

Register variation in mimetic gestural complements to signed language

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Abstract

Communication commonly occurs with both linguistic and gestural signals. In spoken languages the gestural signal can be manual (e.g., meaningful hand gestures) or vocal (e.g., meaningful uses of pauses, volume, and intonation), but in signed languages non-linguistic gesture and language occupy the same visual–gestural channel. One type of gesture, *constructed action*, is characteristically mimetic and allows for depiction of a character's actions with the speaker's body. We examine that type of gesture as it complements narratives presented in American Sign Language (ASL) to various audiences.

A single text (an account of a Deaf leader's life) was recounted by two native Deaf signers of ASL to three different audiences, a design that allows us to apply the sociolinguistic framework of style known as *audience design* (Bell, 1984).

The data show that constructed action can occur in both non-formal and formal settings. Additionally, if constructed action is analyzed by body parts (i.e., head, torso, arms/hands, and legs/feet) and degree of production (i.e., slight, moderate, exaggerated), some trends appear across settings. We suggest these trends could be attributed to the signers accommodating to their audiences. Finally, we report an association between degree of emphasis of constructed action and audience/setting for the two signers.

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1. Introduction

A message can usually be communicated in different ways, and various factors (e.g., whom one is addressing, where people are gathered, and the purpose of the gathering) are likely to influence the form that the communication takes. For example: a story told to a professor, via speech, by an adult student in a university classroom setting may differ substantially from the same story being told by the same person to a group of close friends at a cocktail party. The latter would likely contain more colorful lexical choices, the grammar may differ between the two, and there may even be more – or a different – use of gesture in one telling versus the other. For instance, the story at the cocktail party might contain speech that is accompanied by the use of various body parts to enact how the narrator may have danced, in an intimate fashion, with a partner at a dance club. Yet, the enacted gestures within the classroom depiction might differ qualitatively (e.g., less emphasis on a side-to-side swaying

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movement of the torso and hips) and quantitatively (i.e., whether or not some gestures are represented at all) from what was used at the cocktail party.

We expect to find patterned differences in language use across different situations (commonly referred to as *style* or *register* variation, as described below), but what about differences in mimetic gesture use as in the previously mentioned examples? Do people regularly use their bodies for enacting certain behaviors of a referent for audiences in formal settings and in different ways in casual conversation with friends? Such a finding would suggest that this type of mimetic gesture could appear in patterned ways—comparable to register variation within linguistic devices. Similar questions could also be asked about signed language productions and how enactments that accompany signs and grammar might be used across different situations. Some writers have suggested that the use of enactment in signed language is a necessary part of discussions of an animate being (e.g., Liddell and Metzger, 1998; Quinto-Pozos, 2007a,b). If asked to recount the same story to different audiences, would a signer also use her body – as if enacting the actions of a character – in different ways based on the audience and setting? As suggested in the classroom and cocktail party story example, people may feel comfortable using their bodies for gesturing when socializing with friends in an intimate atmosphere, but that same level of comfort may not be true with people who are not their close friends in a formal environment. The data from this study provide us with a sampling of the communication repertoire of two native signers from which to consider questions about variation in the production of mimetic gesture.

2. Constructed action

Throughout this work, we focus on mimetic gesture that has been termed *constructed action*. This communicative device has been described in various writings about signed language communication, although it can be said to appear in co-speech gestures as well. In this section we appeal to descriptions of gesture and language outside of the sign literature in order to define constructed action as a complement to language.

2.1. *Constructed action as an accompaniment to signed language*

Constructed action does not possess some of the crucial characteristics commonly attributed to language. In spite of this, the ubiquitous nature of constructed action in signed languages throughout the world is noteworthy. We highlight these points here and provide a rationale for our study.

