Sandwich Constructions and Narrative Coherence in ASL Storytelling

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Abstract

In general, while sign language storytelling and spoken language storytelling share many larger-scale narrative strategies such as parallelism, repetition, and meta-narrational devices, the visual-spatial modality of sign languages offers a very different manner of conveying action and developing narratives on a smaller scale than does the aural-oral modality (Cook 2011). Part of this difference stems from the presence of visually illustrative structures in sign languages, including embodied role-shifting and classifier constructions. This work will examine how a particular syntactic structure involving these illustrative components, here called “sandwiching,” is used as a narrative strategy in American Sign Language (ASL). The structure consists of a combination of signing methods arranged in an ABA sequence, where A and B are each instances of embodiment, frozen signs, or classifier constructions. It will be argued that in ASL storytelling, these ABA structures are employed largely to develop and maintain narrative coherence, defined as the achievement of consistency and continuity of various kinds of narrative information, including spatial and temporal structure (Perniss 2007).

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1 Introduction

Sign language literatures have very different sets of tools for dramatically conveying narrative information than those used in spoken languages. Cinematic techniques, such as zooming, panning, and showing a variety of perspectives, are often employed to maximize the volume and detail of the information conveyed about an individual event (Cook 2011; Bragg and Bergman 2002); however, this amazing potential for visual detail must be balanced with efficiency and ease of articulation, as well as the short term memory limits of the audience. In sign language storytelling, there is a tension between simultaneity and sequentiality of articulation, as simultaneity may be more accurate in conveying temporally simultaneous events and is also temporally efficient, but is constrained in terms of how much information can be conveyed at once and may be more difficult (or impossible) to articulate (Napoli & Sutton-Spence 2010). This tension has motivated a large portion of the investigation in this work, looking at when, why, and how ABA repetition structures (see below) are employed in storytelling in American Sign Language (ASL).

In general, while sign language and spoken language storytelling share many larger-scale narrative strategies such as parallelism, repetition, and meta-narrational devices, the visual-spatial modality of sign languages offers a very different manner of conveying action and developing narratives on a micro level than does the aural-oral modality (Cook 2011). Two important aspects present in sign languages but not spoken ones are manual classifiers and embodied role-shifting, both of which can be used productively to convey specific visual details in narratives. Classifiers and embodiment are discussed in detail in Section 2.1. They can be combined in a variety of syntactic structures along with frozen signs to produce different narrative effects. Frozen signs, or lexical signs, are signs with a fixed form, which could be listed in a dictionary with a given set of properties. This work will specifically examine the strategy of
sandwiching these different methods of conveying information, and will investigate the semantic implications of and possible motivations for these sandwiches. "Sandwiching" here means the use of constructions which have the structure ABA, where A and B are instances of embodiment, classifiers, or frozen signs. In many cases, these constructions also consist of some non-manual articulation (such as partial embodiment) held fully throughout the sandwich. ABA constructions involving operators (including determiners, interrogatives, quantifiers, etc.) such as WH-doubling and structures such as [ASK proposition ASK] have been specifically excluded, as these are syntactically driven rather than employed for descriptive narrative purposes (see Abner 2011 for discussion of WH-doubling in ASL; Petronio and Lillo-Martin 1997 and Neidle et al. 2000 for analysis of operator structures; Radford 2009 for introduction to operator movement).

The focus of this work is on structures produced with “illustrative intent,” or “iconic intent” as defined by Christian Cuxac for French Sign Language (LSF) (see Sallandre 2007 for discussion of Cuxac’s terms). In other words, none of the sandwiches addressed in this work contain solely frozen signs; they all employ classifiers or embodiment (often both) to convey visual details in an imagistic manner. As the focus of this work is semantic, and largely pragmatic, syntactic analyses of the “non-illustrative” structures would be a divergence. Research on “verb sandwiches” will be discussed briefly in Section 2.5 to clarify that these are different structures from the sandwiches which will be discussed here; while they use similar terminology, verb sandwiches are not actually ABA structures the way they are defined in this work. Given the relatively large volume of research on verb sandwiches in comparison with the kinds of sandwiches discussed here, some disambiguation will be useful.

This work will use research on simultaneity in sign languages to contrast the usage of ABA structures with simultaneous structures (Sallandre 2007; Napoli & Sutton-Spence 2010).
Structures of the form ABA would seem on the surface level to violate the principle of quantity as they repeat a previously articulated segment exactly, seemingly not adding any new information; however, they appear frequently in ASL narratives, so evidently there are other forces driving their usage (see Horn 1984 for background on discourse constraints, including the principle of quantity). Physical, cognitive and linguistic limitations force storytellers to express some simultaneous events with non-simultaneous articulations (Napoli & Sutton-Spence 2010). One such possibility is the encapsulation of a single moment in a sandwich of signs In addition to presenting simultaneous events with detail and clarity, some sandwiches are used to retain spatial coherence when switching perspectives (see Meurant 2008 for treatment of ABA structures in French-Belgian Sign Language (LSFB), Perniss 2007 for treatment of spatial coherence in German Sign Language (DGS)). A variety of examples of sandwich structures are presented in Section 4. Ultimately, the goal will be to argue that in ASL, ABA structures are employed largely to develop and maintain narrative coherence. Narrative coherence is the achievement of consistency and continuity of various kinds of information, such as referent identification, temporal structure, causal structure, and spatial structure (Perniss 2007). This work focuses in particular on the relationship between various ABA structures and the maintenance of spatial and temporal coherence.

Section 2 of this work lays out some important definitions and analysis, describing the uses of embodiment and classifiers in ASL, different kinds of signing perspective, the ideas of spatial and temporal coherence and how they are maintained, and disambiguating the "verb sandwich" in ASL and other languages from the sandwich constructions examined here. Some of the research drawn upon here was carried out on other sign languages. For most of this research, the assumption here is not that it necessarily applies to ASL as well, but rather the goal is to use
it as a theoretical framework through which to examine whether ASL works the same way. Following these sections of background and theory, Section 3 describes the methods used for gathering, transcribing, and analyzing the data used in this work. Section 4 presents specific examples of sandwiches and uses ideas of spatial and temporal coherence to analyze the effects of, and possible motivations for, these constructions. Section 5 draws final conclusions, discusses limitations of the corpus and analysis, and presents ideas for future research.

