attention.

The *ah* NMS indicates that the event of being summoned is precisely what the |past self| is expecting. Had a different event occurred, such as lights being turned off, or even if nothing occurs, the *ah* NMS cannot be produced because these are the events that are not expected. The *ah* NMS can then be seen to be associated with a cognitive state of the |surrogate|, which is a mental space separate from the surrogate blend. As this cognitive state exists in |Real Time|, the non-depicting verb CALL-1 can be produced during |Real Time| as it is associated with this cognitive state.

This is in a way similar to how the signer shares the surrogate's thoughts as in (7). Here the signer intends to portray the surrogate's inner thoughts about being called in for the interview ahead of other job applicants in the same room.¹ The |past self| looks

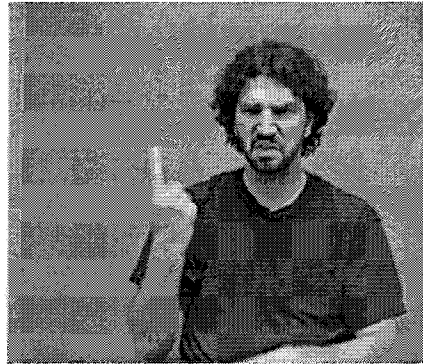
¹ In this alternative narrative, the expectation-fulfillment cannot be used, as the |past self| has expected other |applicants| to precede him.

around and exclaims to himself, “I am the first to be called? Why?” Through a combination of nuanced facial expression and body posture as well as the lack of conversational conventions being observed, signers know that the [past self] is not represented as performing linguistic signs, but only as having certain interior cognitive states.

7)



PRO-1



FIRST



CALL-1



WHY

1.4 The construal of effort & the action chain in the expectation-fulfillment construction

There is more to the semantics of the expectation-fulfillment construction than merely the surrogate's expectation of an event's occurrence. Langacker's (1991a)

concept of *action chain* is useful to demonstrate the additional semantics involved. The action chain “traces the propagation of force from one participant to the next in a series of energetic interactions” (Langacker 1991b:291). In CALL and CALL-1, the *summoner* is understood to be the energy source of the interaction while the *summoned* is understood to be the energy sink. Because in (1) the event is described from the viewpoint of the |past self|, it is the tail end of the energy flow associated with the event of summoning that is being depicted. In (6), it is the head end that is being depicted.

As pointed out in 1.5, the *ah* NMS cannot co-occur with CALL in (6). That CALL is not associated with depicting time is only part of the reason. As the |Real-Time| surrogate blend in (8) illustrates, a simple expectation does not warrant the use of the expectation-fulfillment construction. (8) depicts a surrogate getting someone’s attention or starting a conversation and making a comment. Part of the semantics of WAVE-AT is the goal of catching someone’s attention. That the surrogate in (8) succeeds in achieving this goal is inferred by the sign MAKE-COMMENT. Part of the semantics of this verb is the attention the *addressee* gives to the *signer*. It is not possible to use this verb if the surrogate did not succeed in getting the attention of an |addressee|.



8) WAVE-AT

MAKE-COMMENT

Because verbs like WAVE-AT have a particular, intended outcome, the head of the action chain associated with such verbs, i.e. the trajector, has an expectation of such an outcome. However, this does not warrant the use of the expectation-fulfillment construction. As (9) illustrates, what is needed is some deferment, for whatever reason, of the expected outcome and the extra effort made in obtaining this outcome. The effort is signaled by the facial expression co-occurring with WAVE-AT in (9), which seems similar to the adverbial NMS that I call the effortful NMS. The following sign is TURN-LINES-OF-SIGHT-TOWARD-1, which represents part of the result hoped for by the visible surrogate in (9), which is getting the |other's| attention. Here it is necessary to produce the *ah* NMS. This is further evidence for the existence of the expectation-fulfillment construction.



9) WAVE-AT.effortful.....TURN-EYES-TOWARD-1.*ah*

The pairs of expressions in (10) and (11) are other examples that demonstrate how the *ah* NMS is needed when the desired outcome of the event being described requires effort. The expressions in (10) can be used to depict the surrogate exiting a crowded room or a densely wooded area. In (10a), the signer produces an adverbial NMS, involving puckered lips and glossed as “mm,” that indicate that the event occurs in

ordinary or effortless fashion. The *mm* NMS is also produced in (11a), which depicts the surrogate's walking towards and arriving at a location. It is not possible to produce the *ah* NMS with the final verb in (10a) or (11a). In (10b) and (11b), instead of the *mm* NMS, the effortful NMS is used instead. This is followed by the *ah* NMS produced with the final verb.



10a) THROUGH.*mm*.....OUT



10b) THROUGH.effort OUT.*ah*.....



11a) WALK.*mm*PATH.*mm*..... ARRIVE



11b) WALK.*effortful*.....PATH.*effortful*..... ARRIVE.*ah*

The expectation-fulfillment expressions in (9), (10b), and (11b) are instances where the surrogate is the head of the action chain who is expending the effort necessary in the situation described in order to achieve the desired outcome. How do these expressions differ from (1)? In (1), the surrogate is not understood to be expending physical effort. It is not possible to produce the effortful NMS with WAIT.*protracted*. However, the verb WAIT itself has as part of its semantics a schematic, expected outcome. In this way WAIT can be seen to be associated with a type of action chain, one

in which the head anticipates an event in which he occupies the tail end of that event's action chain.²

Still, the event within the expectation phase need not be directly associated with the event occurring in the fulfillment phase. In (12), the surrogate is depicted as chatting until he notes that the |doorbell light signal| is flashing. Among the outcomes that might be associated with CHAT, the event of lights flashing is not a conventional outcome. Yet these two events may be sequenced in the expectation-fulfillment phase. (12) demonstrates that the NMS sequence ending in the *ah* NMS is sufficient to indicate that the event in the fulfillment phase has been expected by the surrogate during the expectation phase, and likely earlier.



12) CHAT.protracted..... DOORBELL-LIGHT-FLASHING.*ah*

Finally, (13) is another example of the expectation-construction in which the final sign, EXCUSE, in its citation form does not appear to have depicting properties. This could be used in a description of a meeting between a student and a principal in which the student is attempting to avoid receiving punishment.

² CALL-1 appears to be what Janzen et al analyze as a passive construction. One of their criteria for such an analysis is similar to the tail-ended construal of the action chain associated with this event.



13) ARGUE-WITH.protracted.....EXCUSE.ah

Throughout (13), the signer is understood to be the |student|. In the expectation phase, the verb ARGUE-WITH.protracted is placed between the |student| and where the |principal| is conceptualized to be. ARGUE-WITH could be used as a reciprocal verb, as in TWO-OF-THEM ARGUE-WITH “They had a discussion.” In (13), however, the interaction is described from the viewpoint of the |student|, and it is not clear from this expression alone whether the energetic exchange between the two participants is equal. However, (13) could be used to describe how the |student| is trying to convince a reluctant |principal| to not punish him. In this case the |student| is clearly the head of the action chain and is expending the energy in this interaction. But in any case, since the |student| is hoping for a particular outcome, this also has the |student| at the head of the action chain.

The outcome of the interaction desired by the |student| is being let go without punishment. In the fulfillment phase, the *ah* NMS and EXCUSE are co-produced, and this is precisely the outcome desired by the |student|. The scenario described in (13) is similar to (1) in that the surrogate in the expectation phase is the head of the 1st action

chain but is the tail in the other action chain in the fulfillment phase. The difference between (13) and (1) is whether the surrogate is actively expending energy towards the head of the action chain in the fulfillment phase.

It is clear that when a participant in a scenario expects or desires the occurrence of an event, the expectation-fulfillment construction can be used. This is why if the scenario in (13) is depicted from the viewpoint of the |principal|, the construction cannot be used. While the |principal| may be conflicted in whether to punish the |student|, it is nonsensical if the |principal| “desires” a particular outcome if |she| has absolute power in determining the outcome.

The *ah* NMS used in (13) signals the existence of a mental space that is associated with the |student’s| recognition of the desired outcome. As mentioned above, this recognition is understood to occur in |Real Time|, so it is integratable into the |Real-Time| surrogate blend, despite EXCUSE not being a depicting verb. The *ah* NMS could also depict the |student’s| facial expression in response to the success of his efforts, but this may not actually depict the |student’s| physical facial expression. For instance, the |student| knows that |he| needs to remain tactful throughout the interaction with the |principal| as |he| realizes that any little thing might sway the |principal| towards an undesirable outcome. Here it is clear that both the effortful NMS and the *ah* NMS are metonymically associated with psychological states.

1.5 Variation in eye gaze direction

There is another difference between (1) and (13) that is worth pointing out. In (1), the eye gaze remains directed away from the addressee and is understood to be the surrogate’s eye gaze. In (13), the eye gaze returns to the addressee when EXCUSE is

produced. As discussed previously, the re-establishment of eye contact with the addressee is an indicator that |Real Time| has been suspended. This variation in eye gaze direction deserves a closer examination, but here it will suffice to discuss whether it is still appropriate to consider the expectation-fulfillment construction as activating a |Real-Time| surrogate blend.

From (13) one can see that the re-establishment of eye contact and the fulfillment phase coincides. The event in the fulfillment phase could be regarded as the outcome of prior events occurring during the expectation phase, or even the outcome of the expectation itself. Such an outcome can be regarded to be a type of endpoint where the prior event and/or expectation ceases. The deactivation of |Real Time| at this moment is then complementary and appropriate. The expectation-fulfillment construction can still be seen to activate a |Real-Time| surrogate blend regardless of whether eye contact with the addressee is re-established at the end of this construction.

2.0 Integration of the construction and event space components

In this section, I describe the blending process that creates expectation-fulfillment expressions. The process is similar to that underlying the aspectual forms of verbs described in Chapter 2. First, I introduce a representation of the construction. I then describe its integration with components of the Event Space input, starting with the expression in (1). The analyses of other expressions that follow demonstrate that constructional compositionality vary in interesting ways.

2.1 Representation of the expectation-fulfillment construction

The conceptual structure of the expectation-fulfillment construction is diagrammed in Figure 2. This is instantiated by all expectation-fulfillment expressions described in this chapter. The top box above the arrow in the conceptual structure representation represents the expectation phase of the construction. The *|viewpointed conceptualizer|* is the entity within the scenario from whose perspective the complex event is being construed. There may be other *|conceptualizers|* but none of their viewpoints are blended with the signer's. This *|viewpointed conceptualizer|* is a schematic component that will be made more specific when it is mapped with a participant within the Event Space.

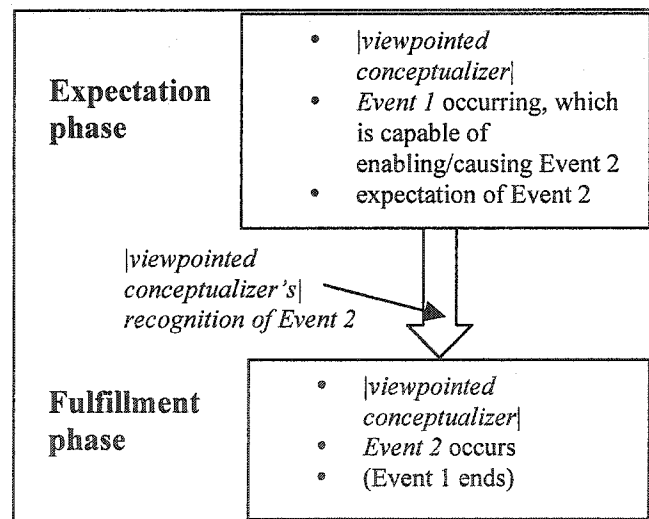


Figure 2: Diagram of the expectation-fulfillment construction

Also within the expectation phase is *Event 1*. This can be of two types. It can be the event that directly causes *Event 2* (which could be a change of state). It also can be the event that enables *Event 2* to occur, simply because the *|viewpointed conceptualizer|*

is existing in the location where he can be involved as a directly affected participant or as a spectator having an expectation of *Event 2*, which is the third component of this phase.

The bottom box represents the fulfillment phase, which contains the same *|viewpointed conceptualizer|* from the expectation phase. It is here when *Event 2* occurs. If *Event 1* directly causes *Event 2*, the former event typically ends. While the waiting activity does not directly cause the *|job applicant|* to be summoned, it can be seen to enable the summoning activity. When the *|job applicant|* is summoned, he would not be likely to continue to wait. A *|dinner guest|* who came to dinner early may be knitting when, as expected, the *|doorbell|* is rung by other *|guests|*. This does not necessarily put an end to his knitting, especially if answering the *|doorbell|* remains the responsibility of the *|host|*.

The arrow moving from the top box to the bottom box represents the punctual occurrence of *Event 2*, which also includes the *|viewpointed conceptualizer's|* recognition of that event. This arrow is also intended to represent the close succession of the two events, i.e. there is no temporal break between the two phases. This tight connection between the two events is iconically represented by the activation of *|Real Time|* up to and including the point where *Event 2* is recognized, if not beyond.³

A fuller description of this construction would include a phonological pole as well as the aspectual construction. The aspectual construction will be needed in order to produce aspectual forms of verbs that occur in the expectation phase. The phonological pole would include the *ah* NMS as well as other schematic components which would be

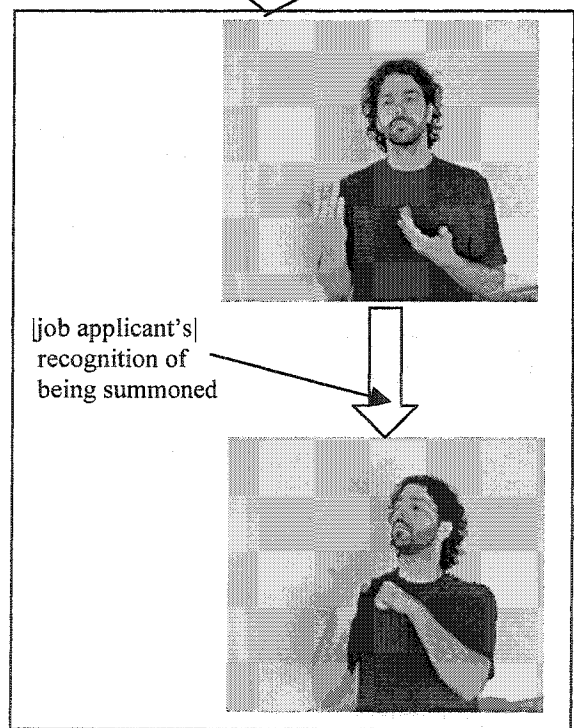
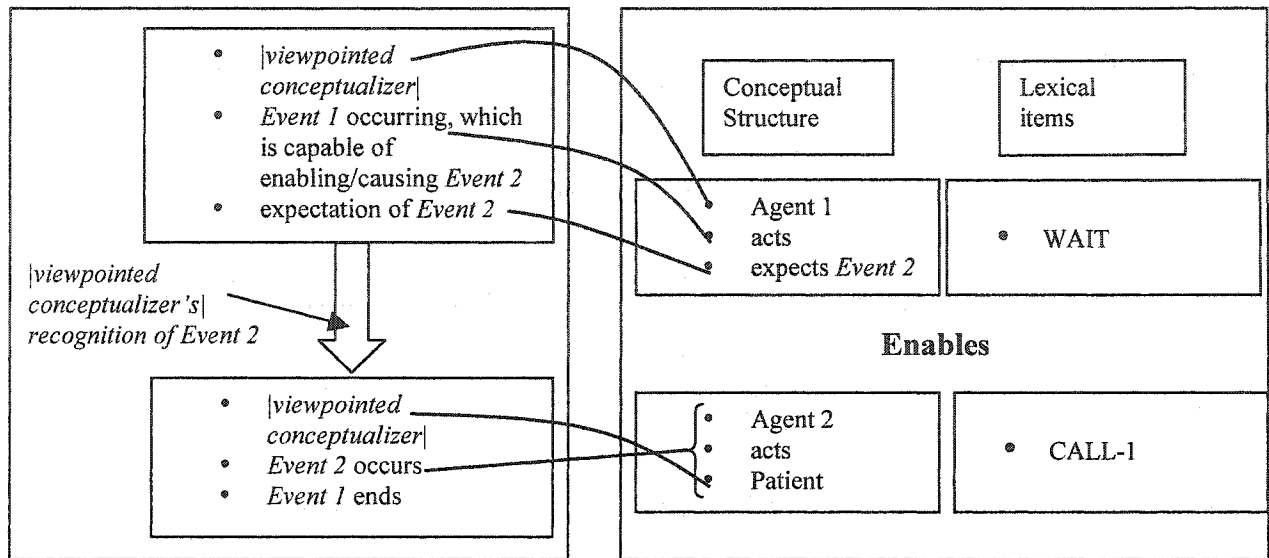
³ Sometimes the re-establishment of eye gaze contact with the addressee, which suspends *|Real Time|*, may be only momentary. If the expectation-fulfillment expression is part of an ongoing narrative, signers may immediately re-activate *|Real Time|* in order to continue the narrative.

elaborated by the phonological poles of the lexical items representing the conceptualized event that the signer describes.