2.1.1. *Constructed action in the literature*

The term *constructed action* has been used in the signed language literature to refer to how a signer uses her own body to depict the actions and persona of a character (e.g., see Liddell and Metzger, 1998; Metzger, 1995; Winston, 1991, 1992). This use of the body sometimes co-occurs with what has been described, in the spoken language literature, as “direct quotation” or “reported speech”. Although in the signed modality, these two labels would instead refer to a signer portraying the words of a character through signed utterances that represent the character’s speech. Portraying a character’s utterance in sign was initially labeled *constructed dialogue* (Roy, 1989; Winston, 1991, 1992) following work by Tannen (1986, 1989) on similar strategies that are used in spoken language to encourage a listener to become more involved with the speaker and the text or message that is being communicated. Constructed dialogue is not necessarily an exact rendering of a character’s speech but rather a depiction that presents meaningful aspects of the utterance that is being described. Metzger (1995) seems to be the first work that makes a distinction between the terms *constructed dialogue* and *constructed action*—the former being the signer’s depiction of the dialogue, or words, of a character, and the latter focusing on the non-verbal enactments demonstrated by that person. In short, constructed action is the signer’s use of various parts of her body (e.g., head, torso, arms/hands, and eyegaze) for the depiction of the actions of another character. Following Tannen’s description of constructed dialogue, it is the case that constructed action may not faithfully render someone’s exact movements but rather provide a depiction that includes important and meaningful aspects of what the signer is attempting to communicate about that character.

2.1.2. *Gestural qualities of constructed action*

2.1.2.1. *Constructed action and mental space theory.* Liddell and Metzger (1998) argue for the classification of constructed action as gesture and not language. Within a Cognitive Grammar framework, these authors engage the theory of blended spaces (a cognitive process that takes mental spaces as inputs and projects them onto a third space, or

blend) to account for how constructed action is understood by an audience, and such a theoretical framework follows from the works of Fauconnier (1985) and Fauconnier and Turner (1996). Although this framework allows for the consideration of meaningful gestural material alongside linguistic devices, there are also instances in which the two occur simultaneously.

In their analysis, Liddell and Metzger (1998) argue against various accounts of constructed action as linguistic phenomena. For instance, they note, “We do not, however, treat constructed action as part of a syntactic representation of individual sentences. In our analysis, constructed action is part of a gestural rather than a grammatical code.” (673). The authors discuss analyses from other written works that treat constructed action as part of the grammar of a sign language, and they examine the extent to which those analyses account for their enactment data. The following are examples of linguistic analyses that they test using their enactment data: the “point of view predicate” (Lillo-Martin, 1995), the “role prominence marker” (Kegl, 1985), and the “projected body pronoun” (Kegl, 1976), among others. Through their examinations, Liddell and Metzger contend that linguistic explanations of constructed action do not account for the variety of forms that appear in their data, and they argue instead for treatment of constructed action as a gestural phenomenon that is understood by the viewer because of the processes involved in comprehension following mental space theory.

2.1.2.2. Constructed action considering metrics by Hockett and McNeill. There are various examples of constructed action provided in the data of this article, but it is unlikely that any of them would be commonly found as single signs in dictionaries of ASL. Certainly, we recognize that not all lexical items of a language are captured in dictionaries and we also are aware that non-manual material from signed languages is frequently absent from those reference books and videos. However, we contend that the meaningful forms that we discuss do not pattern like ASL signs. For instance, we discuss how one signer moves his arms, head, and torso to indicate that he is trying to keep his balance. We know of no single ASL sign – used without non-manual signal support – to indicate the specific concept of ‘maintaining a person’s balance’, even though an ASL sign that could be glossed as BALANCE does exist. Further, if a Deaf signer were to be asked what an ASL sign for ‘maintaining one’s balance’ would be, we predict that they would not be able to produce a single sign and they may find themselves trying to demonstrate the concept by acting out aspects of that action.

Further support for the suggestion that constructed action has the characteristics of gesture rather than language comes from examining traditional accounts of morphemic material in language and how gesture has been described as an accompaniment to spoken language. Whether or not constructed action can be broken down into morphemic segments is an important question about its status in the communication signal. Hockett (1960, 1966) provides us with an early model from which to consider traditional characteristics of language. Further, McNeill (1992, 2005) provides us with ways to consider co-speech gesture, which are useful for the examination of the visual–gestural channel of communication.