2 Background Information & Theoretical Basis

2.1 Embodiment & Classifiers: Constructing Perspectives

Before continuing, it will be important to define the terms related to the types of embodiment and classifiers that will be discussed in this work, and to briefly examine how they demonstrate different perspectives and physical properties. There have been many different terms used to discuss embodiment, or what is often generically called “role-shifting” (Meurant 2008). The terms contain some theoretical distinctions in the sense of how the role-shifting is approached and analyzed (Meurant 2008), but these differences in approach will not be relevant to the descriptions in this work. Here the term embodiment will be used exclusively, with the sense used by Napoli & Sutton-Spence (2010); i.e., embodiment is when a character or subject is mapped directly onto the signer’s body, so that “the signer’s mouth becomes the subject’s mouth, the signer’s eyes become the subject’s eyes, and so on” (p. 648). Both full embodiment, as described in this definition, and partial embodiment, where only part of the signer’s body represents the character, will be referenced.

Meurant (2008) defines role shift forms as person neutralization forms: underspecified, unmarked for person, and thus suitable to refer to any character. She argues that embodiment forms thus have a multiplicity of referential interpretations, which are narrowed down by the
specific syntactic context in which they appear. This partial dependence on syntax for interpreting embodied forms provides motivation for examining ABA structures which involve embodiment, and the meanings this syntactic pattern can produce in using these forms.

Classifiers are also underspecified linguistic forms until realized in an articulation (Pfau et al. 2012), but they differ greatly in form and function from embodiment constructions. Classifiers generally have a fixed handshape (and sometimes orientation), but the path of movement and the location are free parameters; they are chosen in order to convey the desired information (Pfau et al. 2012, Liddell 2003b). In other words, classifier constructions are formed to “represent entities by denoting salient characteristics” (Pfau et al. 2012, p. 158). Examples of classifier constructions are shown in Fig. 1 below.

A wide variety of sign research has broken the set of classifiers down into categories based upon how the classifiers depict referents (Perniss 2007). There are three types of classifiers which will be referred to in this work: entity, handling, and limb classifiers. For entity classifiers, the entirety of a referent is represented by the signer’s hand(s) (Perniss 2007) (see Fig. 1a). With handling classifiers, the shape of the hand(s) represent the way in which a referent is held or used as an instrument (Perniss 2007) (Fig. 1b). Finally, for limb classifiers, the hand(s) represent body parts of animate referents, often legs and other body parts which may not be represented with the linguistically allowed articulators (Perniss 2007) (Fig. 1c). Classifiers are present in a large fraction of the sandwiches presented in this work thus understanding how they can convey distinct perspectives is necessary for the upcoming analysis.
2.2 Character vs. Observer Perspective

Classifiers and embodiment are paramount in this work because they are used to construct different perspectives. Different perspectives, while common in discourse, are especially widely used in narratives as part of the cinematic style introduced above (Cook 2011). In describing perspectives the terminology of Perniss (2007) will be used, differentiating between “character perspective” and “observer perspective.” These perspectives depend on the type of information expressed, the size of the space in which it is expressed, the vantage point on the expressed event, and the particular forms used to express referents. The different perspectives are classified especially by the role of the signer with respect to the conveyed event. Character perspective is when the signer is conceptualized as being within the space of the event, essentially playing the part of the character as if on stage (Perniss 2007, p. 1316). In character perspective, events and attitudes are produced on a life-size scale, on and around the signer’s body. In object perspective, the signer is outside of the event (conceptually), more like a puppeteer who manipulates characters and shows events on a reduced scale in front of the body (Perniss 2007, p. 1317).
Perniss mentions a variety of different names that have been given to similar categorizations of perspective in sign languages, and even for co-speech gestures as well (Perniss 2007; see Emmorey & Falgier 1999 on viewer versus diagrammatic spatial format; Liddell 2003a on surrogate versus depictive space; Dudis 2004 on participant versus global viewpoint; Morgan 1999 on shifted versus fixed referential framework; Slobin et al. 2003 on protagonist versus narrator perspective; and McNeill 1992 on character versus observer viewpoint in co-speech gestures.) The distinctions between these various classification systems will not be important for my analysis: the significant thing will be that there are two different perspectives which storytellers switch between (and blend together) in order to convey events. A large portion of the sandwiches which will be examined here involve, and are motivated by, perspective shifts, and the need to retain clarity as details are offered on different scales.

Some classifier constructions are suited to character perspective, such as handling classifiers, while others are more suited to observer perspective, such as entity and limb classifiers; however, classifiers may be used in perspectives which they do not conceptually match, either for the sake of efficiency or to fulfill informativeness constraints (Perniss 2007; see Horn 1984 for the specifics of discourse constraints). Perniss discusses the alignment of the use of different perspectives and types of classifiers in German Sign Language (DGS) as "prototypical" or "non-prototypical" based on whether the classifiers are conceptually aligned with the type of perspective being used (e.g., handling classifiers used in observer perspective would be non-prototypical alignment) (Perniss 2007). Perniss found that for DGS both prototypical and non-prototypical alignments are used in extended discourse: there is a tension here between the audience or interlocutor's coherent conceptualization of space and the desire for efficiency of expression, with different constructions produced depending on the potential
interactions of these constraints. A variety of constraints and motivations shape how classifiers and embodiment are combined in different conceptual blends and syntactic structures in narratives.

2.3 Spatial Coherence

Spatial coherence is a sub-area of narrative coherence, as defined above. It is an essential part of most successful narratives, as in order for an audience to follow a complex event, they must develop a mental representation of the described spatial layout and the spatial relationships among participants in the event, such as characters, objects, and locations (Perniss 2007). Constructing a mental representation of the conveyed event requires knowing where the participants are relative to each other and integrating the described actions and movements into a full picture of the event and its surroundings (Perniss 2007). The success of this process relies largely on a storyteller’s maintenance of spatial coherence in using lexical and grammatical cues to provide information about where characters are and where events are taking place. In sign languages, this is carried out primarily through the use of classifier constructions and signing perspective (Perniss 2007).

Perniss discusses how the organization of different perspective types, i.e., character and observer perspective, is important for maintaining clarity of spatial relationships and positions. While of course there is no single way to maintain this clarity, one common way that she discusses involves the sequential organization of prototypical alignments, switching from observer perspective to character perspective, then switching back to observer perspective in order to indicate a change in location or orientation of a referent. She argues that the location and orientation information given in the initial observer perspective segment remains valid through the switch to character perspective, but changes must be indicated by a return to observer perspective. This particular use of prototypical alignments serves to structure perspectives and
thus the overall communication of spatial relationships in a sequential manner; it is clear that
sandwich constructions could develop easily from this tendency, as a tool for spatial coherence.
In Sections 4.1-4.2 below, individual examples of perspective-shifting sandwiches will be
described.