2.2 The integration of the construction and Event Space components

In Figure 3, the expectation-fulfillment construction representation in the leftmost box is one of the inputs involved in the creation of expressions like (1). The rightmost box represents the Event Space input, which is the conceptualization the signer has of the complex event to be described.

The Event Space input has two lexical items representing the events of the scenario being described. WAIT is the lexical item used to represent the first event. Its conceptual structure includes an agent who is performing an activity in expectation of Event 2. This event is schematic, as the frame of WAITING does not have a specific outcome (one can wait for just about anything to occur). This is unlike WAVE-AT, which expected outcome is the getting of someone's attention. The second event is represented by CALL-1, which involves two participants, an agent acting on a patient. As the first event enables the second, "Enables" is labeled between the two boxes.



Expectation phase

- |job applicant|
- |office|
- waiting, enabling himself to be summoned
- expectation of being summoned

Fulfillment phase

- |job applicant|
- |office|
- |office worker| summons |job applicant|
- waiting ends

Figure 3: Diagram of integration producing (1)

There are several counterpart mappings between the two inputs. In the narrative that (1) is part of, Agent 1 is the *job applicant*, which is the more specific counterpart that elaborates the |*viewpointed conceptualizer*| in the construction.⁴ As the latter counterpart is already schematically represented by the signer, projecting the two counterparts together into the blend results in a more specific entity, the |*job applicant*| that is represented by the signer. For diagrammatic convenience, I do not connect the counterparts to this blended entity in the diagram. There is also a counterpart mapping that allows the signer's environment to be understood as the |*office*|.

WAIT also elaborates the more schematic *Event 1*. As the construction contains the aspectual construction, integrating this sign with the construction results in WAIT.protracted. This integration of the verb allows it to be produced during |*Real Time*|. This is not possible with the citation form WAIT, which, outside of constructed dialogue, would suspend any activation of |*Real Time*|. Finally, the expectation of Event 2 associated with WAIT elaborates the counterpart in the expectation phase of the construction.

There are also counterpart connections between the fulfillment phase of the construction and components of CALL-1. The patient argument of CALL-1 is mapped onto the |*viewpoint conceptualizer*|, which is the |*job applicant*|. The summoning event elaborates *Event 2*, and also ends *Event 1*. Not represented in the diagram is the counterpart mapping between Agent 2 and a participant in the fulfillment phase. As Agent 2 is understood to be the *office worker*, this results in the surrogate |*office worker*|, which is who the |*job applicant*| sees.

⁴ The viewpoint of a schematic signer and a general, participant viewpoint is already blended in the construction to produce |*viewpointed conceptualizer*|. Because of this schematicity, any ASL signer can use this construction to produce or interpret expectation-fulfillment expressions.

The *ah* NMS is contributed to the blend by the construction. As discussed above, this NMS is not necessarily understood to depict the physical actions made by the |viewpointed conceptualizer|, the |job applicant| in (1). However, it is definitely understood to indicate the psychological response of this entity to *Event 2*.

By now it should be clear that this description of the two events has a more complex relationship than one of simple sequentiality. The protracted event of waiting is *completed* by CALL-1, the expectation having been fulfilled. In some expectation-fulfillment expressions, a suspension of |Real Time| would coincide with this completion. However, in (1) it is not suspended.

Finally, the expectation-fulfillment construction specifies that not only does |Real Time| is continuously activated, but that there be a single |viewpointed conceptualizer| continuously existing through both events. This means it is not possible for the signer to shift and represent another participant. For example, in (1), the signer must represent the |job applicant| throughout, and not shift to the |office worker|. The use of the patient-focused CALL-1 allows the continued existence of the |job applicant|.

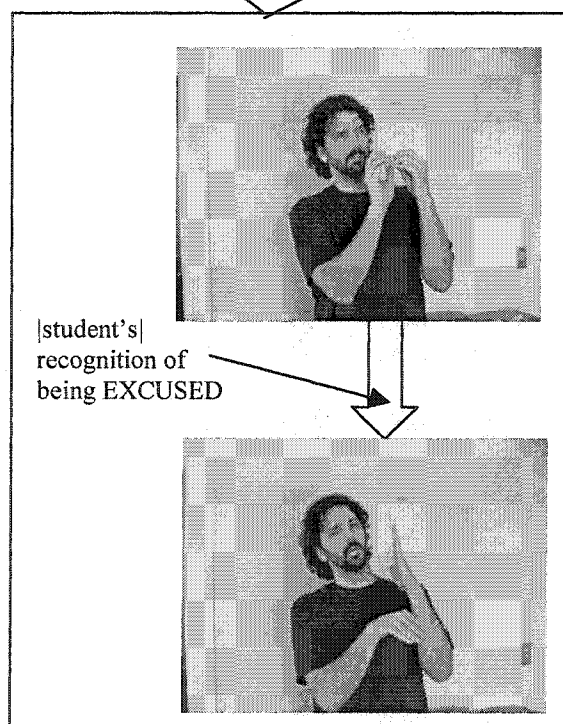
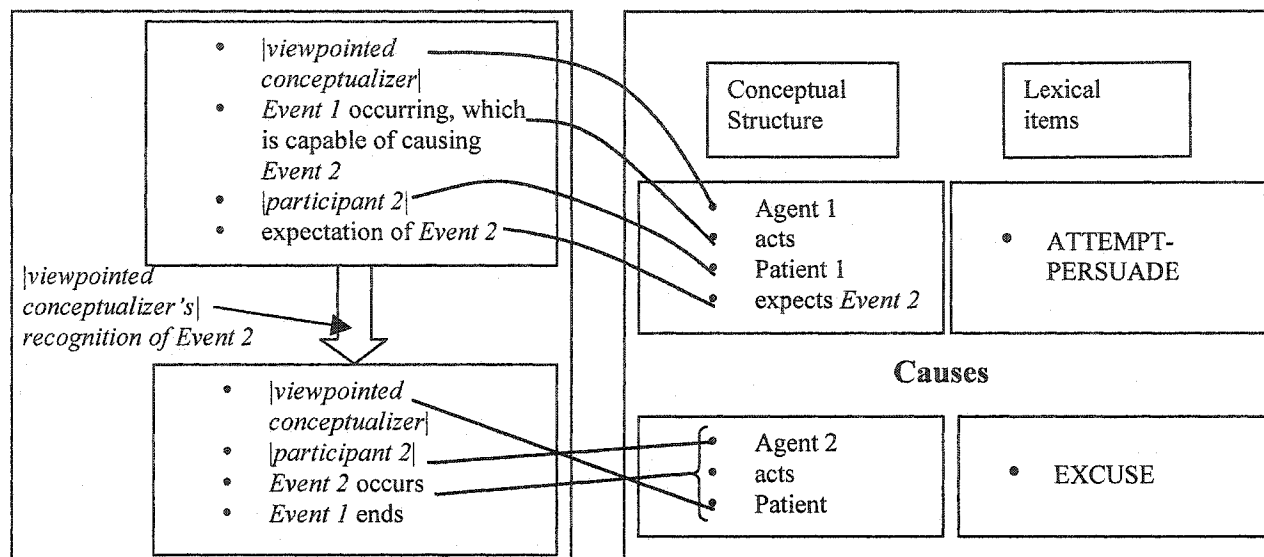
Figure 4 is a diagram of the blending creating (13). Here, instead of an enablement relationship between the two events as in (1), the relationship is one of causation. Two action chains are involved in (13). One is in the expectation phase, where the |viewpointed conceptualizer|, here the |student|, is exerting energy onto a patient, here the |principal|. In this phase, the |student| is the head of the action chain. The other action chain occurs during the fulfillment phase, in which the |principal| is understood to exert energy (the energy in both action chains are metaphorical); therefore,

the |student| is at the tail end of the action chain. The |principal| changes the state of the |student| who is now free from punishment.

ATTEMPT-PERSUADE is the lexical item representing the first event of the scenario. Agent 1 and Patient 1 are understood to be the *student* and the *principal*, respectively. These components are projected into the blend with their counterparts, producing the |student| and the |principal|, who are understood to be interacting inside the |principal's office|. The |student| acts in hopes of causing *Event 2* to occur, which is being let go without punishment for some alleged infraction. Typically, an *effortful* NMS is also produced during this expectation phase. It appears that if the |viewpointed conceptualizer| is exerting either a physical or metaphorical force, the *effortful* NMS needs to be produced. This NMS, like the *ah* NMS, is not necessarily understood to depict the expression of the |student|. It is not quite appropriate to wear that expression while negotiating with authority figures. Instead, this NMS is better construed as indicating the psychological state of the |student|, who is working diligently to avoid punishment. In a different scenario where the *student* knows he will get off easily and has no respect for the *principal*, the signer could depict the |student's| demeanor by wearing an appropriate "better than you" expression. In this case, the *ah* NMS would not be used, probably because the |student| knows that the outcome of the situation is guaranteed to be in his favor.

The mappings involving the fulfillment phase diagrammed in Figure 4 is straightforward. When the signer uses the expectation-fulfillment construction to produce (13), he maintains the |student| blend and depict the rest of the scenario from this entity's perspective. The signer has an alternative to the construction for the description

of the second event. The signer could deactivate the blend in which the visible [student] exists and create one in which the [principal] is visible through the blending of the signer's viewpoint with that of the *principal's*. It is also possible to describe the whole scenario entirely from the perspective of the *principal* using signs that are related to the two manual signs used in (13). However, the *ah* NMS cannot be produced in either case. This is because the *principal* does not expect or necessarily desire any particular outcome. This is true whether the *principal* eventually lets the student go willingly or under duress.



Expectation phase

- |student|
- |principal's office|
- |principal|
- |student| persuading |principal|, attempting to be EXCUSED
- expectation of being EXCUSED

Fulfillment phase

- |student|
- |principal's office|
- |principal|
- |principal| lets go |student| without punishment
- persuading ends

Figure 4: Diagram of integration producing (13)

(1) and (13) have two separate lexical items integrating with the construction, and both expressions also profile the central activity phase, extending it. (2) is different in both respects. It uses a single lexical item and the pre-inceptive temporal point is profiled. (2) is a good example of how a verb's iconicity makes it unnecessary to involve a second lexical item. The iconicity of TWIST-OPEN-CONTAINER is motivated by the experience of holding a container and twisting the covering (e.g. lid) at one end. As described in Chapter 2, when a verb such as OPEN-BOTTLE or TWIST-OPEN-CONTAINER are combined with a goal-completive aspectual construction, a blend is created in which the signer's hands are understood to be a surrogate's |hands| performing the event in |Real Time| from inception to completion and the aftermath. These verbs are also used to describe the difficulty in opening containers. The expectation-fulfillment construction can be used to describe a scenario in which the *opener* eventually succeeds in opening the *container* despite initial resistance. The citation form integrating with the construction results in the pre-inceptive aspectual form of the verb. Since the |viewpointed conceptualizer| is exerting force on an object that is resistant to change, the effortful NMS is produced.

Naturally, the outcome expected by the |opener| is the opening of the |jar|. However, it is conventional to use the semantic and phonological components of TWIST-OPEN-CONTAINER rather than those of a second lexical item such as OPEN. The movement of the citation form sign is iconic for the "real world" movement of the |hand on container covering|, and this movement infers the movement of the |jar lid| as well. However, this movement is probably not understood to occur in |Real Time|. But when this movement is integrated with the second phase of the expectation-fulfillment

construction, the result is a depiction of the opening of the [jar lid] that occurs in the [Real Time] that is continuously activated.

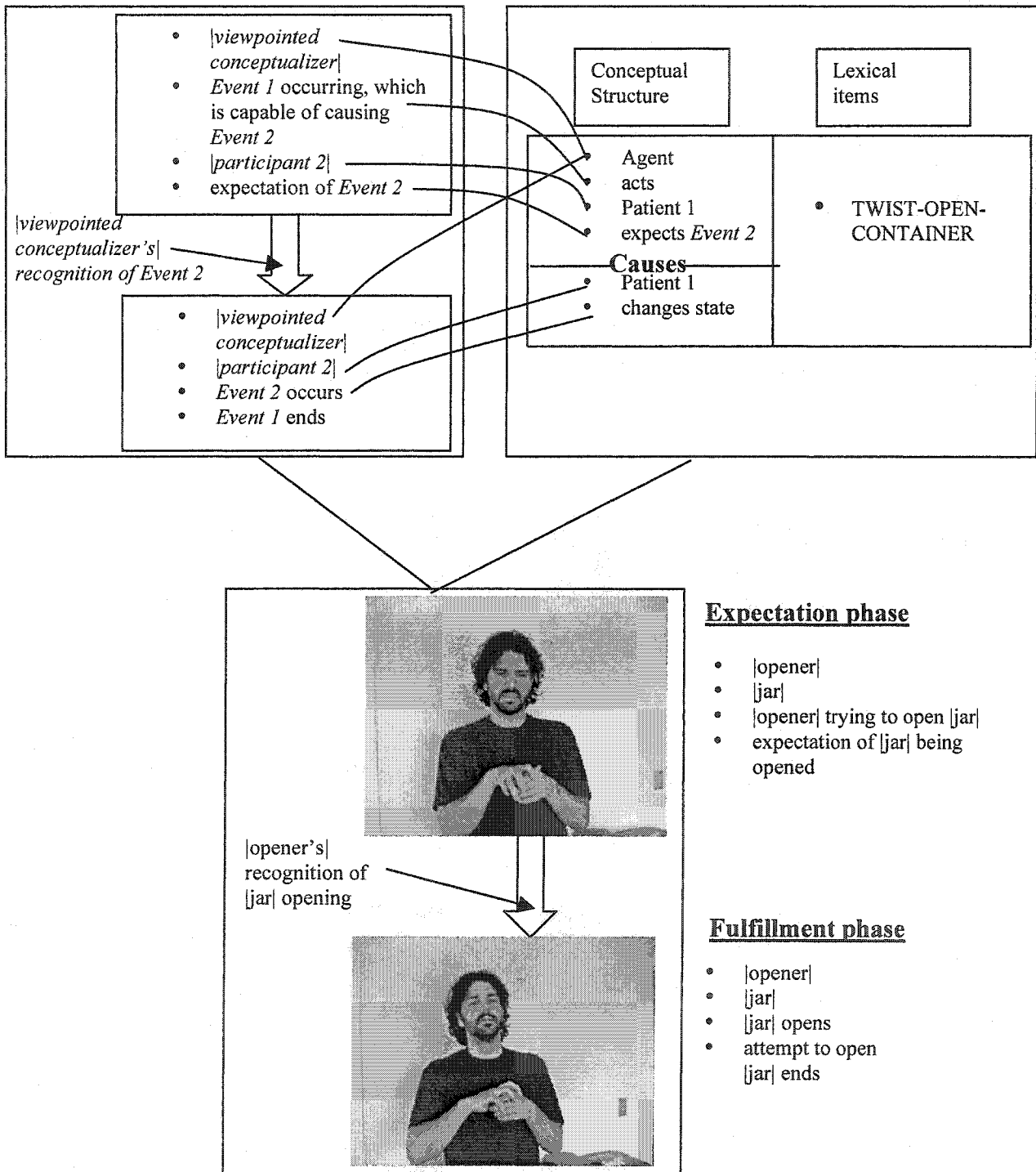
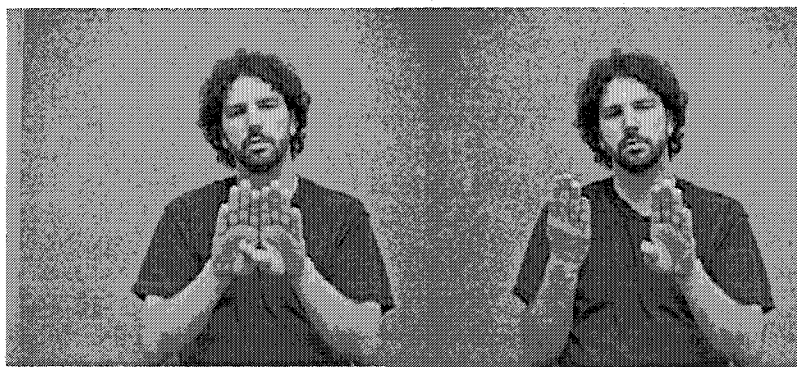


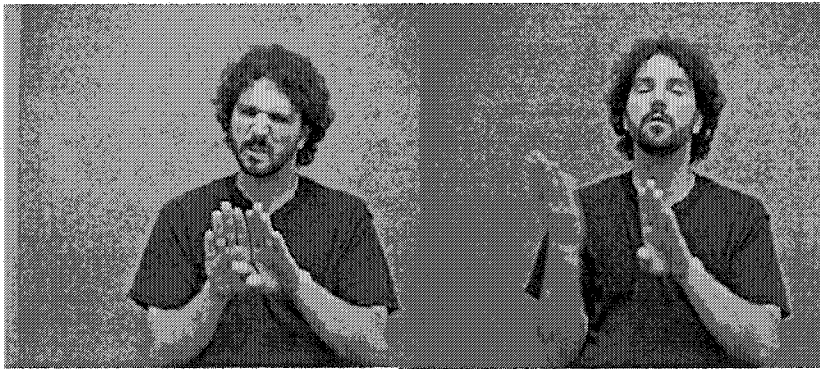
Figure 5: Diagram of integration producing (2)

A single verb selected for the event input need not have (direct) iconic associations with manual actions in order to supply the necessary components. Verbs whose handshapes represent a “whole entity” can serve such a capacity. OPEN-DOOR in (14) is one such verb. It is a two-handed sign in which one handshape is associated with a |door|, moving via the rotation of the forearm and a slight backward motion of the elbow to effect a correspondence with the |door’s| opening. Like TWIST-OPEN-CONTAINER this verb does not activate |Real Time|.