In essence, our recent analyses have suggested to us that various features of language seem not to be exhibited by constructed action. Language is believed to demonstrate *duality of patterning*, the building of meaningful words from meaningless sounds (or minimal formational parts of signs for signed language) (Hockett, 1960, 1966), whereas non-linguistic gesture, or specifically constructed action, would presumably not contain such patterning. The number of meaningless sounds (or values for phonological parameters in signed language) in a language are believed to be finite and relatively small in number, and they are commonly perceived (and, in some cases, produced) in a discrete fashion. This is the feature commonly known as *discreteness*. The linguistic concepts of duality of patterning and discreteness underlie McNeill’s claims that gestures are global, synthetic, and non-combinatoric (McNeill, 1992).

Since our claim is that constructed action appears to lack duality of patterning and discreteness, several assumptions could be made: there are presumably no small sets of phonological values (e.g., meaningless handshapes, movements, places of articulation, and orientation) that could be combined systematically to create morphemic sequences. Rather, there appears to be an iconic mapping of form to meaning in constructed action so that the body part would be configured – to various degrees – like the real-world action or entity that it is attempting to represent.

There are a few brief examples that could be provided to support the claim that constructed action does not demonstrate duality of patterning and discreteness. In Fig. 4 of the data from this article, a signer with his arms flailing about is shown as producing constructed action that indicates that a character was trying to maintain his balance instead of tripping as he ascended some steps. Since there are no discrete parts of the constructed action that combine to create a meaningful whole, the gestural sequence could be said to be *global* in nature (McNeill, 1992). Additionally, flailing arms are seemingly not the only way one could indicate losing one’s balance; other possibilities could include:

reaching out with stationary arms while moving one's torso around or simply indicating the loss of balance by moving the torso backward and forward in an alternating fashion.

Further, context is very important for interpreting the flailing arms, which also suggests that those movements are not morphemic. As McNeill noted regarding the *synthetic* property of gestures, a single example of constructed action can combine many meanings. A signer showing the body movements of someone pushing a wheelchair could, at once, be demonstrating the following: someone looking around intently or searchingly, someone's hunched shoulders indicating any one of various options (e.g., someone with an actual hunched-back, a shorter person than the signer/speaker, or an older person than the signer/speaker), displacement of a character from a particular location (i.e., by walking or movement of the torso), and even the way in which the character's hands are holding the wheelchair's hand grips. As a result, such an example of constructed action would indeed be synthetic; it combines many meanings into a single pantomimic action (McNeill, 1992).

Finally, different instances of constructed action cannot be combined to form more complex structures. McNeill (1992) might say that constructed action is non-combinatoric. If we take the two examples presented earlier (e.g., constructed action for showing a character trying to maintain his balance and constructed action for showing a wheelchair being pushed), we see that it is not possible to combine them to form a more complex structure. In other words, "maintaining balance" + "wheelchair pushing" does not equal a combined meaning like "balancing on the back of a wheelchair while it is being pushed". An entirely different rendition of constructed action would likely be necessary for showing that meaning.

In short, based on consideration of a couple commonly cited metrics proposed for language (i.e., duality of patterning and discreteness), it appears that constructed action does not possess at least some standards of form to which linguistic devices usually adhere. Additionally, the suggestion that constructed action may be similar across people who speak or sign different languages would also question whether or not it is linguistic in nature. McNeill (1992:22) notes that the standards of form that characterize linguistic devices are not present for gestures: "Gestures have no equivalent to this implicit standard of form. Gestures by different individuals often are similar when the content of the gesture is similar, but this similarity is because of the content and not because individuals are conforming to standards for making the gesture." So, constructed action does not seem to obey all the rules that linguistic devices follow but rather constraints that arise from the imagery of the action itself (McNeill, 2005).¹

It should be noted that some authors have suggested that what has been described here as constructed action should be considered a linguistic phenomenon—at least for signed language analyses. For example, aspects of constructed action have been described morphemically as *body classifiers* (Supalla, 1982, 1990, 2003). And, constructed dialogue, which often contains aspects of constructed action, has been analyzed syntactically as a predicate that reflects agreement with its subject (Lillo-Martin, 1995). However, as noted earlier, Liddell and Metzger (1998) argue against linguistic accounts of constructed action.