2.4 Temporal Coherence: Simultaneity vs. Sequentiality

Temporal coherence can be defined as a sub-type of narrative coherence analogously to
spatial coherence: temporal coherence is the maintenance of clarity of when various events
occur, including the order, overlap, or simultaneity of actions or perspectives. Temporal
coherence is important for understanding causal relationships between events and for following
overall narrative arcs. In sign languages, where simultaneity of expression is possible, there can
be tension between simultaneous and sequential expression of events; simultaneity is efficient
and useful for representing simultaneous events but can greatly increase cognitive load for both
signer and audience or interlocutor (Napoli & Sutton-Spence 2010). Where do sandwich
constructions (inherently sequential) come in? What factors allow them to overcome their
relative inefficiency to be used frequently as a narrative tool?

Research on simultaneity and the physical and linguistic limits on simultaneous
constructions can give us insight into why sandwiching techniques might be desired in narratives
(Sallandre 2007; Napoli & Sutton-Spence 2010). Simultaneous constructions are structures
where multiple propositions are expressed at the same time, proposition here being defined
loosely as a predicate and its set of arguments, as in Napoli & Sutton-Spence (2010). A
simultaneous construction could thus consist of a classifier predicate at the same time as a (one-
handed) frozen sign, or a classifier at the same time as embodiment, showing two perspectives of
the same scene, or other such combinations (Napoli & Sutton-Spence 2010). Physical and
linguistic limitations compel storytellers to express some simultaneous events with non-
simultaneous articulations; sandwiching is one way to express temporal simultaneity without losing narrative coherence (Napoli & Sutton-Spence 2010).

Napoli & Sutton-Spence discuss how the limits they found on simultaneous constructions do not follow simply from physical limitations – the upper limit stems not from the number of articulators but rather from motor coordination, perception, and linguistic limits. In this work, the reasons for the limitation on simultaneous constructions are less significant than the simple fact that they are limited. There is naturally a desire in narrative to express temporally simultaneous events, and if simultaneous articulation is undesirable or impossible for a given set of propositions, the storyteller must look to other syntactic constructions in order to fulfill this need.

Napoli & Sutton-Spence mainly analyze why there is an upper limit on how many propositions can be expressed simultaneously; however, they do not directly address why sequential constructions may be used even when simultaneity is possible. We look to Bo (2010) and her analysis of Supalla (1990) to examine the preference for sequentiality. Bo quotes Supalla’s statement that:

(…) sequential structure sometimes exists in ASL even when the modality would permit simultaneity. The existence and nature of these structures in ASL, then, suggest that languages have strong tendencies toward serialization, and strong similarities in the way simultaneous referent properties should be represented sequentially in a sentence – not only in spoken languages, but in signed languages as well (Supalla 1990, p. 152).

While this fact does not directly motivate the presence of sandwiching, it does show that breaking up simultaneous information to convey it in sequential segments is quite common (Bo 2010); the task for languages is then to develop ways of showing that this information is in fact simultaneous within the narrative flow. Various subsections of Section 4 will motivate the use of sandwiches to show simultaneity with in-depth descriptions of individual examples.
2.5 Verb Sandwiches: An Aside

Finally, before moving on to presenting the methods used in this study and specific examples of sandwich constructions, it will be helpful to disambiguate them from the previously studied "verb sandwiches." Previous work on a variety of sign languages has analyzed these constructions called "verb sandwiches," where a verb is repeated twice in one sentence separated only by an object or sentential adjuncts (see Fischer & Janis 1990 on ASL; Bo 2010 on Norwegian Sign Language (NTS); Vermeerbergen & Leeson 2011 on Croatian Sign Language (HZJ) and Flemish Sign Language (VGT), etc.). While the structure of verb sandwiches is similar to the structure of the sandwich constructions in this work, the forms of the constituents, and thus the analysis, turn out to be rather different. Verb sandwiches are not illustrative structures like those which will be presented below; rather than showing different perspectives on an event or showing simultaneity primarily through embodiment or classifiers, verb sandwiches tend to give different information in the two verbs through inflected and uninflected lexical signs, and sometimes classifiers (Fisher & Janis 1990). For this reason, the analysis of verb sandwiches has been largely syntactic, while the focus here on sandwich constructions will be largely semantic, examining the illustrative nature of these structures as narrative devices.

An additional factor separating verb sandwiches from the sandwich constructions here is that, in ASL, the two verbs in a verb sandwich may not be identical copies of each other; the second verb must have different inflection than the first (Fischer & Janis 1990). While this is not the case in some other sign languages, such as in NTS or HZJ (Bo 2010; Vermeerbergen & Leeson 2011), the analysis of verb sandwiches in ASL is largely separate from the analysis of the sandwiches in this work, as those discussed here all consist of identical copies. In this work, "identical" means all of the signing parameters (handshape, movement, orientation, location) and non-manual articulations (such as facial expression, posture, mouth movements) are the same,
within an acceptable range of imprecision in the articulation. "Identical" copies may have different lengths, assuming they are not frozen signs with fixed lengths.

3 Methods

3.1 Corpus & Data Selection

The following sections of this work (Sections 4.1-4.5) present a variety of individual sandwiches collected from a corpus of existing videos of professionally produced storytelling. The stories include “The Legend of Sleepy Hollow” produced by Master ASL! (2013) and told by Travis, and several stories produced in the “Four For You: Fables and Fairy Tales” series (Sign Media, Inc. 1988). These include “The Sun and the Wind,” and “The Mice and the Weasels,” told by Patrick Graybill, “The Twelve Princesses,” and “The Bear and the Bees,” told by Freda Norman, and “Little Red Riding Hood” and “The Milkmaid and Her Pail,” told by Mary Beth Miller. In total, this is around 30 minutes of video, in which we found 17 sandwiches with illustrative intent. The data examined in Sections 4.1-4.5 are a sample of the total set of sandwiches found, chosen to illustrate the various forms and functions that these sandwiches can take on.

The data were collected simply by attentively watching each of the stories, noting the timestamp range for each sandwich, along with a detailed description of the articulations in the sandwich. It is certainly possible that the 17 examples mentioned above are not an exhaustive list of the sandwiches used in these stories; however, this will have little effect on the analysis presented below, as no attempt is made to quantify the frequency with which the kinds of sandwiches are used. It is already clear from this lower limit on the number of sandwiches in these stories that this structure is not anomalous, but rather a commonly used narrative technique.