14) OPEN-DOOR

To depict an event in which someone struggles in an attempt to open a door but eventually succeeds, OPEN-DOOR could be selected as the sole verb to represent both events in the input space. Integrating this verb with the expectation-fulfillment construction results in (15). This is similar in many ways to the integration creating (2), with the exception of the partitioning of the manual articulators in (15).



15) OPEN-DOOR.pre-inceptive.protracted.....OPEN-DOOR.ah

Finally, the expression in (3) shows other possibilities regarding the selection of verbs in the Event Space input. First, the signer's hand need not represent mappings involving the physical articulator and a counterpart in some physical domain, as exhibited in TWIST-OPEN-CONTAINER and OPEN-DOOR. Metaphorical mappings involving the C handshape placed at the forehead allows for the representation of the extent of knowledge one has. Second, it is possible that the input verb in (3) even when produced in isolation activates |Real Time|. If this is the case, it demonstrates the range of verb types that may be selected for this input.

3.0 Other issues

This section briefly touches on other issues relating to the expectation-fulfillment construction. First, we look at an example of an expectation-fulfillment expression in which the |viewpointed conceptualizer| is situated away from the flow of action chain between the two events. Then the question of whether additional lexical items could be included in the expression is raised, followed by general observations regarding alternate constructions.

3.1 |Viewpointed conceptualizer| positioned away from the profiled action chain

In the expectation-fulfillment expressions above, we saw a variation of action chain construals. Only certain construals make it possible for the construction to be used, and such construals involve the |viewpointed conceptualizer| either at the head or tail end of an action chain. (16) demonstrates that this |conceptualizer| can be positioned away from the profiled action chain. This expression is used to describe someone inside a house watching a car being moved from the snow covered ditch in which it was stuck.



16) |viewer| *watching* |car| *finally getting unstuck from* |ditch|

Here the signer is understood to be the |viewer inside the house|, and the partitioned off manual articulators the |car| and the |ground|. The manual articulators are placed away from the signer, not front and center. The |viewer| is gazing in the direction towards where back of the 3 handshape and the fingertips of the B handshape are facing. These make it clear that this |viewer| is not in or next to the |car| that is stuck.

While the signer uses his 3 handshape to depict the |car's| movements, he also produces the effortful NMS. This NMS does not depict the facial expression of the |individuals| trying to extract the |car|; their |faces| are too far away for the |viewer| to see.

Neither does it depict the facial expression of the |viewer|, who is not exerting any physical or mental effort. Instead, the *effortful* NMS represents the identification the |viewer| has with the scene he is witnessing. This is an example of how the *effortful* NMS is used not to literally depict any |participant's| facial expression, but to depict an associated psychological state via metonymy. When the visible |car| moves away from the visible |ground|, this indicates the success of the effort. Another indication of this success is the *ah* NMS that is produced simultaneously. This backwards head nod is also associated with the psychological state of the |viewer| who recognizes the successful outcome.

3.2 Other evidence towards the existence of the expectation-fulfillment construction

Further evidence for the existence of the expectation-fulfillment construction comes from the inability of nominals to intervene between the two lexical items produced in associated with the two phases of the construction. (17a) and (17b) show that an overt argument cannot be produced within the construction.

17a) * PRO-1 ATTEMPT-PERSUADE PRINCIPAL EXCUSE.*ah*

I tried to convince the principal and he let me go without punishment.

17b) * PRO-1 WAIT.protracted WOMAN CALL.*ah*

I waited until a woman called me.

In (17a) PRINCIPAL is the patient argument of the first verb, but it is not possible to immediately follow this with EXCUSE.*ah*. Should the signer wish to produce an expectation-fulfillment expression, something similar to (18) could be signed.

18) PRO-1 ATTEMPT-PERSUADE PRINCIPAL

ATTEMPT-PERSUADE.protracted EXCUSE.ah

We see in (18) that the expectation-fulfillment expression follows a clause that has PRINCIPAL as an argument. During this clause, |Real Time| is not activated, and the production of ATTEMPT-PERSUADE is more or less close to the citation form. The obvious differences include not just eye gaze behavior but the length of production of the verb, which is longer in the protracted aspectual form.

WOMAN in (17b) is the subject argument of CALL-1. It is possible to produce WOMAN CALL-1 in isolation if the signer's eye gaze is directed at the addressee. However, it is not possible to produce the *ah* NMS with the verb in such an expression. Moreover, it is unlikely that WOMAN CALL-1 could follow WAIT.protracted. One possible reason is that this expression does not contain the components signaling some change to or shift away from the temporal profile associated with the protracted verb. The change already described is the appearance of an expected event, which often elaborates the completive point of the protracted verb. Since |Real Time| is activated during the production of the protracted verb, a |Real Time| endpoint needs to be supplied by the signer. The production of WOMAN does not activate |Real Time|, which is part of the reason why this sign cannot follow WAIT.protracted. Because the production of WOMAN suspends |Real Time|, its intervention prevents CALL-1.ah from supplying the endpoint: the production of the *ah* NMS needs to have |Real Time| and the activity depicted during its activation preceding it.

3.3 Alternative constructions: UNTIL and p UNTIL q

It is hoped that the preceding observations lead towards a more complete inventory of ASL resources for the description of temporal relations between events. Having such an inventory would allow the researcher greater ability to observe the signer's decision making process vis a vis grammatical resources in the description of events. Questions pertaining to such an investigation could include the types of motivation that compel or induce the signer in selecting one construction over another.

To briefly illustrate such an investigation, consider how the connector UNTIL, illustrated in (20), is not likely to be used in most, if not all, of the expectation-fulfillment expressions described in this chapter. An English speaker could say, "I kept arguing until he gave in and let me go without punishment." Here "until" serves as a connector between two events, and it is understood that the first event ends when the second occurs. (13) is a near ASL equivalent, but it is not possible to include UNTIL in that expression.



20) UNTIL

To the best of my knowledge, there has been no study of the p UNTIL q construction in ASL, and it is not even obvious that ASL has such a construction. Assuming that UNTIL can be used to connect two events, it would be interesting to learn the particular

circumstances that makes the signer choose the *p* UNTIL *q* construction over the expectation-fulfillment construction or the gradual change of state construction described in the next chapter. As UNTIL is a lexical item that does not activate |Real Time|, the investigation of its use in ordinary discourse should help us better understand some of the functions of |Real Time| in ASL.

4.0 Summary

This chapter examined the expectation-fulfillment construction, which is another construction where |Real Time| is one component. This construction blends with Event Space components to produce expressions that describe scenarios in which one event directly causes or enables the second. During the first event, the |*viewpointed conceptualizer*| must have an expectation of the second event. A major component of this construction is the *ah* NMS, which serves to mark the |*viewpointed conceptualizer's*| recognition of the second event as the expected event. Because this NMS describes the psychological state of this entity, the second event is seen as part of the |Real Time| activation that continuously exists during the expression. The fulfillment phase is understood to *complete* the expectation phase, so in cases where |Real Time| is deactivated the moment the *ah* NMS is produced, this deactivation should not be seen to separate the fulfillment phase from the expectation phase. Rather, this deactivation signals a natural endpoint within the scenario being described. The observations made in the last chapter and the present one, as well as the next, suggest that depiction is integral to ASL grammar.

Chapter 4: Depiction of Gradual Changes of State

0.0 Introduction

In Chapter 3, the ASL expectation-fulfillment construction was described; in this construction, |Real Time| and certain NMS are some of the components used in the depiction of the anticipation of and instantaneous occurrence of an event. Often the instantaneously occurring event coincides with the endpoint of the prior event; for example, a job applicant's waiting to be summoned ends when he is called into a room for his interview. If |Real Time| is seen to play an important part in descriptions involving the temporal relation between two events, we shouldn't be surprised if it is also involved in the description of different temporal relations. In this chapter, ASL constructions depicting gradual changes of state demonstrate that there are different ways to use |Real Time| to depict a gradual transition towards an endpoint. NMS are also important in these constructions, including particular head movements and facial expression changes. One such head NMS is related to the *ah* NMS described in Chapter 3, and two others are given iconic-metaphorical and metonymic analyses.

1.0 The slow forwards head nod in a gradual change-of-state construction

In this section, I examine ASL expressions that use a slow forwards head nod to indicate the transition towards an endpoint associated with the temporal profile of the protracted aspect. First, I briefly discuss other head NMS in ASL described by previous researchers. As the production of the slow forwards head nod does not suspend |Real Time|, I argue that it is obligatorily associated with a |Real-Time| surrogate blend and suggest that it is the result of iconic-metaphorical mappings as well.

1.1 General description

The NMS of interest in this section is one of various instances in ASL where the head is used as a linguistic item. In some cases, the head movement is a single component NMS, as in the one used to express negation (often glossed as “neg”). Here the head shakes from side to side. Liddell (1980) details a variety of head NMS in ASL, also describing one head nod (“hn”) sometimes required in clause-final position. In other cases, the head plays one part of the set of NMS produced to signal a clause type. For example, yes-no questions are marked by a set of NMS (glossed by “y-n”) including not only raised eyebrows but a quick, downward head nod as well. Liddell (1986) also describes a head thrust as one component in the set of NMS used to mark conditionals in ASL. The three different topic markings in ASL as described in Aarons (1994) each have different head positions or movements. Previously in this dissertation, I also described a backwards head nod occurring in the expectation-fulfillment construction that signals a [viewpointed conceptualizer’s] recognition of the appearance of an anticipated event.

The particular forwards head nod of interest here is produced slower than other head nods used in ASL. Its movement begins during the production of a protracted verb form and its end coincides with the production of FINISH or a sign indicating the resultant state of an event participant. This slow forwards head nod (glossed as “sfhn”) can be seen in (1), which is an expression that is part of an ASL narrative about a mishap that occurred while someone was doing the laundry. As seen in (1), the nod occurs towards the end of the production of WASH-CLOTHES, protracted and ends at FINISH.

1)



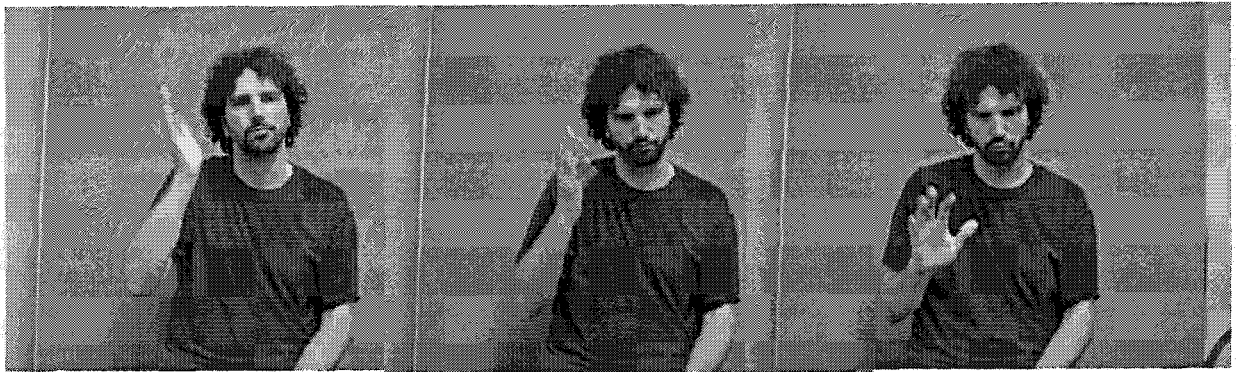
THROW-THERE



WASH-CLOTHES.protracted.....*sfn*..... FINISH

I threw in the clothes and started the washing machine. It proceeded to wash and soon it was done.

Two other examples of the use of such a head nod is shown in (2) – (3). In these expressions, the head nod also begins before the end of the expression and ends with the production of the second lexical item.



2) LECTURE.protracted.....*sfhn*.....FINISH

The lecture went on until it was done.



3) RUN.protracted.....*sfhn*.....WORN-OUT

I run until I become exhausted.

I will first describe (1) in detail, illustrating the [Real Time] surrogate blend involved and the contribution made by the manual signs and NMS to the expression as a whole.

From the production of the first verb in (1), THROW-THERE, it is clear that a [Real Time] surrogate blend has been activated. This blend is diagrammed in Figure 1. It has a surrogate [washing machine], created through the mapping of *washing machine* in

the Event Space input onto a portion of the Real Space input (for convenience, only cross-space mappings between the inputs are represented; lines representing projection into the blend are not shown).

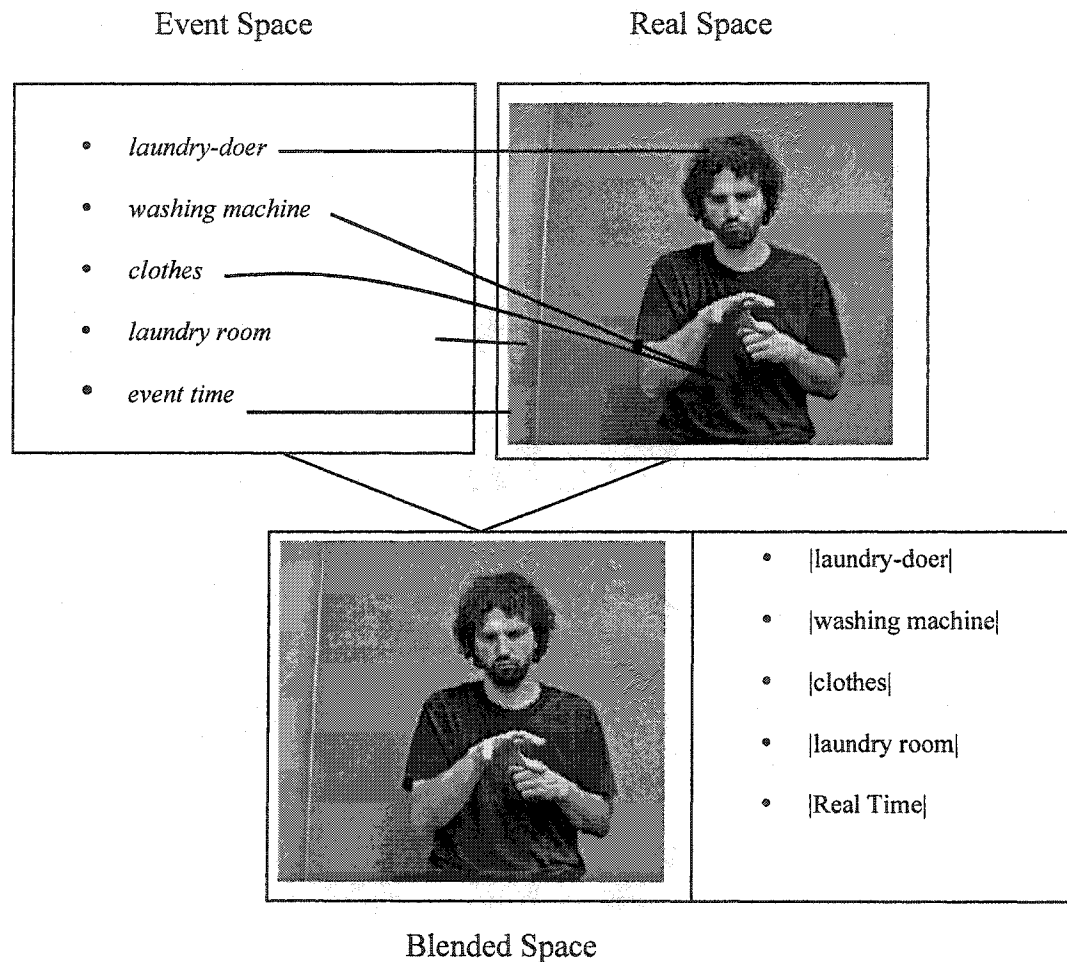


Figure 1: Blend diagram of THROW-THERE in (1)

The signer is understood to be the |laundry-doer| during this portion of the expression. The verb THROW-THERE depicts a manual action, so there is no partitioning of the manual articulator here: we are seeing the |laundry-doer| throw the |clothes| into the |machine|. Here it is also clear that |Real Time| is activated. The Event Time of putting

clothes into the washing machine is mapped with Real Time to produce |Real Time| in the surrogate blend.

Following THROW-THERE is a protracted aspectual form of WASH-CLOTHES.¹ It is possible that the actual laundry-doer in the real world event stayed near the washing machine or left soon after it began washing the clothes. It is doubtful that the signer intends to depict the |laundry-doer| remaining in front of the |washing machine| throughout its whole operation, even though no indication has been made as to what the |laundry-doer| did after starting the |washing machine|. However, it is possible to construe the signer during the production of WASH-CLOTHES.protracted as partially representing the |laundry-doer|. While the |laundry-doer| is not seen as literally and physically standing over the washing machine, nevertheless it is understood that this surrogate is keeping due attention on the progress of the laundry. Only from a close examination of the expression would the illusion of the |laundry-doer| never moving from the |washing machine| arise.

Thus during WASH-CLOTHES.protracted, the signer continues to be blended with the *laundry-doer*. Figure 2 diagrams WASH-CLOTHES.protracted used in (1). The leftmost box represents the protracted aspectual construction in ASL. It lists as components a |*viewpointed conceptualizer*| and |Real Time|. As the temporal profile representation in this box indicates, the central activity portion of an event is profiled. The rightmost box represents the citation form sign WASH-CLOTHES and the

¹ In (1), the signer bypasses describing the prototypical chain of events leading to the actual operation of the |washing machine|. For example, the |lid| needs to be closed, |money| inserted if needed, and the |water| needs to be filled before the |motor belt| puts the |washing machine| into the wash cycle. This leap from one temporal point in an event to a later point is common, even in spoken languages. This demonstrates that |Real Time| is not the result of a indiscriminate one to one mapping between Real Time and Event Time. No language, spoken or signed, has completely uncompressed second-by-second mapping of |Real Time| onto Event Time.

conceptual structure it is associated with. Integrating the aspectual construction and WASH-CLOTHES results in WASH-CLOTHES, in which the profiled event is probably less the washing of the clothes than the operation of the washing machine. The partitioned-off manual articulators and their oscillating side- to-side movement depict the [rotating inner tub] and its movements. The production of this aspectual form has [Real Time] so the [Real Time] first activated in THROW-THERE is understood to continue uninterrupted, even with the higher degree of temporal compression during WASH-CLOTHES.protracted.

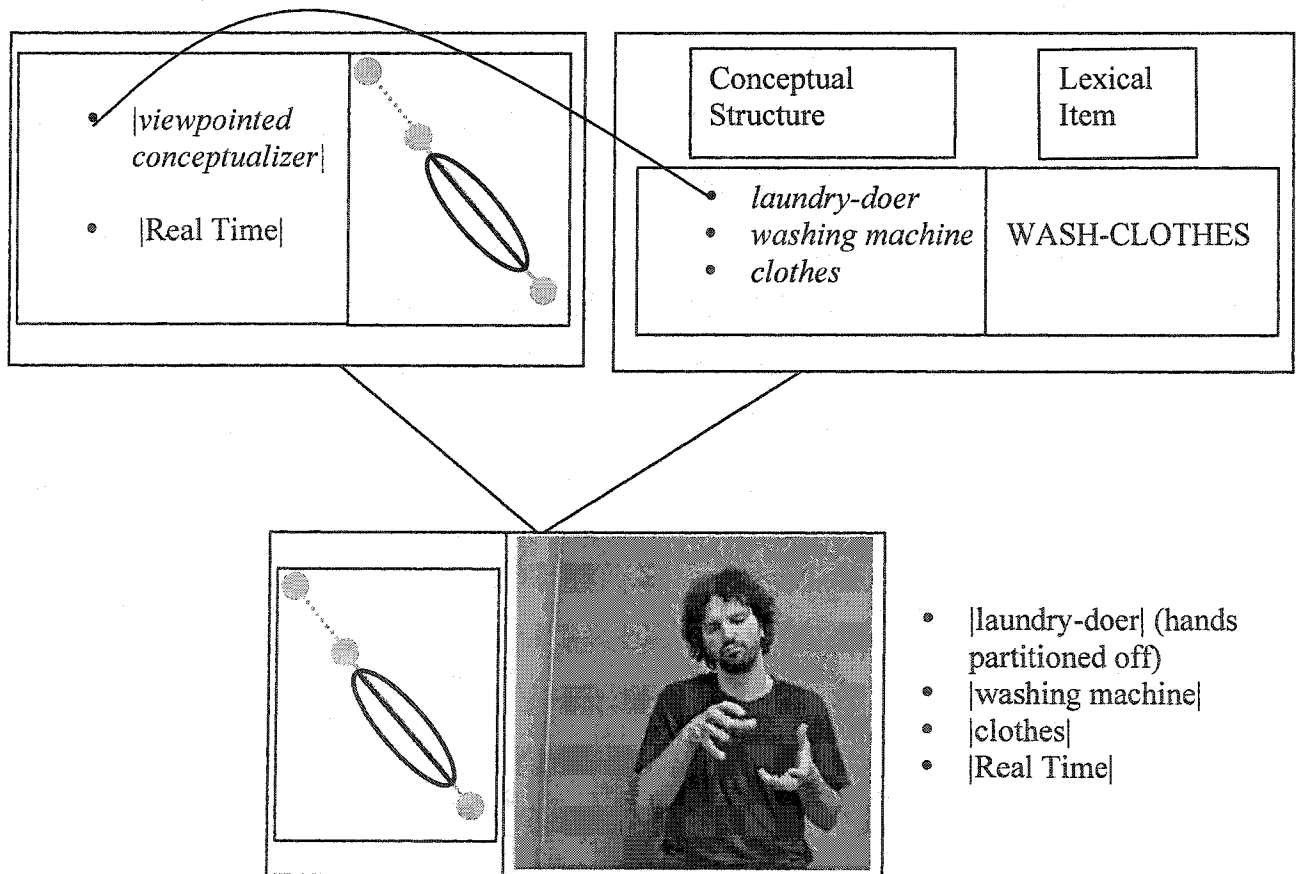


Figure 2: Blend diagram of WASH-CLOTHES.protracted in (1)

Near the end of WASH-CLOTHES.protracted, the signer produces a slow forwards head nod. Like the backwards head nod used in the expectation-fulfillment construction described in Chapter 3, the slow forwards head nod does not necessarily depict the literal, physical action made by the surrogate represented by the signer. This NMS, because it is produced during |Real Time| and does not suspend it, must have some property that makes this possible. In fact, it is not possible to produce this NMS outside of a |Real Time| surrogate blend. The iconic and metaphorical mappings that are argued below to underlie this NMS seems to play a large part in the relationship it has with depicting time.

The function of this slow forwards head nod, I propose, is used to indicate the gradual transition towards the endpoint associated with an event. In (1), this NMS marks the transition towards the end of the |washing machine| operation. Figure 3 illustrates the integrated temporal profile of WASH-CLOTHES.protracted FINISH. The rightmost box in Figure 3 is the temporal profile associated with the head nod in (1). The top, unprofiled portion represents the inception point and the duration of a schematic event. The darker, circled portion profiles the lead-up towards and including the complete point. The leftmost box is the temporal profile of WASH-CLOTHES.protracted. There are cross-space mappings between these two temporal profiles, and the two profiles integrate into a distinct temporal profile, represented by the top box in Figure 3. The result of this integration is similar to the temporal profile of the expectation-fulfillment construction. As described in the last chapter, the protractedness of the first event in that construction is often ended by the appearance of the second event. Here the duration and completion of the washing machine operation are the two events that are depicted.

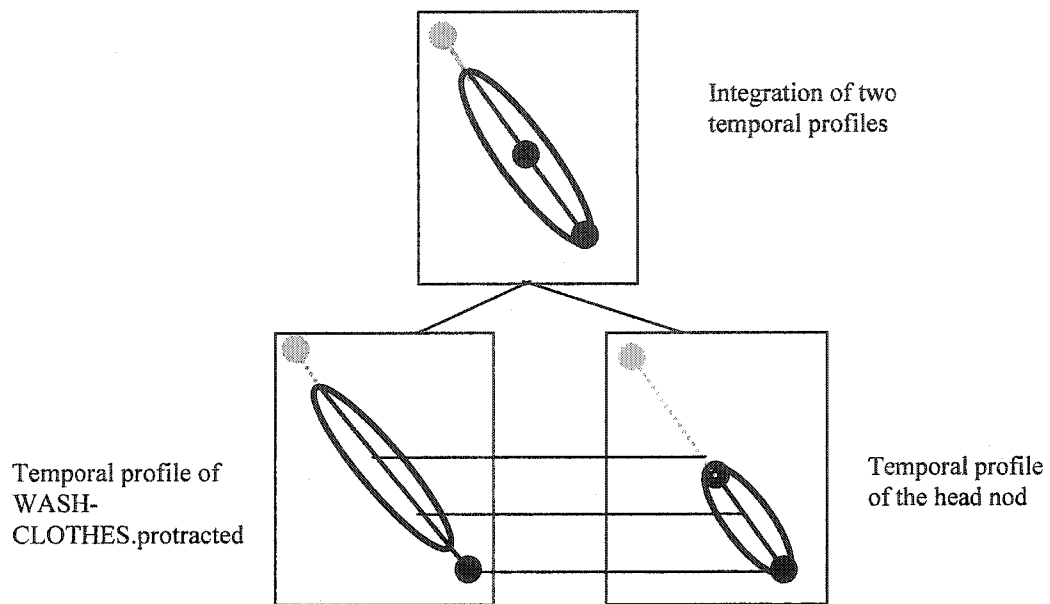


Figure 3: Temporal profile of WASH-CLOTHES.protracted...FINISH

To further illustrate the temporal profile of the head nod, it might be helpful to contrast the expression in (2) with another expression that uses similar items but is construed differently. (2) depicts someone in the progress of giving a talk that is eventually completed. The slow forward head nod NMS in (2) is identical to that in (1), produced prior to and ending with FINISH.

In contrast, the expression in (4) is used to describe a “beat the clock” scenario in which a lecturer, finding that she has little time remaining to complete her talk, attempts to complete it in full before time is up.



4) LECTURE.protracted.effortful.....FINISH

The NMS co-occurring with FINISH in (4) is comparable with the *ah* NMS, and so the expression appears to instantiate the expectation-fulfillment construction. The first verb is a protracted form of LECTURE, in which the signer is understood to be the |lecturer|. An effortful NMS accompanies this aspectual verb form. As discussed in Chapter 3, this NMS is often followed by the *ah* NMS. After producing the aspectual form of LECTURE, the signer simultaneously produces FINISH and the *ah* NMS with a mouthing approximating the English oral articulation of “finish.” This includes the quick backward head motion. Here the |speaker| is understood to have managed to conclude just in time. Here there is no profiling of the transition towards the end of the lecture.

(3) demonstrates that the manual lexical item that is produced at the completion of the head nod need not always be FINISH. Another example involves part of a discourse contrasting the experience of jogging in the morning versus that of jogging in the evening. The signer comments that when jogging after a long day, he quickly becomes exhausted. This could be expressed by an expression that is not only shorter than (3) but also has a different head movement. As seen in (5), the head tilts sideways.



5) RUN.....WORN-OUT

This appears to be another way to express gradual change, but it describes a scenario involving debilitation. This will be discussed in Section 2. (3), in contrast, is produced longer and has the slow head nod. When this is used in contrast to (5), it is understood to mean that the runner has run for a longer stretch of time before tiring out.

1.2 Diagram of the construction

Figure 4 diagrams the blending process underlying (3). The leftmost box represents the schematized conceptual structure of the construction instantiated by (1) – (3). Inside this box, the upper box represents the first event/state and the lower box the second event/state. The arrow moving from the upper box to the lower box represents the time it takes until the second event/state to materialize. Unlike the instantaneous appearance of the second event in the expectation-fulfillment construction, this involves a transition that is more gradual. Throughout this construction |Real Time| is activated while a surrogate entity undergoes a change of state.

The rightmost box of Figure 4 partially represents the conceived event. For the first event/state, RUN is selected. Part of the conceptual structure associated with this

verb is a *runner*. This is the counterpart to the surrogate in the schematic construction. Other components of the conceptual structure include a *state A* and a *resulting state B*. As RUN has a possible range of states during and at completion of the event, no one state is specified here. For the second event/state, WORN-OUT is selected, which has an *experiencer* and the state of *exhaustion* as part of its conceptual structure.

The bottom box represents the resulting integration of the two inputs. For diagrammatic convenience, I do not include projection lines in this diagram connecting the counterparts. In this blend, the signer is understood to be the |runner|. The facial expressions produced are understood to be that of the |runner's|. The manual articulators producing RUN.protracted and WORN-OUT are partitioned off but are understood to have associations with depicting time. RUN.protracted is also the result of the protracted aspect construction, which is part of the schematic construction. The head nod is also partitioned off from the surrogate, but is integrated into the construction.

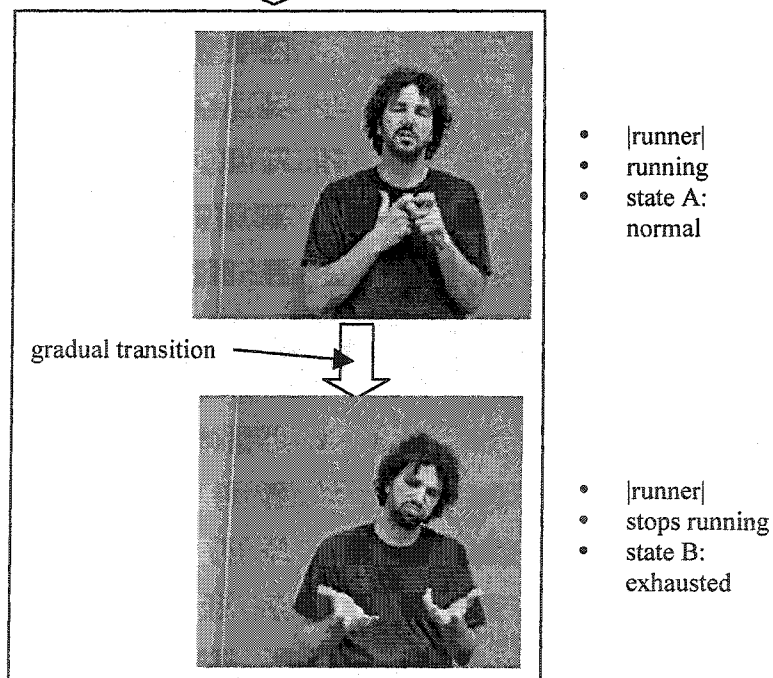
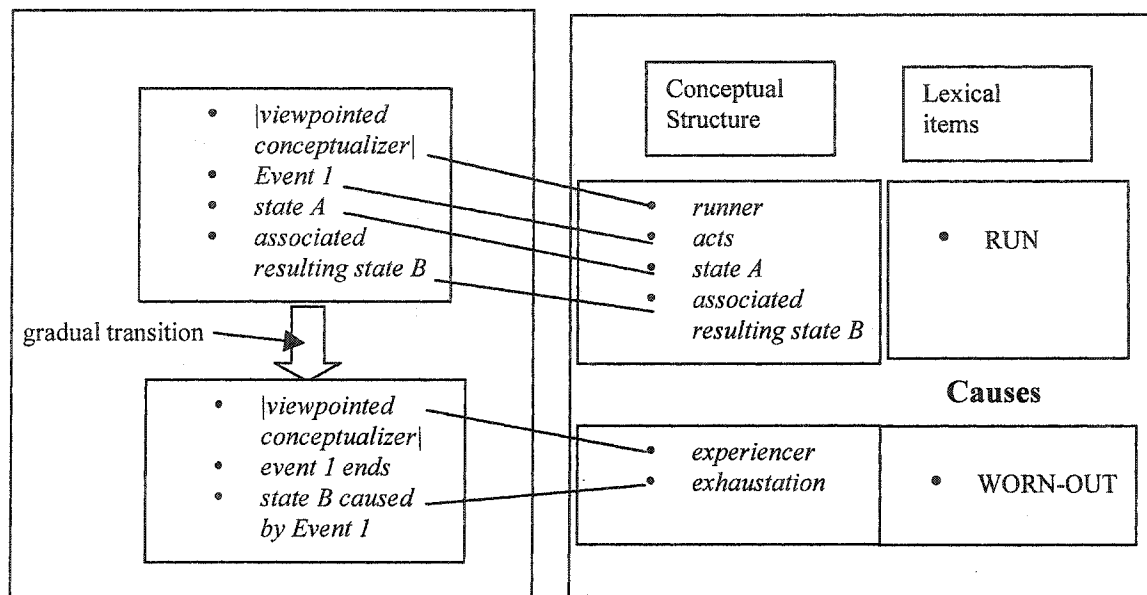


Figure 4: Blending diagram of (3)

Figure 5 diagrams the integration arising from the production of WASH-CLOTHES.protracted....*sfhn* ...FINISH. The integration is essentially the same as that which produces (3), involving a schematic construction input and an input having lexical items representing aspects of a conceptualized scene. Some of the differences include the following. First, it is the state of a machine rather than a person that is changed, and the signer represents the surrogate [laundry-doer] who is aware of the change. Second, rather than “Cause,” I represent the change as a natural progression, using the label “progressing to” in the rightmost box in the diagram. The natural progression is that of [washing machine’s] proceeding from agitating (Event 1), which is the normal operation (state A), to the cessation of agitating (the associated completion state).