1 The video is available only on the Master ASL! Facebook page; https://www.facebook.com/LearnASL/
2 No information is available about a last name for the storyteller
3.2 Data Transcription & Analysis

After finding the sandwich constructions in these stories, the sandwiches were labelled with the type of articulations used, such as CL1-CL2-CL1 for a sandwich which consists of two different classifier constructions (see Section 4.4 for examples) or RS-frozen-RS for a sandwich which consists of embodiment (role-shift) and a frozen sign (see Section 4.3 for an example). Following this, categories were developed to help organize the sandwiches in terms of their overall usage within the narrative; i.e., their narrative effect and structure. These categories are discussed below, and are examined in detail in the individual data sections (Section 4.1-4.5). It should be noted that these categories are largely for organizational (in addition to some linguistic) purposes and the boundaries between the categories are not strict. The goal was not to strictly subcategorize these sandwich types as the purpose of such a categorization is unclear, but rather to get an idea of the extent of the uses of these structures, both in terms of their components and in terms of their pragmatic effects in maintaining narrative coherence.

After selecting which examples to discuss further in this study, these examples were glossed using a multi-line system, meaning that a separate line of glosses is given for each hand and one or more lines are given for the non-manual articulations. Some of the glossing conventions were adapted from examples in Pfau et al. (2012, pp. 1056-1067); all of the conventions used in this work are listed in the Appendix. Given the difficulty of briefly glossing embodiment constructions, the glosses given below do not capture the entirety of the linguistic details of these constructions. Detailed descriptions of the important portions of the sandwiches are offered after the glosses and a screenshot of each portion of each sandwich is given as well. The screenshots are vertically aligned with the corresponding portions of the glosses. An approximate English translation of the sandwich is given as a caption to these screenshots. The
sandwiches are also oriented within the narrative context, as the analysis of the sandwich’s contribution to various aspects of narrative coherence relies largely on this context.

4 Data & Results

Specific examples of sandwiching are presented below, organized by type of sandwich. The sandwiches have been broken down into the following categories, which are defined within each section: scale-alternation sandwiches, bi-perspective sandwiches, lexical interjection sandwiches, two-character (classifier) sandwiches, and extended sandwiches. The final segment of this section discusses the trend across these data of non-manual articulations being held throughout the sandwiches, which offers evidence that these sandwiches should be treated as units.

4.1 Scale-Alternation Sandwiches

Many of the sandwiches found in this corpus are used to show multiple perspectives of single events. Some of these fall into the category of ‘scale-alternation structures’ addressed by Meurant (2008) for LSFB, where there is a succession of three verbs, the first and last of which are identical. One of the two distinct constituents shows the path of the movement and the other shows the agent’s expression and body positioning during the movement (Meurant 2008). These structures are called scale-alternation structures because the agent is shown as a scale model, usually with a limb classifier, and in “real” size through embodiment. (Note that the storyteller could be embodying a non-human character, and thus real size simply means a close-up of the character rather than viewing the character from a distance). The organization of the structure, Meurant argues, allows the audience or interlocutor to interpret the embodiment and classifiers together, which would otherwise be underspecified and could refer to any referents; the sandwich structure ties the agents of the two portions together (Meurant 2008).
An example of a scale-alternation structure given by Meurant for LSFB is shown below in Fig. 2. The scale-alternation portion is the last three panels in the figure. The A segment consists of a 2-handshape classifier representing two boys moving by at a distance, while the B segment is the sign \textit{WALK}, along with an embodiment of the boys’ facial expressions and posture (Meurant 2008). The sandwiching of the two perspectives allows the classifier construction and the middle segment to be interpreted as having the same agent, showing two complementary views of the same action. The classifier construction shows the path of movement, and the middle section, with the combination of the lexical sign and non-manuals, show the style of movement (walking) and the characters’ attitude and posture (Meurant 2008).

\textbf{Fig. 2:} An example of a scale-alternation structure in LSFB, given by Meurant (2008); the scale-alternation is shown in the last three panels, labeled A-B-A (labels are mine).
An example of a scale-alternation sandwich in ASL is shown below in Fig. 3. This example is from “The Sun and the Wind.” In this part of the story, the storyteller shows a man walking against a strong wind, moving slowly forward and wrapping his coat tightly around him. This segment of the story can be minimally glossed as (see Appendix for glossing conventions):

<table>
<thead>
<tr>
<th>RH</th>
<th>RS:“wrapping coat across chest”</th>
<th>1-CL:“walking”</th>
<th>RS:“wrapping coat across chest”</th>
</tr>
</thead>
<tbody>
<tr>
<td>LH</td>
<td>RS:“wrapping coat across chest”</td>
<td>1-CL:“walking”</td>
<td>RS:“wrapping coat across chest”</td>
</tr>
<tr>
<td>NM</td>
<td>RS:[hunched shoulders, bowed head]</td>
<td>-----------------</td>
<td>---------------------------------</td>
</tr>
</tbody>
</table>

Fig. 3: Scale-alternation; A man walks with his coat wrapped tightly around him.

In more detail, the storyteller does this by first embodying the man, wrapping his arms across his chest, hunching his shoulders and bowing his head, then switching to limb classifiers (two I-handshapes with the extended first finger pointing down) showing the forward movement, then returning to the identical initial embodiment. He holds onto part of the embodiment – in his shoulders and bowed head – throughout the full ABA structure. We can see that this structure shows two important details of the event by using two perspectives, showing the wrapping of the coat against the wind life-sized and showing the forward movement with a scale model. The initial embodiment introduces the referent for the classifiers, then the classifiers show forward movement which cannot be expressed directly through embodiment. The repetition serves to relate the two perspectives and show that they both describe the same character and event, as well as ensuring a clarity of perspective as the storyteller moves on in the story.
A similar example of a scale-alternation sandwich in ASL is shown below in Fig. 4. This example is from “The Legend of Sleepy Hollow.” The sandwich is glossed as:

<table>
<thead>
<tr>
<th>RH</th>
<th>RS: &quot;flailing, off-balance&quot;</th>
<th>V-CL: &quot;man falling&quot;</th>
<th>RS: &quot;flailing, off-balance&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>LH</td>
<td>RS: &quot;flailing, off-balance&quot;</td>
<td>Flat-B-CL: &quot;ground&quot;</td>
<td>RS: &quot;flailing, off-balance&quot;</td>
</tr>
<tr>
<td>NM:</td>
<td>RS: [mouth open, eyebrows up]</td>
<td>[clenched teeth]</td>
<td>RS: [mouth open, eyebrows up]</td>
</tr>
<tr>
<td></td>
<td>RS: [head turned to right]</td>
<td>[head forward]</td>
<td>RS: [head turned right]</td>
</tr>
<tr>
<td></td>
<td>RS: [leaning backward]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

![Fig. 4: Scale-alternation; A man is scared and falls backward.](image)