Despite the iconic properties of the citation form WASH-CLOTHES, it is not possible to exploit them further in the description of the end state of the machine’s operation. Other scenarios involving washing machines described in ASL illustrate that it is possible to exploit the iconicity associated with WASH-CLOTHES. For example, in a scenario where the washing machine stops functioning in the middle of its operation, the signer could depict this in part by stopping the movement of the manual articulators of WASH-CLOTHES. This option does not seem to be available to be used to depict the scenario in (1). Instead, the signer needs to rely on a separate manual sign, FINISH, to indicate the completion phase of the event.

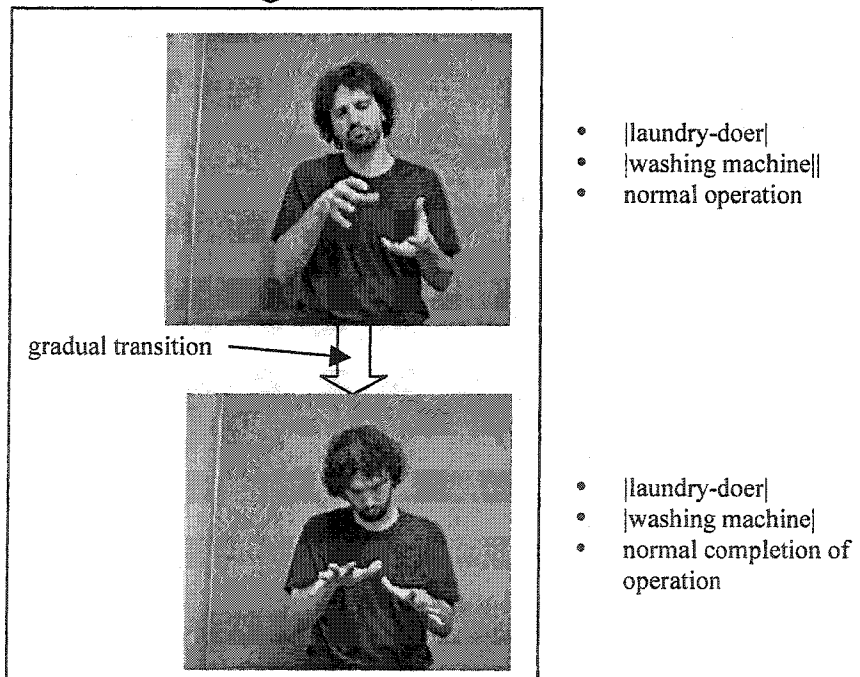
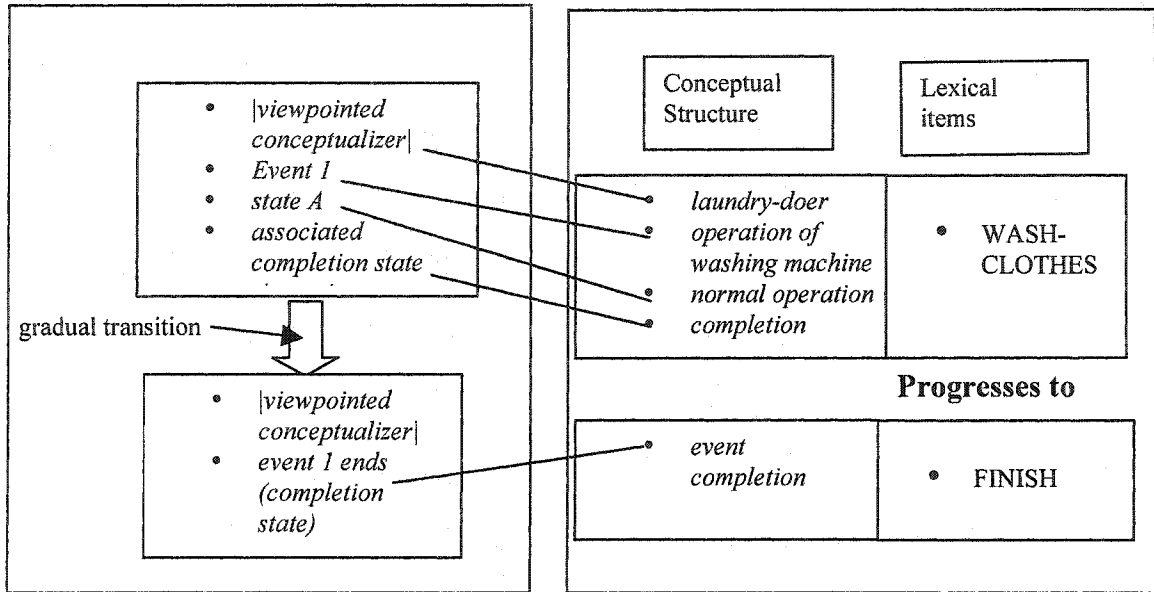


Figure 5: Blend diagram of WASH-CLOTHES,protracted FINISH

1.3 The slow forwards head nod NMS: a result of iconic-metaphorical mappings

In Chapter 3, the *ah* NMS, involving a backwards head nod, was demonstrated to be metonymically related to the real world gesture that is produced by individuals who note the appearance of an object or event that was previously expected. Such a relation and the observation that the slow forwards head nod NMS described in this chapter occurs during |Real Time| suggest that it is worthwhile to consider the motivation underlying the semantics of the head nod NMS.

We can determine whether the SFHN NMS has a direct iconic link by considering possible counterparts in any of the frames called up by the verbs WASH-CLOTHES, LECTURE, or RUN. Since no direct iconic link obviously exists in this regard, we must look elsewhere for motivation. One possibility involves metaphorical mappings. Taub (2001) provides many examples of metaphorical mappings in ASL which also involve iconic mappings. For example, THINK-PENETRATE illustrated in (7) is made possible in part by a set of iconic mappings between articulators and a source domain, such as that made between the index finger handshape and the B handshape on one hand and *object* and *barrier* on the other. There is also a set of correspondences via a metaphor similar to the English metaphor COMMUNICATION IS SENDING. Here mappings are made between the source domain and the target domain, resulting in entities such as the |index finger as *object* as thought| and the |B hand as *barrier* as difficulty in communication|. As the following demonstrate, applying a similar double mapping approach to the head nod NMS reveals a possible motivation underlying the NMS.



7) THINK-PENETRATE

First, let's consider the metaphorical mapping underlying the NMS. Lakoff and Johnson (1980) demonstrate that English speakers use two metaphors to structure the experience of time. One is TIME IS A MOVING OBJECT. This metaphor underlies English expressions such as "The time for action has arrived." The source domain of the metaphor has among its components two locations, a starting location and a new location. Another component within this domain is a schematic object, which moves between the two locations. This source domain structures one way in which we communicate thoughts about time: time is understood to be an object, and its interval corresponds to the movement of the object towards another location.

The other metaphor is TIME IS STATIONARY AND WE MOVE THROUGH IT. This is the metaphorical mapping that seems to underlie the head nod NMS. Table 1 lists the correspondences between the source and target domains of this metaphor. The source domain is a schematized domain (or an image schema), which consists of a *mover* who *moves* from a *source* location to a *goal* location. These components are the respective counterparts of the components in the Time target domain, the self (who experiences Time), temporal "point" 1, "progression", and temporal "point" 2.

Metaphorical Mapping: TIME IS STATIONARY AND WE MOVE THROUGH IT	
Source	Target
<i>Mover</i>	Self (experiencer of Time)
<i>Location 1: source</i>	Temporal “point” 1
<i>Movement</i>	“Progression”
<i>Location 2: goal</i>	Temporal “point” 2

Table 1: Correspondences between components in one English metaphor structuring the experience of Time

This metaphorical mapping is only one part of the mappings underlying the head nod NMS. Taub (2001) amply demonstrates how ASL exploits its iconic resources in the production of metaphorical expressions. I will use her double mapping approach to suggest how the head nod NMS shares associations with depicting time. As Table 2 illustrates, this involves the iconic mapping between elements in Real Space and those in the previously described source domain. Schematically, the head can be understood to be an object that moves from one place to another, in this case from a “neutral” position of the spine to one with the head in a lowered position. The ability of the head to move slowly is also exploited here. Moreover, the head movement occurs in Real Time. These elements are counterparts to the elements in the source domain. The head maps onto the *mover* who is understood to be the self who experiences Time. The neutral position is understood to be the source location, and the movement of the head depicts the “progression” of the self through Time. At the end of the movement the head bounces back to neutral position, depicting an “arrival” at a new temporal “point.” Again, the

movement of the head is understood to move in |Real Time|, which allows the head nod to be co-produced with the general |Real Time| property of the expression.

Iconic Mappings		Metaphorical Mapping: TIME IS STATIONARY AND WE MOVE THROUGH IT
Real Space	Source	Target
Head	<i>Mover</i>	Self (experiencer of Time)
Neutral position	<i>Location 1: source</i>	Temporal "point" 1
Movement	<i>Movement</i>	"Progression"
Lowered position	<i>Location 2: goal</i>	Temporal "point" 2
Slight head bounce	<i>impact</i>	"arrival"
Real Time	<i>Event time</i>	Event Time

Table 1: Double mapping underlying the slow forward head nod NMS

2.0 Sideways head tilt and facial expression change in gradual change of state expressions in ASL

In this section, we examine another pattern in ASL that describes a gradual change. The expressions analyzed here involve physical debilitation. Nonmanual components as well as |Real Time| are part of the construction involved in the production of the expressions described below. The NMS, as we will see, include the signer's sideways head tilt and a change from one facial expression to another.² The final body posture is shown to represent the physical posture of the experiencer in a state of debilitation.

² Bahan (1996) describes a head tilt in ASL used to mark subject agreement. The sideways head tilt described here is different in form and meaning.

2.1 Description of expressions

The pattern instantiated by the expressions in (7), (9), and (11) below contains two manual signs and a particular set of NMS as well as [Real Time]. The first sign is an aspectual form, followed by a sign indicating the resulting change of state effected by the event encoded by the first sign. SUFFOCATE.protracted in (7) is similar to the citation form it is related to, but is capable of being produced for a longer period. The panicked facial expression is understood to be the surrogate's, who is suffocating.

FAINT follows this aspectual verb form, indicating the result of the surrogate being suffocated. Here the signer also uses two NMS components to partially depict the fall into unconsciousness. First, there is a change of facial expression from the panicked facial expression to a less constricted face, often with eyes closing for the short duration of this phase. Second, accompanying this change in facial expression is a combination of a sideways head tilt.



7) SUFFOCATE..... FAINT.*sht*.....

The citation form sign FAINT does not (necessarily) have such NMS accompanying it.

The citation form signs (8) and (10) are related to the signs describing the resulting state

in (10) and (12) do not have these NMS. This suggests that the set of NMS are supplied by the schematic construction.



8) DIE



9) SICK."over time"..... DIE.*sht*



10) WEAK



11) OLD."over time".....WEAK.*sht*

For (9) and (11), the schematic construction also supplies the necessary aspectual constructions that combine with SICK and OLD, which appear to be adjectives rather than verbs. SICK."over time" has a small cyclical path. After a series of such paths, manual and nonmanual changes are made simultaneously, followed by the head tilting to the right. At the same time DIE is produced, and its final segment coinciding with the final physical location of the head tilt.

OLD."over time" is the result of OLD combining with a different aspectual construction. Here the first handshape, which has a "C" configuration, is placed on the chin and as it moves downward closes into an "S" configuration. Unlike in the citation form, in the aspectual form the "S" configuration remains in space and moves downward very slowly, almost imperceptibly. Accompanying this manual portion of the aspectual form is a set of head movements. There appears to be a slow downward motion of the head in addition to a continuous nodding of the head. Then there are simultaneous changes to the manual and nonmanual portions of the aspectual form. The head tilts to

the left and the final segment of the sign WEAK is produced at the final position of the head.

It is clear that |Real Time| is activated in (7), (9), and (11). The aspectual constructions involved in these expressions all have |Real Time| components which are projected into the blend. The facial expression made during the change phase in (9) and (11) involves an eye squinting, which is also found in adverbs like OVER-TIME illustrated in (12). This suggests that the eye squinting is a NMS that is associated with depicting time. It also involves a iconic-metaphorical mapping involving the understanding of temporal points as being spatially located. The eye squinting is metonymically related to the experience of squinting eyes in order to better see something in a distance.



12) OVER-TIME

Finally, the sideways head tilt produced above is metonymically related to slunken physical posture connotative of diminished health. The facial expression change is similarly metonymically motivated. The metonymy underlying the sideways head tilt allows it to have a depicting time property, as with the backwards head nod described in

Chapter 3. The sideways head tilt and an indication of the new state cannot be produced in isolation from the depiction of the change that occurs prior to the new state. Here we also see that there are two tightly linked phases, with the latter serving as an endpoint to the depiction of the change. The facial expression also indicates the “arrival” at the end state.

2.2 Diagrammatic representation

Figure 6 diagrams the blending process underlying (7). The construction represented in the leftmost box specifies that the change of state is debilitating. It has a *|viewpointed conceptualizer|* existing in *|Real Time|*. *Event 1* is understood to cause *state B*, a debilitated state. SUFFOCATE describes the state of an individual who cannot breathe. The sign seems to be iconically associated with a mouth that is closed rather than someone closing the mouth with a hand or another object. If someone is suffocating a victim, a depiction of the suffocating action would precede SUFFOCATE. So it is the state rather than the act of suffocating that is profiled here. SUFFOCATE has a resulting state as part of its semantics, and FAINT describes one such resulting state. The sideways head tilt NMS, not included in the diagram, is specified to occur during the depiction of the gradual change between the two states.

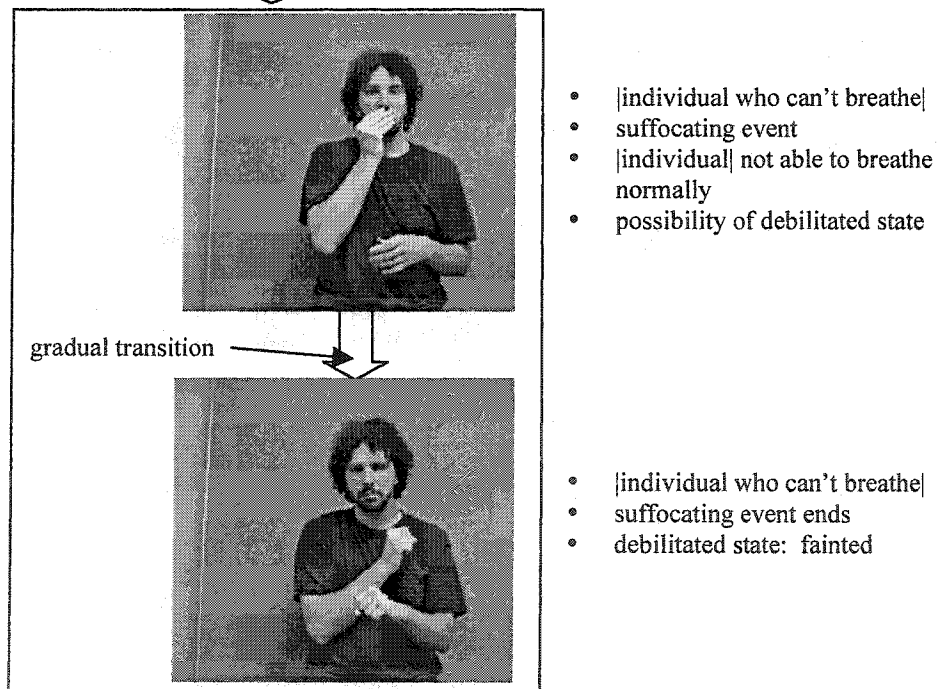
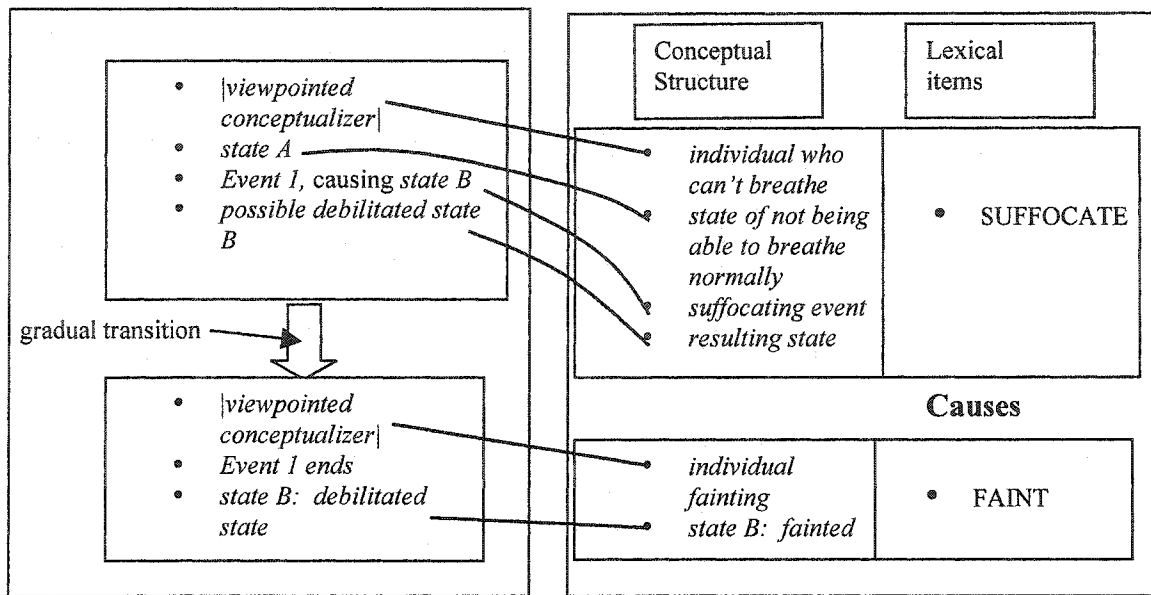


Figure 6: Diagrammatical representation of (7)

3.0 Backward head nod in a gradual change-of-state construction

The third type of change-of-state expression in ASL described in this chapter involves not only facial expression change but a backward head movement as well. This head movement appears to signal a viewer's recognition of the ongoing transition to a new state. This slow backwards head nod NMS is glossed as *ah*₂ because it seems to be related to the *ah* NMS described in Chapter 3, which also has a backwards head nod but produced at a faster rate.

3.1 Description of expressions

The expression in (13) begins with a nonpartitioned, conventionalized verb glossed as BE-DISORIENTED. This verb appears to be metonymically related to a gesture made by an individual in a somewhat adverse situation to, say, maintain physical balance and/or keep certain objects at bay. BE-DISORIENTED is a good example of a sign that has depicting time as part of its lexical make-up. After a few cycles of the hands alternating in circular paths of off-kilter movement, the signer slowly moves back his head as the manual activity subsides. The mouth simultaneously changes to a configuration similar to that in the *ah* NMS, but also at a slower rate. Then the signer produces USED-TO-IT with the head moving downward in tandem with the downward movement of the manual articulators.



13) BE-DISORIENTED*ah*₂.....USED-TO-IT

Because |Real Time| is a component of BE-DISORIENTED—the signer’s facial expression and his eye gaze direction away from the addressee are cues to the activation of a surrogate blend—we can be sure that |Real Time| is activated at the beginning of the expression in (13). Does it remain activated throughout the rest of the expression? When the slow backwards head nod occurs after BE-DISORIENTED, the eye gaze is also directed away from the addressee. This is also true for the other expressions described in this section. No expressions instantiating the schematic, constructional pattern analyzed in this section were found in which the signer’s eye gaze is directed towards the addressee. As far as I can tell, it appears necessary to maintain the eye gaze direction away from the addressee.

One possible motivation for this eye gaze maintenance is related to the association this slow backwards head nod has to a |viewer| and |Real Time|. In (13), the |viewer| is understood to be the surrogate, who is depicted as reacting somewhat awkwardly to a new circumstance but eventually acclimates. The slow backwards head nod produced in (13) is attributed to this |viewer|, who notices his own change. The recognition of the change, I suggest, comes not at the endpoint of the change. Rather, it comes when the ongoing change is at the point where the achievement of the end state is assured. This

then explains the eye gaze requirement: the viewer is recognizing that he is moving past the point of certain change, but is not yet at the end point of the change. Unlike the eye gaze contact that could be made at the end of the punctual expectation-fulfillment expression, establishing eye contact at this phase would be “too early.”

The temporal endpoint in (13) is supplied by a combination of the following. The manual sign, USED-TO-IT, is produced, explicitly indicating the new state. The head nod's downward movement is different from the head's return to the neutral position after BE-DISORIENTED is signed in isolation. Thus, this head movement is an essential component of not only the NMS sequence but also the construction itself. As the punctual backwards head nod in the fulfillment phase cannot be produced in isolation without a preceding expectation phase, the *ah*₂ NMS cannot be produced in isolation. It must be sandwiched by the first state phase and the completely transitioned, new state phase. Thus, we can say that the construction (13) instantiates has three phases, including the recognition phase. The “ah” mouth configuration is replaced by another configuration associated with the third phase. In (13), it is replaced by a mouthing that is a lexical component of the sign USED-TO-IT.

An alternative analysis of the slow backwards head nod has this NMS signaling the endpoint of the change. In this view, the NMS would parallel the punctual form used in the punctual expectation-fulfillment construction. However, my native ASL intuitions suggest that the entity undergoing the change has not really “arrived” at the endpoint when the slower NMS is produced. Rather, such an arrival comes soon after the recognition phase. I assume this is the reason that the construction requires a third phase,

and that the lexical item indicating the new state comes after the production of the slow backwards head nod.

(14) depicts an individual practicing some unspecified activity until a higher level of skill associated with the activity is obtained. For much of the expression, the signer is understood to be the |individual practicing unspecified activity|.



14) PRACTICE_{protracted}.*effortful*.....*ah*₂..... SKILL

(14) is different from (13) in the use of an aspectual form of a partitioned verb, PRACTICE in the first phase of the expression rather than the nonpartitioned BE-DISORIENTED. Because this aspectual form of PRACTICE has associations with depicting time (it combines with the protracted aspectual construction), it is integrated with the surrogate blend. As can be seen from the illustration in (14), the *effortful* NMS is co-produced with the protracted form of PRACTICE. This manner NMS used in (14) also signal the activation of a |Real Time| surrogate blend.

The rest of the expression in (14) parallels that in (13). The *ah*₂ NMS signals the surrogate's recognition of the imminent transition to a new state. Closely following this NMS is SKILLED, which indicates the new state. Accompanying this sign is a head nod. In Chapter 5, I discuss how the expressions described thus far observe Goldberg's (1995)

analysis of semantic constraints on the English resultative construction, including the end-of-scale constraint. Here it will suffice to mention again that the final phase of (13) and (14) appears to indicate that the change has reached the point where generally the fact that a new state exists would not be in dispute.

Finally, (15) demonstrates the projection of the signer's viewpoint into the depiction of a change of a lake from a liquid state into a solid state. The expression begins with an aspectual form of FREEZE. The citation form FREEZE is produced with two 5 handshapes with fingers retracting at the middle knuckles. In the aspectual form, the retraction is made at a slower rate, clearly iconic for the slow rate of change involved in the scenario described in (15). Of course, the rate of the articulator movement and the rate of water changing into a solid are not understood to be one to one. Instead, the latter rate is compressed with the Real Time rate of movement into the depicting time of the megablend created in (15).



15) FREEZE.protracted.over-time *ah*₂ SOLID

During the production of the aspectual form of FREEZE, the signer's facial expression includes a slight squint. As it is probably related to a set of NMS that signals

a progression of time between longer points (c.f. OVER-TIME discussed in Section 2), I gloss this as “over-time.”

The ah_2 NMS in (15) does not seem to be associated with any profiled participant in the scenario that (15) is depicting. The signer also does not seem to be representing any surrogate. Instead, the signer’s viewpoint is projected into the blend, independent of other viewpoints. (16) is another example where the signer’s viewpoint is projected into a blend and is understood to be a narrator and not a surrogate.

16)



depiction of water flowing out



depiction of rising level of water

(16) is used to describe water overflowing from a washing machine and rising from the floor. It is not required for a *|viewpointed conceptualizer|* to be represented by the signer in this blend. For example, the signer could say that the *|laundry-doer|* has left the vicinity of the *|washing machine|*. Then the signer describes the *|water overflowing and rising from the floor|*. The signer obviously is looking at the *|washing machine|* and the *|water|* as he depicts the scene. Here the signer has projected his viewpoint into this blend and does not represent a surrogate. A similar projection occurs in (15). Thus, the *ah₂* NMS is attributed to this signer as narrator. Even here, the signer's eye gaze does not return to the addressee until the next phase, where SOLID is produced to indicate the new state.

3.2 Diagrammatic representation

Figure 6 diagrams the integration underlying (14). The leftmost box represents the schematized conceptual structure of the construction instantiated by the expressions analyzed in this section. What is different here than in the other diagrams is the inclusion of a second arrow inside the larger arrow that represents the gradual transition between the states. The smaller arrow has a gradation of colors not only to distinguish it from the larger arrow, but also to represent the viewer's recognition that a new state is imminent.

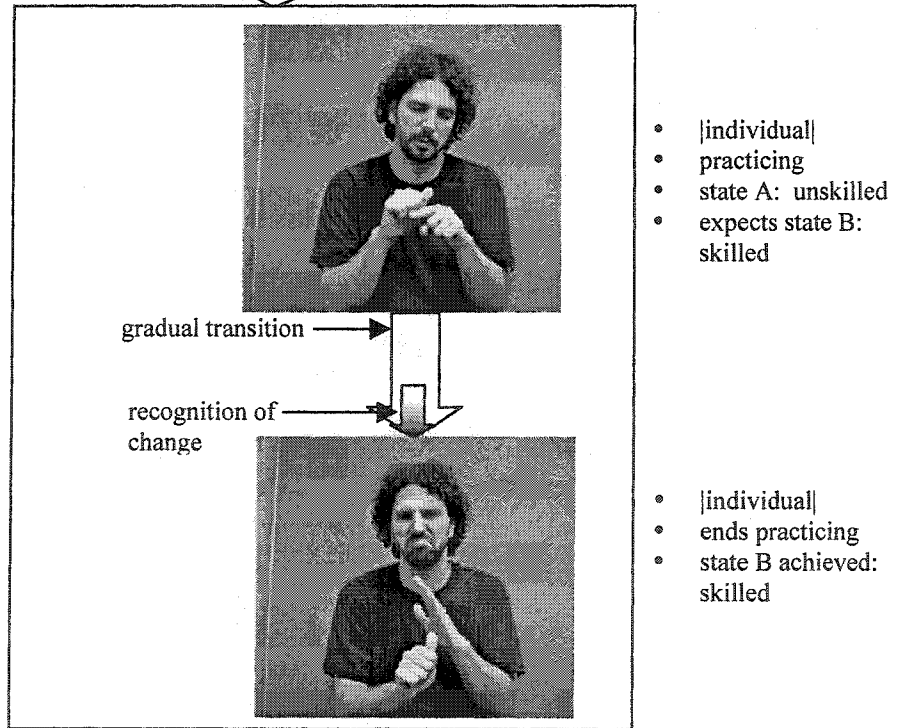
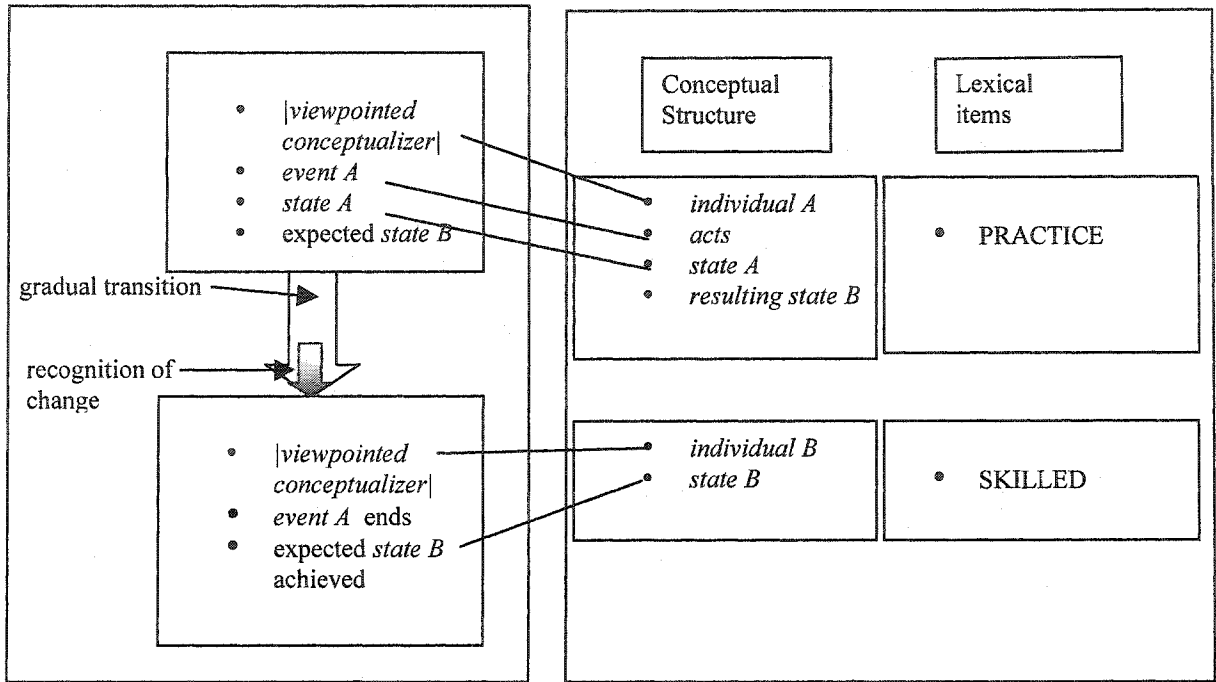


Figure 6: Diagrammatical representation of (14)

The rightmost box represents the other input involving the conceptualized event and the lexical items that encode an event and a state. PRACTICE has counterpart elements that are mapped onto elements in the construction input. The signer's viewpoint and that of *individual A* is mapped together, producing |individual| in the surrogate blend. This |individual| is understood to be practicing, desiring to reach a new state. This new state is encoded by SKILLED, which is produced in the third phase of the expression.

The construction input also specifies that the first verb be an aspectual form, so when the citation form PRACTICE with the more general aspectual construction within this construction, the result is PRACTICE.protracted. The construction input also contributes the slow backwards head nod and the "arrival" head nod.

4.0 Summary

This chapter illustrates, once again, how ASL depends on complex constructions that has a |Real Time| component to describe change-of-state events. Here three different ASL constructions used to describe gradual change of states were examined. They differ in what NMS they have as a component. One construction involves a slow forwards head nod that is itself a result of iconic-metaphorical mappings. This NMS indicates that the |Real Time| it co-occurs with corresponds to the imminent change of state, and the end of this NMS corresponds to the endpoint of the change. Another NMS involves a sideways head tilt, which was described as being metonymically linked to the slunken posture one associated with diminished health. The third construction has a slow backwards head nod that appears to be related to the backwards head nod described in Chapter 3.

Chapter 5: Comparative Evaluations of Resultatives in English and ASL

0.0 Introduction

The description of ASL constructions given in the preceding chapters is intended as an initial step towards a larger understanding of how ASL describes events involving some type of change. Naturally, an expanded study would need a larger set of data to work with. To assist in future data collection, it is also desirable to have additional and comparative descriptions of the constructions of interest from other languages, both spoken and signed. As will be demonstrated in this chapter, these ASL constructions indeed do have some characteristics comparable to the English resultative construction. A crosslinguistic examination then, which is desirable in itself to achieve “big picture” understanding, might reveal these additional characteristics. In this chapter, I first discuss the contrast exhibited between the two languages in the appearance of the postverbal noun phrase, which is associated with the participant in the change-of-state scenario undergoing change. Discussion in this first section leads to the examination of a sequence of depicting verbs used to describe implicitly and explicitly cut and break events. Finally, I also consider whether the semantic constraints on and the functions of the resultative construction as respectively discussed in Boas (2003) and Goldberg (1995) are comparable to ASL change-of-state expressions described in this dissertation.

1.0 Argument structure

This section is concerned with the argument structure of ASL change-of-state expressions in light of that of the English resultative construction. I first briefly review the argument structure of the latter and discuss ASL’s preference in having no postverbal

noun phrases in certain change-of-state constructions. This phenomenon is shown to exist in other ASL expressions as well.

1.1 Appearance of postverbal noun phrases in English resultatives

Some linguists studying the resultative construction in English have been interested in what licenses the post-verbal noun phrase in expressions having the pattern of NP₁ V NP₂ XP, where the XP can be an adjectival or a prepositional phrase. This post-verbal nominal can be licensed by the verb as in (1b). Sometimes it is not, as in (2b). The post-verbal nominal that appears in resultatives such as (2b) is called a *fake object* (Simpson 1983, cited in Boas 2003). The reflexive used in (3) is called a *fake reflexive*.