The storyteller begins with embodiment to show with the lean of his body and his facial expression that the character is falling backwards with fear, breaks out of this to show the fall with classifiers, then returns to the embodiment. In the first segment, the storyteller turns his head to his right, opens his mouth and raises his eyebrows while also leaning backward and lifting both hands in 5-handshapes to about waist height and cycling them backwards with out-of-phase movement (i.e., flailing to show that he is off balance). This segment conveys the character noticing the Headless Horseman, getting scared and starting to fall in response. The middle segment is comprised of a two-handed classifier construction clearly showing the character falling completely backward onto the ground. The storyteller uses an inverted V-handshape above a flat-B-handshape oriented with the palm toward the ground; the V-handshape represents the character’s legs and is shown falling backward onto the non-dominant hand. During this middle articulation, the storyteller breaks partially out of the embodiment, turning his face back toward the audience (camera) to make eye contact while showing the fall. His face is
still expressive, with engaged facial muscles and clenched teeth; however it appears that this is the storyteller’s expression as the narrator, expressing concern and fear for the character in danger, rather than a shift in the character’s expression. This is clear because when the storyteller begins to turn his head back to the side to repeat the first segment and complete the sandwich, he immediately re-inhabits the character’s original expression, mouth open and eyes wide, expressing fear and shock rather than concern.

The insertion of the middle segment of the sandwich within the embodiment serves to convey movement that cannot reasonably be embodied – the character falling over. In this case, linguistic (and practical) constraints on full-body movement require the switch to observer perspective, or a ‘scale model,’ in order to convey the act of falling over. We see in these two examples above that the need for clarity and coherence in narrative and the desire to be informative may override the desire for efficiency.

The scale-alternation sandwiches defined by Meurant are the only type of illustrative sandwich that I found discussed in the literature (and only for LSFB). The following categories of sandwiches were all defined specifically for this work, based upon the main types of sandwiches found in the data.

4.2 Bi-Perspective Sandwiches

The sandwiches in this section also show two perspectives on a scene, but they do not follow the exact formulation of scale-alternation structures as defined by Meurant, as scale-alternation structures specifically involve showing a movement path in one segment and a posture or attitude in the other segment (Meurant 2008). Additionally, scale-alternation structures must have the same agent for both segments (Meurant 2008). The sandwiches discussed below still give information on different scales, so it would perhaps make sense to
expand Meurant’s terminology to include the following examples, with scale-alternation sandwiches a subset of some overall category of bi-perspective sandwiches. All of these sandwiches (those shown in Figs. 3-6) use both character and observer perspective to give details on an ongoing event, sandwiching the perspectives to maintain clarity in the relationship between them.

The following example from “The Twelve Princesses,” shown below in Fig. 5, sandwiches character perspective within two instances of observer perspective in order to give an archetypal description of a group of characters, rather than embodying an individual character. In this example, the storyteller is showing that twelve princesses are lining up to talk to their father and a prince, whom they (proudly and incorrectly) believe they have duped. We can gloss this example as:

| RH  | 4-CL: "lined up" | RS: "dressed/made up" | 4-CL: "lined up" |
| LH  | 4-CL: "lined up" | RS: "dressed/made up" | 4-CL: "lined up" |
| NM  | [proud facial expression] | | [fluttering eyelashes] "preening" |

**Fig. 5: Bi-perspective;** The princesses are lined up, dressed up and fluttering their eyelashes.

In more detail, the storyteller begins with a classifier construction where both hands are in the 4-handshape with fingers pointing up. She moves her hands laterally apart to represent that there are twelve princesses standing in the line (rather than just eight, as her stationary fingers would represent). She then switches to a combination of embodiment and classifiers to describe
the princesses preening and smiling, thinking the prince does not know their secret. She moves her hands around her head, fluttering her eyelashes and gesturing to all of the adornments the princesses are wearing. She then repeats the 4-handshape classifiers, reiterating that the whole line of princesses are dressed up and preening, not just the archetypal one that she embodied. The sandwiching allows the storyteller's individual body to become representative of a group. The placement of the embodiment between the two classifier constructions showing the physical placement of the 12 princesses gives the embodiment its meaning – without the classifier constructions, this embodiment could not be understood as referring to multiple people, thus this specific syntactic construction is essential to the comprehension of this scene. This construction allows for a coherent connection to be made between embodiment, the characters the embodiment represents, and their spatial orientation in the scene.

Another example of a bi-perspective sandwich occurs in "The Legend of Sleepy Hollow." In this instance, the storyteller is showing the Headless Horseman riding his horse, reins and ax in hand. This example is glossed as:

<table>
<thead>
<tr>
<th>RH: Bent-V-CL: &quot;galloping&quot;</th>
<th>RS: &quot;holding ax&quot;</th>
<th>Bent-V-CL: &quot;galloping&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>LH: Bent-V-CL: &quot;galloping&quot;</td>
<td>RS: &quot;holding reins&quot;</td>
<td>Bent-V-CL: &quot;galloping&quot;</td>
</tr>
<tr>
<td>NM: RS: [bouncing torso] &quot;riding horse&quot;</td>
<td>RS: [puffing cheeks in and out, furrowed brow]</td>
<td></td>
</tr>
</tbody>
</table>

Fig. 6: Bi-perspective; The Headless Horseman is riding a horse, holding the reins and an ax.
The storyteller uses Bent-V-classifiers (a typical classifier for animals) to show the horse galloping, while bouncing his torso to embody either the horse and its motion or, more likely, embodying the rider, again showing the bouncing of a galloping horse. The middle portion of the sandwich shows the rider (still bouncing) and uses handling classifiers to show him holding the reins, and holding what is later shown to be an ax. The final segment is a classifier construction identical to the first. Rather than showing different perspectives of the same agent, this sandwich shows different areas of a scene to give a complete picture. While we see the torso movement of the rider throughout, the first and last segments focus on the movement of the horse, and the middle section focuses on the rider and his arms. As the Headless Horseman has no head, the facial expressions and puffed cheeks must refer to the horse throughout. In addition to giving important details about the scene (riding the horse, holding the ax), the sandwiching of perspectives give the action more length in a dynamic and interesting manner.

4.3 Lexical Interjections: Simultaneity & Continuity

An example of another kind of sandwiching is shown below in Figs. 7 and 8. Rather than switching between perspectives, this kind of sandwich involves inserting a lexical sign between two articulations of an embodiment construction (with or without a simultaneous classifier construction, see below) in order to give information which is abstract or not strictly visible, which will be here called “lexical interjection.” The first example, shown in Fig. 7, is from “The Legend of Sleepy Hollow.” We can gloss this sandwich as:
It begins with a classifier construction involving both hands to show that a character is sitting in the forest. The dominant hand is in a bent-V handshape, representing a seated person, laid horizontally on top of the non-dominant hand, which represents the ground. Simultaneously, the storyteller closes his eyes and relaxes his posture, embodying the character with his available non-manuals (see Perniss 2007 for more on blended perspective simultaneity, or ‘non-prototypical alignment’ of classifiers and embodiment). He then signs SLEEP with his dominant hand while keeping his other hand in place and retaining the embodied characteristics of the sleeping man. He finally returns his dominant hand to its original position. This sandwich uses a simultaneous construction to convey the two perspectives here, rather than sandwiching them as above; the storyteller then interjects with a frozen sign for the rest of the desired communication. Given that the storyteller’s entire set of articulators is used in the first part of the sandwich, it is clear that he must break the simultaneity in order to convey more information. Embedding SLEEP within the construction, rather than before or after, emphasizes that these signs all belong together and are describing a single event – the sandwiching preserves the narrative simultaneity.
There is an almost identical construction in Mary Beth Miller’s telling of “Little Red Riding Hood;” however, in this example, the outer portions are full embodiment rather than a simultaneous classifier and embodiment construction. This sandwich, shown below in Fig. 8, is conveying that the Big Bad Wolf is lying in Granny’s bed and waiting for Little Red Riding Hood. The sandwich can be glossed as:

<table>
<thead>
<tr>
<th>RH</th>
<th>LH</th>
<th>NM</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS: &quot;grasping covers&quot;</td>
<td>WAIT++</td>
<td>RS: &quot;grasping covers&quot;</td>
</tr>
<tr>
<td>RS: &quot;grasping covers&quot;</td>
<td>WAIT++</td>
<td>RS: &quot;grasping covers&quot;</td>
</tr>
<tr>
<td>RS: [down-turned mouth] &quot;grumpy wolf in bed&quot;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Fig. 8: Lexical Interjection;** The Wolf is lying in bed waiting for Little Red Riding Hood.

The storyteller first role-shifts into the Wolf in Granny’s clothes, showing him lying in bed with the sheets pulled up high, mouth downturned. The storyteller then signs \textit{WAIT} three times while holding the facial expression of the Wolf, then returns to the embodiment. As in the sandwich above, the storyteller inserts a lexical sign to provide additional, more abstract, information about the scene. In this case the center of the sandwich provides temporal information which, with the embodiment enclosing it, indicates that the described event is ongoing. The sandwiching serves to show the passage of time – simply holding the embodiment would be insufficient, as the passage of time in the embodied construction would correspond to real time, just as the signer’s body corresponds to the character’s body life-size. Inserting lexical signs to enhance embodied constructions is an interesting capability reserved to sign languages, where the storyteller can both “show” and “tell” about a single instance.
4.4 Two-character (Classifier) Sandwiches

Many of the sandwich constructions discussed above involve a single agent or character and show different kinds of information about an individual act; however, there are also sandwiches which show separate (but temporally overlapping) actions of two agents or characters. The repetition of the first character’s action at the end of the sandwich indicates that the first character’s action has been ongoing while the second character’s action has begun. The sandwich form allows the first character’s action to be conveyed as continuous, even though the storyteller must break out of the articulation of it in order to give other simultaneous information.

There is an example of this kind of sandwiching in “The Bear and the Bees.” An angry bee is flying in front of a bear’s face, and the bear is watching the bee’s movement very closely, afraid of being stung. The sandwich can be glossed as:

<table>
<thead>
<tr>
<th>RH: 1-CL:&quot;bee flying&quot;</th>
<th>F-CL:&quot;bear’s eyes moving&quot;</th>
<th>1-CL:&quot;bee flying&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>LH: RS:&quot;bear paw up&quot;</td>
<td>F-CL:&quot;bear’s eyes moving&quot;</td>
<td>RS:&quot;bear paw up&quot;</td>
</tr>
<tr>
<td>NM: RS:[head turned to the right, mouth open, eyes following bee]-----------------------------</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fig. 9: Two-character; The bee flies in front of the bear’s face and his eyes follow it.

The first segment of the sandwich is a classifier construction representing the bee’s flight, with partial embodiment representing the bear watching the bee with apprehension. The storyteller’s left hand is partially raised, showing the bear’s paw, and her head is turned toward her right hand (the bee), open-mouthed. In the middle segment, she uses two F-classifiers to represent the bear’s eyes rolling around trying to follow the bee’s movement. She retains the
embodiment of the bear, but the classifiers emphasize the eye movements beyond what is possible with her actual eyes. The movements of the hands are much more salient than are small eye movements. Following this F-classifier construction, she returns to the initial construction with the flying bee 1-classifier. The storyteller first sets up the bee’s movement path to give context to the bear’s eye movements as they follow the moving bee, then briefly repeats the bee’s movement to emphasize that it has been continuing the entire time. The initial switch in perspective works to set up spatial relationships in this scene, while the repetition of the original perspective sets up the temporal relationship between the perspectives. This repetition also works toward further spatial relationships in the narrative, as it sets up a reference point for the bee’s next action of stinging the bear’s face. Thus the sandwich is important as a self-contained entity and also as a component of the larger narrative comprehension.

In “The Legend of Sleepy Hollow,” the storyteller uses a two-classifier construction to similar effect, showing a spider pulsing in its web and an insect flying nearby, but the structure is developed in a slightly different way. This example can be glossed as:

<table>
<thead>
<tr>
<th>RH: 5-CL:&quot;spider pulsing in web&quot;</th>
<th>INSECT</th>
<th>X-CL:&quot;flying around&quot;</th>
<th>5-CL:&quot;spider pulsing&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>LH: 5-CL:&quot;spider pulsing in web&quot;</td>
<td>--------</td>
<td>-------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>NM: [tongue out]</td>
<td>[lips in small O-shape]</td>
<td>[tongue out]</td>
<td></td>
</tr>
</tbody>
</table>

**Fig. 10: Two-character;** The spider pulses in its web as an insect flies nearby.

The storyteller initially has both hands crossed in front of him in 5-handshapes that he bends and unbends slightly to show the spider in its web. As the storyteller sets up the ‘filling’ of this sandwich, signing INSECT with his right hand and using an X-classifier to show the insect
buzzing around, he holds his left hand in place, which serves as a spatial reference point for setting up the insect’s nearby flight. In this example, the sandwiching clearly shows simultaneity of action, and is combined with actual simultaneity of articulation to show the two characters’ locations and movement. As in the bear and bee example, the repetition of the first classifier construction is used to show that the spider’s action (and location) have been continuing as the insect’s motion has begun. The sandwiching and partial simultaneity (of articulation) emphasize the continuity of the action, simulating the effects of a fully simultaneous articulation, which would here be impossible. This second example also includes a lexical interjection to introduce the referent for the second classifier, as it is a new character. (The spider had been previously introduced with a frozen sign.) Again, we see that frozen signs are used in these constructions to give concrete or more precise information which cannot be fully conveyed with illustrative structures.