1a) Pat hammered the metal.

1b) Pat hammered the metal flat. (Goldberg 1995)

*2a) Pat sneezed the napkin.

2b) Pat sneezed the napkin off the table. (Goldberg 1995)

3) He ate himself sick. (Goldberg 1995)

Goldberg (1995) uses a construction grammar approach to the analysis of the resultative construction in English. According to her analysis, the appearance of the post-verbal nominals in (2b) and (3b) are made possible by the resultative construction, which exists independently of the verb. In (1b), the patient argument from *hammer* overlaps with the construction. As the verbs in (2b) and (3b) do not contribute any patient argument, the construction contributes this argument, in addition to the result/goal argument. We saw

in previous chapters how ASL constructions make their own contributions to expressions, such as |Real Time| and NMS.

1.2 Lack of postverbal noun phrases in ASL change-of-state expressions

1.2.1 Lack of fake objects

We now turn to a consideration of whether ASL change-of-state expressions have fake objects following a verb that encodes the activity which effects the change-of-state. First, Simpson (1983, cited in Boas 2003) uses the term “fake object” as a syntactic term. As I do not address the syntactic characteristics of verbs that depict motion, I will limit the use of “fake objects” to noun phrases that are not themselves depicting. (7b) and (8b) respectively contain NAPKIN and GYMSHOES as fake objects as the verbs SNEEZE and RUN do not subcategorize for patient arguments. These two expressions were judged unacceptable by consultants, while the versions without fake objects in 7a) and 8a) were judged to be the more conventional expressions. The replacement of RUN by USE in 8a) also suggests that a constraint exists on the use of RUN as affecting an object other than the *runner* (c.f. Chapter 4). Discussion on what this constraint might be is taken up in the next section. In 8c), we see that even the replacement by USE still does not allow a fake object to follow.



7a) PRO-1 SNEEZE FLAT-OBJECT.ON.FLAT-OBJECT.FALL
 “I sneezed the napkin off the table.” (Goldberg 1995)

7b) * PRO-1 SNEEZE NAPKIN FLAT-OBJECT.ON.FLAT-OBJECT.FALL



8a) USE.protracted WORN-OUT.*sht*
 c.f. “Donna ran her Nikes threadbare.” (Boas 2003)

8b) * DONNA RUN GYMSHOES WORN-OUT

8c) * USE GYMSHOES WORN-OUT

1.2.2 Post-verbal NP licensed by the verb

Finally, post-verbal noun phrases licensed by the verb elsewhere typically do not appear in the ASL change-of-state constructions described in this dissertation. In order to fully appreciate this phenomenon, it is useful to look at a type of verb described in Liddell (2003) which is syntactically intransitive but semantically transitive. Liddell uses the ASL verb ENJOY as an example, which cannot take a direct object, but can be part of an expression in which a NP representing the entity that the *enjoyer* enjoys is topicalized, e.g. [THAT MOVIE]_{TOPIC} PRO-1 ENJOY.

WAVE-AT in (9) is another verb that does not appear to license a post-verbal NP. As discussed in Chapter 3, when the signer uses this verb, he is understood to be a surrogate waving his hand towards another surrogate in order to get his attention. This surrogate clearly has semantic status, but I assume that it does not have the syntactic status of direct object.

As seen in (9), following WAVE-AT with COP is not grammatical. In (9b), the NP is produced with eye gaze towards the addressee, and does not seem to be formally related to the two verbs it is sandwiched between. The NP here is a stand-alone item produced to identify the entity whose attention is needed. The production of the first WAVE-AT is not as extensive as the second. This is probably because the signer has judged that it is not clear as to who the surrogate is waving to.

*9a) WAVE-AT COP

9b) WAVE-AT COP WAVE-AT.*effortful*

*9c) WAVE-AT.*effortful* COP TURN-EYES-TOWARD-1.*ah*

9d) WAVE-AT COP WAVE-AT.*effortful* TURN-EYES-TOWARD-1.*ah*

In (9c), the placement of COP intervenes between the two phases of the expectation-fulfillment construction, which is used to describe the eventual success (TURN-EYES-TOWARDS co-occurs with the *ah* NMS) of an “effortful” attempt to call the |cop|. This inserts a break into |Real Time| which would otherwise proceed unbroken throughout the expression. (9d) is similar to (9b) but with the addition of the fulfillment phase at the end. The tight connection between the two phases of the expectation-fulfillment construction here is clearly demonstrated.

Could a NP appear after the construction? In certain cases, it could. (10) is one example.

(10) SEARCH.protracted.*effortful* FIND BOOK

In (10), BOOK is produced with the head closer to neutral position, not in its backward position as made during FIND. There appears to be several possible circumstances licensing the appearance of the NP after FIND, including the type of scenario that (10) is used to describe, e.g. a scavenger hunt in which an individual has a list of items to seek out. Although not discussed here, this seems worthy of a closer look elsewhere.

It is likely that the constraint on the appearance of a postverbal NP described above is not unique to the constructions analyzed in this dissertation but is rather a more general one involving aspectual forms. Liddell (2003) discusses an example in which an NP does not follow a verb marked for aspect. “The problem is that in order to be able to use an aspectual verb form meaningfully, the entity to elaborate the landmark must already be prominent in the discourse” (Liddell 2003:64). If WAVE-AT is a citation form sign, then this observation may need to be expanded to include verbs that exhibit

depicting time and not just aspectual forms.¹ In any case, this constraint is more general to ASL, and therefore need not be stipulated in the constructions described in this dissertation.

With the preceding as background, we turn to expressions involving some of the possible ways ASL can be used to describe an individual's drinking pop (from a bottle or glass) until no more pop is left. DRINK in (11a) – (11c) does not appear to exhibit depicting time. The signer's eyes remain directed at the addressee, and he also forms an oral approximation of the English "drink." For contrastive purposes, DRINK-IT-UP in (11d) obviously involves |Real Time|. This verb includes the following accompanying manual component: eye gaze is directed away from the addressee, the mouth is open and depicting the sucking of liquid, and the signer is understood to be a surrogate who is moving his head back in order to empty the contents of the |container| understood to be in one |hand|. Then the head moves forward and slightly tilts to the left. This head tilt resembles the one in the NMS sequence accompanying the end state expressions involving debilitation described in Section 2 of Chapter 4.

11a) PRO DRINK POP *hm* TO-ZERO-EXTENT

11b) PRO DRINK TO-ZERO-EXTENT

11c) ? PRO DRINK POP TO-ZERO-EXTENT

11d) PRO DRINK-IT-UP TO-ZERO-EXTENT

Examples (11a) – (11c) are expressions which were signed to consultants for grammaticality judgments in order to determine whether there is a particular argument

¹ There are some instances, especially for narrative purposes, where the signer chooses not to use a NP to identify the entity prior to introducing it within a |Real Time| megablend.

structure in ASL used to express resultativity. (11a) has a head nod that functions to mark the end of a clause. As this head nod follows POP, we can say that (11a) has two clauses. (11b) does not have a post-verbal NP, and it is not immediately clear what the structural relationship between the two verbs are. Expressions of this type deserve further examination, as their apparent lack of |Real Time| contrast with other change-of-state expressions described in this dissertation. In Section 2 below, I discuss other expressions elicited from consultants which are more or less similar to (11b).

(11c) is produced using a prosodic structure similar to that in (11b), i.e. at a similar rate of production without any head nod or pause. None of the consultants found (11c) to be natural. The same response was given to similar expressions with the argument structure of (11c), e.g. PRO-1 EAT HAMBURGER ALL-GONE. This suggests that it is not very likely that ASL resultatives or change-of-state constructions exhibit the pattern shown in (11c).

2.0 |Real Time| and description of cut/break scenarios

This section briefly discusses the expressions produced by consultants after viewing short videos of individuals performing an act of cutting or breaking an object. As we will see, there are other conventions available to signers to describe change-of-state scenarios. An examination of these additional conventions is shown to benefit from a consideration of |Real Time| components existing within them.

Signers were shown selected video clips of individuals using their hands or instruments to cut or break various objects.² Many descriptions included the expectation-fulfillment construction, particularly those that included resistance on the part of the

² Cut and break clips, version 3, designed by Jürgen Bohnemeyer, Melissa Bowerman, and Penelope Brown, Field Manual 2001, Language and Cognition Group, Max Planck Institute for Psycholinguistics.

patient or the high intensity of the instigator. Scenarios involving manual actions without external instruments (e.g. hammer or knife) are depicted using verbs of manual actions. Some depictions of the use of instruments were included in the expectation-fulfillment expression. I detail two such descriptions below. In some instances the expectation-fulfillment construction is not used, most likely due to the effortless activity required. This simply involves a sequence of verbs, as will also be detailed below.

(12) was used to describe how the instigator cut on a small, broken-off tree-branch with a knife until a part falls to the ground. The first part involves the expectation-fulfillment construction. Here the signer is understood to be the |instigator| holding a |branch| in |her right hand| while holding a |knife| in the other. The cutting is depicted as an effortful one. Soon the |hand| moves down a short distance and the signer’s head moves back while the onomatopoeic “boom” is produced with the mouth. Here the result is not made explicit, but it is from these two cues that addressee can make the inference that a |part of the branch| has been cut off.



12) *cutting with knife* hand with knife moves down part separates.....

After the |hand holding the knife| moves down, the signer produces two index fingers to depict the separation of a |part of the branch| from the |main branch|. The

onomatopoeic “boom” NMS is also produced here. This is a direct, explicit depiction of the resulting state of the |branch| that was only inferred in the expectation-fulfillment construction. Also important here is that the eye gaze of the signer is directed at the addressee, unlike during the expectation-fulfillment expression. This observation will help us address the question that follows.

It is clear that in (12) a portion of the scenario being described is depicted twice. The portion that is depicted twice is the moment at which the branch’s change-of-state occurs. Since the expectation-fulfillment construction has a |Real Time| component, we know that the first time this portion is described, the depiction involves |Real Time|. In the second depiction, the onomatopoeic “boom” is produced. The depicting conventions in the use of BOOM are not fully understood. In many cases, this BOOM depicts in |Real Time| a facet of a scene involving breaking, explosions, etc. It is possible that BOOM is also used as part of an expression that does not activate |Real Time|. For example, BOOM can be part of a depiction of a hole made by a bullet shot from a gun. The signer could depict the creation of such a hole in |Real Time|, i.e. the signer shows how the hole was made. The signer could also depict just the hole itself without showing how it was made, and in this case, |Real Time| is not activated. Apparently in both cases, BOOM could be used, so this onomatopoeic sign is not likely to help us determine whether the second depiction in (12) has |Real Time|.

When the explicit depiction of the |branch’s| change-of-state was produced in (12), the signer’s eye gaze is directed at the addressee. This suggests that the signer’s viewpoint is not blended with that of the |individual| who cut the |branch|. A better

understanding of the relationship between the indirect and explicit depiction pairs will allow us a clearer picture of this eye gaze behavior.

Another expression involving the expectation-fulfillment construction was used to describe the instigator repeatedly hitting against a string whose ends were taped on two adjacent tables. As seen in (13), the expectation phase is depicted with an aspectual form of HIT-WITH-HANDLED-INSTRUMENT, which involved repetition, and this was accompanied by a NMS similar to the *effortful* NMS. Also present during the expectation phase is a depicting buoy (Liddell 2003). This buoy has the form of an index finger, which is a part of a previously produced depicting verb which depicts the |string's| location, length, and position vis a vis the signer (this verb does not have a |Real Time| component. Immediately prior to (13), the signer also used a related verb in which both index fingers depicts the bouncing up and down of the |string| in reaction to the force of the |hammer|. In contrast, the buoy does not have this movement.



13) *hitting string with hammer* *string separates*

As seen in the illustration, the right hand depicts the |instigator's right hand holding a hammer| while the left hand is partitioned off to represent a |portion of the string|. The

fulfillment phase is immediately preceded by a quick, almost imperceptible return of the right index finger to its previous location. This manual articulator then moves simultaneous with the head's own motion. The right hand moves downward via the rotation of the forearm while the head moves backward. The mouth produces an onomatopoeic sign approximating "boom."

What is interesting here is that a separate depicting verb is produced in the fulfillment phase. In other expressions, the manual articulators of a single depicting verb are used in both phases. The signer could have instead continued depicting the bouncing of the |string| until it breaks, but he selects another option available to him and (13) is the result. Here we are also reminded that transitory movement of a partitioned-off manual articulator is not understood to occur in |Real Time|.

Finally, (14) is an example of an expression that does not use the expectation-fulfillment construction to describe an instigator changing the state of an object. The scenario described here is the cutting of a small rope. Prior to (14), the signer depicts the manipulation of the |rope| in order to produce a loop. Here the signer produces a |Real Time| surrogate blend in which he is understood to be the |instigator| and manipulating the |rope|. Then, as seen in the first part of (14), the |left hand| continues to be understood to be holding the |rope|, the signer's right hand produces CUT-WITH-SCISSORS to depict a cutting of the |rope|. Here the signer's right hand is partitioned off to produce the verb, and is also understood to be a |pair of scissors|. The use of this verb does not explicitly depict the change made to the |rope|, but that the |rope| is cut is inferred.



14) *a cut with scissors*..... *rope separates*.....

After CUT-WITH-SCISSORS is produced, the signer produces a verb that explicitly depicts the separation of the |rope|. Here we see that (14) parallels (12) in repeating the portion of the scenario where the change occurs to produce the explicit depiction. The signer's eye gaze is directed at the addressee here, and an onomatopoeic sign is produced. Again, it appears that the verb used here also has a |Real Time| component.

It seems clear that the reason the expectation-fulfillment construction is not used here is because the scenario proceeds without effort. Had there been difficulty in cutting the rope, that construction would be used.

3.0 Semantic characteristics of resultatives

In this section, I briefly review some semantic characteristics identified for English resultatives. I discuss whether these characteristics are comparable for the types of ASL expressions already discussed thus far, leaving in-depth analysis for future work.

3.1 Distinction between resultatives and “cookbook sentences” (Boas 2003)

Boas (2003) describes resultatives as a “perspectivizing construction.” There are, according to Boas, different communicative functions of resultatives, which are described in Section 3.3. But the main communicative function of resultatives is to focus on the outcome of an event. To illustrate this function, Boas contrasts the communicative function of resultatives with “cookbook sentences” like “Cook the rigatoni until just tender.” This sentence focuses not just on the outcome but the cooking activity itself as well.

In Chapters 3 and 4, I demonstrated how |Real Time| is an essential component of change-of-state constructions. Given that these constructions depict the change as well as indicate the new state, they parallel “cookbook sentences” rather than resultatives in English. This suggests that the change-of-state constructions described in this dissertation are not as equivalent to the English resultative construction as one might expect, in interests of cross-linguistic comparison.

3.2 Semantic constraints on English resultatives (Goldberg 1995)

Goldberg (1995) discusses some constraints on English resultatives.³ I briefly describe these and discuss whether they apply to ASL.

3.2.1 Animate instigator constraint

There is a constraint on two argument resultatives in English that the instigator be animate, although this instigator need not be an agent. “She slept herself sober”

³ One constraint is on the use of deverbal adjectives in the resultative construction, as in *He painted the house reddened. I do not discuss this constraint here.

(Goldberg 1995) is one example from English. Because ASL change-of-state expressions do not normally have two syntactic arguments, this constraint does not apply to ASL.

Here we could ask whether ASL may use change-of-state constructions to describe a non-animate entity causing an object to change state. (15) can be used to depict something like a garbage compactor pushing against a can until it collapses and becomes flat. Here the signer's right hand is understood to be the |lever of the garbage compactor| and the left hand the |can|. The former applies pressure to the latter, as the signer produces the *effortful* NMS. When the left hand changes to a B handshape, depicting the new state of the |can|, the signer produces a backward head nod.



15) *pressure made on can* *can flattening*

Goldberg (1995) uses the unacceptability of “The hammer pounded the metal flat” to demonstrate that instrument instigators are not possible. However, Goldberg, citing Randall (1983), says that speakers of certain dialects find expressions like “The jackhammer pounded us deaf” and “The alarm clock ticked the baby awake” acceptable. Future work could consider whether this constraint applies to more clear cases of ASL

expressions involving change-of-state in which an instrument is the instigator of the change.

3.2.2 Constraint on time interval

There is an aspectual constraint on English resultatives which is stated as follows: “The change-of-state must occur simultaneously with the endpoint of the action denoted by the verb” (Goldberg 1995:194). This is precisely what change-of-state constructions described in this dissertation often depict, especially when the signer represents the surrogate |instigator|. It does not seem possible to use the punctual expectation-fulfillment construction if the change-of-state occurs at a point other than when the |instigator| is applying physical or mental energy towards the object of the change. This is also true for some expressions in which the signer represents the |individual| undergoing the change, as in WAIT.protracted CALL-1. Here the |waiting individual| is understood as no longer waiting. Had this |individual| intended on refusing to comply with the summoning scenario, the construction probably would not be used here.