4.5 Extended Sandwiches

In addition to all of the ABA structures discussed above, there were two ABCBA structures in the stories in the corpus. Both of these extended sandwiches occurred in “The Legend of Sleepy Hollow” and will be discussed below. We would expect to find more in a larger corpus; however it makes sense that extended sandwiches would be less frequently used than simple sandwich structures, given their complexity and length.

The first example of extended sandwiching (see Fig. 11 below) shows a man hiding behind a tree and listening to hoofbeats with apprehension, as the hoofbeats belong to the horse of the Headless Horseman. The whole sandwich can be glossed as:
The first and last components of the sandwich are a tree classifier on one arm and a bent-entity classifier representing the man on the other, showing that the man is hiding behind a tree. The inner sandwich describes the man actually listening to the hoofbeats. The storyteller signs LISTENING and then uses A-classifiers to represent the hooves of the approaching horse, while mouthing the sounds they would be making, before signing LISTENING again. This sandwich can be considered a lexical interjection sandwich with further information embedded in it, visually representing the auditory input the character is receiving. Both of the middle portions are simply adding non-visual information that cannot be shown directly in the initial classifier construction which sets up the spatial orientation of the scene. While the sound of the hoofbeats is in fact shown visually through the classifiers and mouth movements, it cannot be shown simultaneously with the initial set-up as there simply are not enough articulators available. The sandwich allows for these pieces of visual and auditory information to be understood as simultaneous, or at least overlapping.
This example helps to show the extent to which sandwiching can be used for narrative and dramatic effect. The purpose of extended sandwiches may also additionally be to remind the audience of previously signed material, given the potentially lengthy nature of these constructions; in the example above, the storyteller may wish to remind us of the man’s spatial location while he is listening to the hoofbeats before moving on to express different information. The repetition helps to ground the audience so that they can easily follow the story.

The next extended sandwich is a “tri-perspective” sandwich; it is nearly identical to the bi-perspective sandwich shown in Fig. 6, both in form and content, but with slightly different details. The entire sandwich shows the Headless Horseman riding away, holding a pumpkin head and his horse’s reins, with his cape flapping (Fig. 12). This sandwich is glossed as:

<table>
<thead>
<tr>
<th>RH:</th>
<th>RS: &quot;holding pumpkin&quot;</th>
<th>Bent-V-CL: &quot;galloping&quot;</th>
<th>B-CL: &quot;cape flapping&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>LH:</td>
<td>RS: &quot;holding reins&quot;</td>
<td>Bent-V-CL: &quot;galloping&quot;</td>
<td>B-CL: &quot;cape flapping&quot;</td>
</tr>
<tr>
<td>NM:</td>
<td>[down-turned mouth]</td>
<td>[mouth makes hoofbeat sounds]</td>
<td>[lips in small-O shape]</td>
</tr>
</tbody>
</table>

**Fig. 12: Extended;** The Headless Horseman rides away holding a jack-o-lantern and the horse’s reins, with cape flapping.
The storyteller first embodies the Horseman, with one hand in a bent-5-handshape palm up to show him holding the pumpkin and the other in an A-handshape to show him holding the reins. The storyteller then uses bent-V-classifiers as above to show the horse galloping. He then flaps two B-handshapes behind his shoulders to evoke a cape flapping in the wind. He returns to the bent-V’s and then back to the pumpkin-holding-embodiment. This extended sandwich serves dual purposes of describing the Horseman in detail and of dynamically showing that the Horseman is riding for an extended period of time. It is clear that the storyteller does indeed intend for this to be read as an extended period of time since following this sandwich, he shows that the horse continues galloping and the Horseman and horse disappear into the distance. The use of sandwiching showing different areas and views of a scene allows the storyteller to convey temporal information about the length of an action in a visual manner, rather than using lexical signs to quantify the time. The switches in perspective add visual interest and allow the storyteller to stay within the cinematic style of storytelling.

4.6 Consistent Non-manuals

Throughout the data presented above, there is a common thread of non-manual articulations, particularly facial expressions, being held throughout the sandwiches. Out of the 10 examples presented in detail, 8 have at least one non-manual articulation which extends completely throughout the sandwich. One other has at least partial overlap of a non-manual articulation. The most commonly held non-manual is facial expression, but body position (e.g., hunched shoulders in “The Sun and the Wind,” the direction of the bear’s face and gaze in “The Bear and the Bees,”) and body movement (e.g., bouncing of the torso in two of the “The Legend of Sleepy Hollow” examples) frequently follow the same pattern. What we are largely seeing is a tendency to hold onto partial embodiment during other portions of the sandwich; different parts
of the embodiment are dropped depending on which articulators are needed to fully convey the other information about the scene.

There are only two examples with clearly distinct, intentional articulations of the face, with no other shared non-manual articulation throughout the sandwich. In “The Legend of Sleepy Hollow” example with the spider and fly (see Fig. 10 above), the storyteller has his tongue stuck out when he is representing the spider, but switches to forming a small O-shape with his lips when signing the insect’s movement, representing the smallness of the bug. In this case we see that the storyteller is using mouth gestures to give details about the different characters (see Boyes-Braem & Sutton-Spence 2001 for details on the use of the mouth in sign languages). The presence of mouth gestures to give additional information such as differentiating between characters may override the tendency to hold non-manuals throughout sandwiches, as the lexical information they present may be more important than the cohesion and continuity of the sandwich. Additionally, in this case, the left hand is held in place throughout the sandwich, which still serves to hold the sandwich together as a unit, so the cohesion is not lost through the different facial movements.

The other example where there are shifts in the facial articulations with no other shared non-manual articulation is the extended sandwich above where there is a man hiding behind a tree and listening for hoofbeats (see Fig. 11). While the first two (and thus last two) segments have the same facial expressions, of the man looking around scared, mouth open, the middle segment with the hoofbeats has a different expression – the ominous expression which is paired with the horse and Horseman in other parts of the story (see Fig. 6) – along with mouth movements evoking the sound of the hoofbeats. Again, we find that the facial non-manuals shift when they are offering further information.
Of course, there are other sandwiches which have shifts in facial expression, as discussed above, but these all have other non-manual articulations which extend throughout, maintaining the cohesion of the sandwiches. Other than the two examples given above, all of the sandwiches in the data set have clear shared non-manual articulation extending throughout. This trend in the data supports the idea of examining these sandwiches as units.