3.2.3 End of scale constraint

Another constraint on the English resultative has to do with the degree of change involved. It appears not possible to produce a resultative such as “She ate herself a little sick.” The change must pass a boundary so modification to the lexical item describing the change is not warranted. This appears to parallel the NMS sequence described in Chapter 4 where a slow backward head movement is followed by a forward head nod. The new state indicated at the end of the sequence, such as SKILLED, is a definite change. It is not possible to use this sequence to describe a slight improvement.

Interestingly, in ASL it might be possible to produce an expectation-fulfillment expression that describes a series of slight modifications to an object. For example, a series of efforts to open an old door with various things impeding its movement could be described with a series of the expectation-fulfillment construction. However, this would require the NMS sequence in each instance to be lower in intensity than the final stage where the |door| is open enough for an |individual| to enter.

3.3 Communicative functions of resultatives (Boas 2003)

Boas (2003) discusses four communicative functions of resultatives. One function is to emphasize the endpoint of an event. Some English verbs like “shatter” already encode the result state: an object (typically fragile) is broken into many pieces. So when the expression “The vase shattered into pieces” is produced, this is a resultative that emphasizes the endpoint of the shattering.

ASL does have verbs that already encode the result state. FREEZE is one such verb, where the state of “solidity” is encoded. We saw in Chapter 4 how an aspectual form of FREEZE was used as part of a depiction of a lake changing into ice, and the end state was indicated by SOLID. However, as mentioned above, this expression is probably not best regarded, construction-wise, as equivalent to the English resultative. In Section 2 of this chapter, I discussed an expression in which the cutting of a branch was depicted twice, once indirectly and again explicitly. The manual depicting verb CUT-WITH-A-HELD-SHARP-INSTRUMENT in (12) encodes the result state of “being cut.” The verb that followed depicted the change-of-state of the |branch|. This could be seen to emphasize the endpoint already inferred previously. However, it remains unclear what

the relationship between the two verbs are or whether (12) should be regarded as a resultative.

Other verbs in English and ASL do not encode as explicit an end state as “shatter” or FREEZE. This is where another communicative function of resultatives comes in, which is to be less vague about the endpoint of the event. The ASL BREAK and the English “break” are examples of verbs that do not specify what the broken object looks like. It seems clear that in ASL a depiction of the end state of an object could follow BREAK. However, distinguishing this from expressions where BREAK profiles not the process of *breaking* but the end state, as in “The plate was broken into pieces.” Moreover, it would not be very surprising if, in a scenario description in which an instigator breaks an object, ASL signers prefer the use of a depicting verb rather than BREAK, a verb that does not have a [Real Time] component in its citation form.

The last two communicative functions described by Boas (2003) have to do with the profiling not of the prototypical entity but of some other participant in the scenario being described, as in “Donna ran her Nikes threadbare.” Here the patient’s feet are clearly part of the frame of *running*. It is possible in English to profile a participant that is not part of the frame associated with the verb used in the resultative, as in “He sneezed the napkin off the table.” Here the affected participant is not part of the frame which is associated with the verb “sneeze.”

Neither the consultants nor I were able to use the ASL change-of-state constructions described in the previous chapters to produce an expression exhibiting this function. We saw with (8a) that RUN.protracted WORN-OUT.*sh* can be only

understood as affecting the |runner| but not the |shoes of the runner|. An aspectual form of USE is preferred when describing the change-of-state of the |shoes|.

It is possible that this constraint on ASL change-of-state expressions could be explained by a more general constraint involving viewpoint. With a |Real Time| megablend involving an aspectual form of RUN it is likely that the signer's viewpoint is blended with the *runner's* viewpoint. Maintaining this viewpoint in the rest of a gradual change-of-state construction is essential. It also appears that the aspectual form of RUN, in this instance, retains its intransitive status.

On the other hand, the citation form verb USE is transitive, while an aspectually related form is not syntactically transitive. However, it is possible to sign the aspectual form of USE in which the signer's viewpoint is not necessarily blended with any runner. This can be seen as a sort of neutralization, allowing the signer to produce a |Real Time| megablend in which, interestingly, none of the physical parts of the signer are understood to be either the |user of the shoes| or the |shoes| themselves. It is possible to include the *effortful* NMS during the production of the aspectual form of USE, but this NMS is ambiguous with regard to whether it is fully depicting. It might depict the facial expression of the |person| performing an effortful activity or it might be a more schematic sign, one that is related metonymically to the effortful activity and one that has a |Real Time| component.

4.0 Discussion and summary

This chapter discusses some further issues related to a constructional approach to ASL change-of-state forms; we now appreciate the relevance of |Real Time| to the analysis of such constructions.

A comparison was made between the characteristics of English resultatives described by Goldberg (1995) and Boas (2003) and those exhibited by expressions in ASL that are more or less equivalent in the kinds of event relations they describe. Issues of argument structure of resultatives, and other constructions as well,⁴ that have been of interest in spoken language resultatives may not fully pertain to the equivalent ASL constructions. Such ASL constructions typically do not have an NP intervening between the sub-descriptions of phases of within the larger scenario being depicted. This was argued to be not unique to the constructions described in this dissertation, but is more general to ASL, including expressions that involve aspectual forms of verbs. I have discussed one example whereby a depicting verb which activates a |Real Time| surrogate blend does not take an NP complement. This is a common phenomenon. It is possible then that |Real Time| plays some role on a broader, grammar-wide level, motivating the type of constructions available for signed languages. If this turns out to be the case, this would be striking as it demonstrates a substantial typological/grammatical difference between visual-gestural versus vocal-aural modalities.

A brief attempt was made to discern whether ASL expressions exhibit a distinction parallel to that noted by Boas (2003), between “cookbook” sentences and resultatives in English. The distinction involves what portion of the scenario is profiled, whether the profile includes the central activity as well as the resulting change or only the result itself. Boas (2003) suggests that the degree to which the information is relevant influences the choice between respective profiles. It appears that ASL change-of-state constructions overall have a tendency to profile the larger scenario rather than to profile the result in isolation. If this tendency is apparent across a larger corpus of ASL change-

⁴ C.f. Goldberg (1995).

of-state expressions as I suspect it would, we would be remiss if we do not seriously what role |Real Time| has in this aspectual characteristic of ASL.

Finally, ASL expressions describing various cutting or breaking scenarios were shown to employ constructions other than the expectation-fulfillment construction. In these alternative constructions, |Real Time| still plays an important role. As will be discussed at the end of the concluding chapter, |Real Time| needs to be taken in account in investigations of ASL expressions describing complex scenarios, including those that make use of serial verb constructions.

Chapter 6: Conclusion

0.0 Introduction

This dissertation examines the role of |Real Time| in ASL aspectual constructions and other constructions that are used to describe complex events. In this concluding chapter, I first give an overview of the dissertation, summarizing discussion made in each chapter. This is followed by remarks on iconicity in ASL as well as on different verb sequences.

1.0 Chapter summaries

Chapter 1 uses the **conceptual blending theory** of Fauconnier and Turner (1994, 1996) and Liddell's (1995, 2003) analysis of blends in ASL to introduce the property of |Real Time| that exists in a type of **surrogate blend**. Surrogate blends are the product of integrating two distinct mental spaces to create an imagined |world| for a variety of purposes, and this |world| is built on a scale more or less equivalent to the human scale as experienced by the interlocutors. A surrogate |kitchen|, for example, results when the signer's conceptualization of a real-world *kitchen* is mapped onto the surrounding physical space, which itself is a conceptualization that Liddell (1995) calls **Real Space**. In this surrogate |kitchen| blend, the signer's viewpoint is not blended with another viewpoint. As the signer is not describing actions within this |kitchen|, the conceptualization of temporal progression is not relevant here.

The type of surrogate blend of interest in this dissertation is one that has |Real-Time|. |Real-Time| (or depicting time) is the result of integrating Event-Time, i.e. the temporal progression of a referent event, with Real-Time, i.e. utterance time, which is part of Real-Space. In |Real-Time| surrogate blends that describe events, an event

participant is mapped onto the signer, creating a surrogate |participant|. For example, in a description of a baseball game, a *baseball player* in the Event-Space input is mapped onto the signer in Real-Space, creating the surrogate |baseball player|. The actions made by this |baseball player| occur in |Real-Time|.

The significance of |Real-Time| in the analysis of **depicting verbs**, in particular those that depict actions, is demonstrated in this chapter. Such verbs depict one or more facets of the scenario they encode (Liddell 2003). Some citation forms of depicting verbs are shown to have |Real-Time|. That is, when such verbs are produced, a |Real-Time| surrogate blend is activated. Also described are depicting verbs **that are partitioned off** from the signer to produce depicting verbs which do not depict manual actions. These verbs can also involve |Real-Time|, and be integrated into the surrogate blend to create a **megablend**. Depicting verbs may depict a scenario that is of smaller scale than that within the surrogate blend. At the higher level of the megablend, however, such clashes of scale are resolved.

|Real Time| in ASL takes on a greater significance in Chapters 2-4, which demonstrate that |Real Time| is not merely a “discourse phenomenon” of ASL narrative structure, or limited to depicting verbs. In Chapter 2, I use a construction grammar approach to argue that |Real Time| is an essential component of aspectual constructions in ASL. Three different aspectual constructions in ASL are described. Each profiles different portions of the Event-Time of an activity. In the **protracted aspectual construction**, the central activity of the event, i.e. that occurring between the inceptive and completion points, is profiled, and a sense of protraction is also involved, i.e. doing something over time. The **pre-inceptive, protracted aspectual construction** profiles

the Event-Time before the inception of the central activity. Here the protraction is related to a scenario in which someone is fully prepared to perform an activity but is waiting for some reason. The co-production of this aspectual construction with the *effortful* NMS describes a scenario in which someone's efforts to perform an activity are met with resistance so that the inceptive point is not reached. The **goal-completive aspectual construction** profiles the Event-Time from the inceptive point to the completion point.

In the construction grammar approach taken in this dissertation, all three aspectual constructions have components that are mostly schematic. These constructions combine with citation forms of verbs that have more specific components. This integration results in not only a manual sign different from the citation form verb, but in an activation of a |Real-Time| surrogate blend as well. Because the citation form of the non-depicting verb does not have |Real-Time| structure, the aspectual expression inherits this property from the schematic aspectual construction. In this way |Real-Time| is seen to be an integral component of ASL grammar.

The analysis of the aspectual construction also reveals how essential viewpoint is in ASL. |Real-Time| surrogate blends typically map an input counterpart onto the signer to create a visible surrogate, resulting in an integration of two distinct viewpoints. This is also what occurs in the integration of the aspectual construction and the verb. The aspectual construction has a schematic |*viewpointed conceptualizer*| that is elaborated by a participant of the verb. Depending on the verb used, this results in a surrogate understood to be an |agent| performing the activity in |Real-Time| or a |patient|.

Larger constructions are examined in Chapters 3 and 4, all having an aspectual construction as one component. In Chapter 3, the **expectation-fulfillment construction**

is described. This construction allows the ASL signer to produce an expression depicting a sequence of two events in which a *|viewpointed conceptualizer|* in the first phase expects an event to occur and recognizes that event when it does. Analysis of this construction parallels in various ways with the analysis of aspectual constructions in Chapter 2. Two items make this construction special and complex. It specifies a non-manual signal, a backward head nod and an unconstricted facial expression, as a component of the construction, and this NMS and the manual sign it is associated with cannot be produced in isolation from the first phase of the construction. A related characteristic follows from this, that the two events depicted in the construction are tightly connected, making the scenario distinct from other verbs produced in succession which merely depict a succession of events.

The backward head nod (labeled the *ah* NMS) and the *effortful* NMS, which is typically required when the *|viewpointed conceptualizer|* is exerting physical or mental effort during the first phase of the construction, are demonstrated to have metonymic associations with physical domains. The *ah* NMS is similar to a gesture one might use (or imagine someone using) when, say, finding an item that is the object of a protracted search. In most expectation-fulfillment expressions, the *|viewpointed conceptualizer|* is not necessarily understood to have physically produced this gesture. Rather, this NMS reflects the psychological state of this surrogate entity. This is similarly analyzed for the *effortful* NMS.

|Real Time| and NMS are also components of **constructions that depict gradual changes of state** described in Chapter 4. One construction involves an aspectual verb form followed by a sign indicating the end state: a slow, forward head nod produced near

the end of the production of the aspectual verb form. The conclusion of this head nod coincides with the last segment of the sign indicating the end state, e.g. FINISH or WORN-OUT. This head nod is argued to be the result of iconic-metaphorical mappings, and, like the backward head nod described in Chapter 3, cannot be produced outside of the construction. A set of expressions that are associated with a scenario involving physical debilitation is also described in Chapter 4. These include a gradual change of facial expression as well as a sideways head tilt, which is associated with one body posture linked with the domain of physical debilitation. The third construction analyzed appears to involve a NMS related to the *ah* NMS but produced slower. This NMS is analyzed to be the |viewer's| recognition that the change process has reached a point in which a new state is assured. The forward head nod here coincides with the "arrival" of the new state. Also discussed in this chapter is the possibility that the signer's viewpoint is projected into the blend independent of other viewpoints, as in the expression describing a freezing of a body of water over time until it becomes solid.

Chapter 5 is intended to further characterize these complex constructions. Post-verbal nominals generally do not appear in these constructions, a characteristic not specific to these constructions but more general to ASL. Semantic characteristics of and constraints on English resultatives discussed by Goldberg (1995) and Boas (2003) are applied to the types of expressions analyzed in previous chapters. Different verb sequences in ASL used to describe cut and break scenarios reveal alternative ways ASL signers use |Real Time| in such descriptions.

2.0 General comments: iconicity and verb sequences

ASL, and likely all natural signed languages as well, are driven to depict. In fact, all languages are driven to depict—but, as Taub (2001) so well lays out for us, signed languages do it more iconically. One important aspect of this is signed languages' more complex and pervasive capacity for |Real Time| blends. Signed languages have not only verbs that depict but larger constructions that have |Real Time|, a |*viewpointed conceptualizer*|, and NMS as components having iconic characteristics. While just a handful of such constructions are analyzed in this dissertation, I assume many others exist in the grammar of ASL and that, in fact, |Real Time| structure is a pervasive aspect of ASL grammar. These also deserve a cognitive linguistic examination, which allows the researcher to describe complex facets of ASL grammar without ignoring or devaluing iconicity. Cognitive linguists have no difficulty with iconicity, even in spoken languages, and detailed descriptions of conventional ways in which iconicity shows up in ASL have been provided in recent years. Liddell (1995, 2003) describes a variety of ways signers map concepts onto their bodies and space to create different Real-Space blends. Taub (2001) describes how ASL makes use of iconic mappings in the expression of metaphor. Building on their approach as well as those of other cognitive linguistics, I have described different instances of iconicity in this dissertation using cognitive linguistic notions. Metonymy and metaphor are shown to underlie different conventional NMS in ASL. The *ah* NMS, the *effortful* NMS, the slow, forwards head nod all have an experiential basis and make use of iconic mappings.

From previous applications of conceptual blending, metaphor, and metonymy to ASL, we have a pretty good idea of the range and variety of iconic conventions in ASL.

In Chapter 1, I have described different clines exhibited by various ASL verbs, and it appears to me that there is more to say about iconicity in signed languages. The discussion in this dissertation involves iconicity within schematic constructions. The production of ASL expressions that describe complex events instantiate these constructions, and it is very interesting to learn that iconicity can be associated with the more abstract, conventional items in ASL grammar. Perhaps in the near future we will be able to describe in sufficient detail how larger ASL constructions like the expectation-fulfillment construction fall on a cline of iconicity.

It is hoped that this investigation of |Real Time| in ASL constructions will lead to further, fruitful work on the use of ASL verbs to describe events. For example, as suggested earlier in the dissertation, the constructional approach adopted is likely to lead towards a greater understanding of serial verbs and related constructions in ASL. Supalla (1990) describes examples of how serial verbs produced in sequence describe actions occurring simultaneously. This appears to be different from most of the constructions described in this dissertation, which have a single temporal progression represented in a continuously activated |Real Time|. Some constructions described in Chapter 5 appear to depict twice the temporal point of a change-of-state scenario, first to depict the causing event and then to depict the resulting change. These three conventional ways (and possibly more) to describe complex events involve different, overall |Real-Time| character, e.g. continuous or discontinuous. Some verb sequences describing causation have the signer representing one surrogate when the first verb is produced and switch to another when the second is produced. In some cases, it is clear that the switch requires repeating a portion of depicting time. This issue would need to be addressed in the study

of ASL serial verbs. In spoken languages, some serial verb constructions are understood to describe a tightly integrated event. How |Real Time| is construed and whether it is seen to be continuous are likely to be important questions in the analysis of ASL serial verb constructions.

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