<table>
<thead>
<tr>
<th>Sandwich Type</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fig. 3 Scale-Alternation</td>
<td>A man walks with his coat wrapped tightly around him.</td>
</tr>
<tr>
<td>Fig. 4 Scale-Alternation</td>
<td>A man is scared and falls backward.</td>
</tr>
<tr>
<td>Fig. 5 Bi-perspective</td>
<td>The princesses are lined up, dressed up and fluttering their eyelashes.</td>
</tr>
<tr>
<td>Fig. 6 Bi-perspective</td>
<td>The Headless Horseman is riding a horse, holding the reins and an ax.</td>
</tr>
<tr>
<td>Fig. 7 Lexical Interjection</td>
<td>A man is sleeping in the forest.</td>
</tr>
<tr>
<td>Fig. 8 Lexical Interjection</td>
<td>The Wolf is lying in bed waiting for Little Red Riding Hood.</td>
</tr>
<tr>
<td>Fig. 9 Two-Character</td>
<td>The bee flies in front of the bear’s face and his eyes follow it.</td>
</tr>
<tr>
<td>Fig. 10 Two-Character</td>
<td>The spider pulses in its web as an insect flies nearby.</td>
</tr>
<tr>
<td>Fig. 11 Extended</td>
<td>A man is hiding behind a tree listening to hoofbeats.</td>
</tr>
<tr>
<td>Fig. 12 Extended</td>
<td>The Headless Horseman rides away holding a jack-o-lantern and the horse’s reins, with cape flapping.</td>
</tr>
</tbody>
</table>

5 Conclusion

5.1 Sandwiching & Narrative Coherence

The above data analysis sections have shown that sandwich constructions contribute to spatial and temporal narrative coherence, often providing multiple spatial details while structuring articulations in a way that encapsulates simultaneous events in a sequential manner.
Section 4.1 looked at how scale-alternation structures show a single action from character perspective and from observer perspective, sandwiched to tie the underspecified articulations together to show they have the same agent. Section 4.2 addressed other sandwiches which show two perspectives, but use them to tie multiple agents’ spatial orientations and characterizations (through embodiment) together. Section 4.3 analyzed lexical interjection structures, showing how they are used to offer abstract information which cannot be fully conveyed through classifiers and embodiment. The interjection simulates the simultaneity of the information. Section 4.4 looked at two-character classifier sandwiches and how the sandwiching maintains the temporal coherence of the scene, showing that the first character’s action has been continuous in spite of the interrupted articulation. Section 4.5 looked at extended sandwiches, which were simply combinations of various types of the previously discussed sandwiches. In addition to maintaining narrative coherence through spatial and temporal means, these extended sandwiches also appear to be memory and perception aids to ground the audience so that they do not miss any details of extended actions. Finally, Section 4.6 discussed the non-manual articulations which held these sandwiches together as units. Overall, it is clear that these sandwiches are a robust strategy within the cinematic style of ASL storytelling which draws deeply upon the possibilities of visual communication.

5.2 Limitations and Further Research

At this point, it is important to consider the limitations (as well as the benefits) of the particular data set used in this work in order to see where research on sandwich structures can be expanded and improved. Using a corpus of (already extant) professionally produced videos of storytelling limits the kinds of analysis it is possible to achieve, as it is not possible to tailor the kinds of narratives the storytellers are presenting, and it is not possible to discuss motivations and choices that the storytellers made, as might be an option when conducting elicitations or
interviews. It is also not possible to ask multiple storytellers to produce the same descriptions or scenarios, and thus impossible to compare different ways of conveying the same information.

However, there are definite benefits to using videotaped narratives intended for Deaf audiences, as this rules out interviewer bias or code-switching which may occur in interviews with a hearing interviewer. It is clear from using pre-made videos intended for entertainment rather than linguistic purposes that the constructions discussed above are real instances of this phenomenon ‘naturally’ occurring.

The particular videos chosen for the corpus may also have limited the data in some ways. Since many of the stories were from the same producer, the style and manner of the storytelling likely does not represent a large portion of the actual variety of ASL storytelling, but is rather a narrow slice of the possibilities. Additionally, the “Four For You” videos were clearly produced with children in mind, so the style of these videos – particularly the strong emphasis on embodiment and using illustrative structures – may have different goals than stories produced for adults. Furthermore, all of the stories used in this work were adapted from existing stories in spoken languages; it is unclear how exactly this would affect the style in which the stories are presented, but it seems likely that stories developed originally in ASL would employ an even more cinematic and visually-focused style. This does not detract from the specific analysis presented above but does suggest that there is more data-gathering to be done in order to produce a full picture of how ABA structures are employed.

Another area for further thought and research is the categorization of the sandwiches. While the categories given above are clearly useful for organization purposes, and do offer us a lens for looking at the pragmatic uses of these sandwiches, it is unclear how linguistically important the categories are. Further research could look into whether the different types of
sandwiches behave differently in their larger syntactic contexts, or whether they can really be considered all one kind of entity.

Additionally, further research could expand to look at a broader consideration of all sandwich and sandwich-like structures, such as operator structures and verb sandwiches, as discussed briefly in Section 1. It would be revealing to see whether syntactic and semantic analyses of sandwich structures could be integrated. It would also be interesting to analyze the constructions I termed "non-illustrative" to see whether there is a similar pattern in the non-manual articulations in these structures, or in the context of their uses, to the illustrative sandwiches examined here.
6 Appendix: Glossing Conventions

The sandwich structures are glossed using a three-(or-more)-line system, showing the separate articulations of the right hand, left hand, and non-manuals. The lines are spaced so that simultaneous articulations are aligned vertically; a screenshot of the relevant portion of the sandwich is aligned below the glosses. If the sandwich is too long to fit across the page, the glosses continue on a new line below these screenshots.

The following shorthands are used:

- **RH:** gloss of the right hand
- **LH:** gloss of the left hand
- **NM:** gloss of the nonmanuals (may be multi-line if necessary)
- **X-CL:** classifier with X handshape
- **RS:** embodiment (role shift)
- **“in quotes”** "brief description of classifier/embodiment meaning”
- **[in brackets]** [physical description of non-manual articulations (or manual articulations in an embodiment construction, where the handshapes are not codified)]
- **SMALL-CAPS** frozen sign
- **SIGN+(+)** frozen sign repeated once (twice)
- **--------** articulation continues as far as the line of dashes continues
References