2.1.3. *Constructed action via various body parts*

Most often constructed action is used to depict facets of an animate object such as a human or an animal, although it can also be used to anthropomorphize other entities (e.g., a burr that is stuck to someone's clothes or a tree that is swaying in the wind). Various types of representations are possible, and some of the possible categories of constructed action listed in Metzger (1995:259) include: representing what was not done, summarizing action, fade-in/fade-out (direct/indirect action), and non-human action. Sometimes the constructed action involves only minimal action of one or two body parts (e.g., a head turn and/or eyegaze that is intended to depict the same action of a character), but it can also be the case that several parts of the body (e.g., torso position, arm and head movement, facial expression, and lower body movements) are used in order to provide a more complete rendition of what a character may be doing. The term *constructed action* can be useful for referring to what a signer does to depict various facets of a character because it captures both subtle and elaborate uses of various parts of the body. A signer's gaze in a specific direction signals the way a character that she is describing stared at an object, or a signer's depiction of a baseball batter's crouching stance could provide a wealth of information (e.g., lower body stance, torso posture, head tilt, body orientation, facial expression, etc.) about that referent. Both degrees of depiction can be referred to as constructed action, albeit the latter is clearly richer in terms of informational content. Essentially, the term *constructed action*

¹ It may very well be the case that constructed action production may follow rules (e.g., by satisfying syntactic requirements within stretches of linguistic signs), but that remains to be seen. Further research is needed on the interaction of constructed action with linguistic devices.

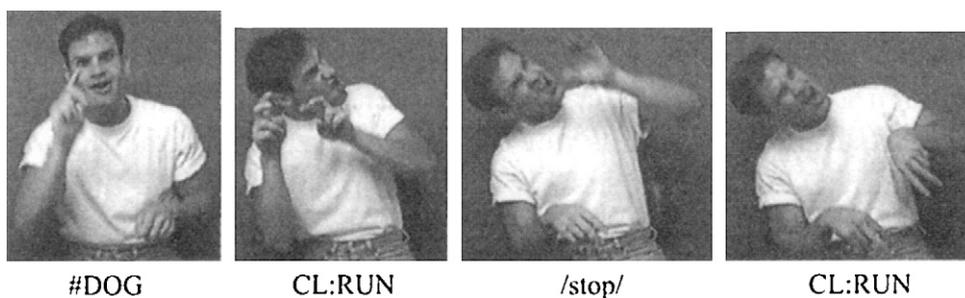


Fig. 1. Gesture use in an ASL narrative (from Emmorey, 1999:145, Fig. 8.7).

provides a single label for a myriad of ways in which a signer uses various parts of her body to depict another character's actions.

Dudis (2004), like Liddell and Metzger (1998), also uses mental space theory to examine how the body is used in service of communication, but he examines how the signer can use different parts of the body to represent different facets of a scene. One of his claims is that different body parts allow for communication of aspects of a scene in different scales or sizes. For example, the signer could represent a character in a life-sized scale (what he terms *participant viewpoint*) and also a smaller scale that is created with so-called “classifiers” (constructions that are common in signed languages and that communicate a myriad of information about objects such as shape, size, movement, and location²) in the signing space (*global viewpoint*, according to Dudis). Non-manual articulators such as the face and torso can represent the constructed action of a character (i.e., the character's facial expression and how she moves her torso) while the signer's hands/arms articulate how the character might interact with other objects within a larger space (i.e., by using classifiers for such depictions). Thus, different body parts can be used simultaneously to represent various facets of a character or scene.

Emmorey (1999) provides us with a signed sequence that can be used to illustrate an example of constructed action. In the sequence shown in Fig. 1 adapted from Emmorey (1999:145), the signer depicts events from the story “Frog, where are you?” In this particular scene, the signer is portraying a dog that is running away from a deer.

The first frame in the sequence shows the signer articulating one sign for ‘dog’ in ASL (the lexicalized fingerspelled item #DOG). That frame does not seem to contain examples of constructed action. However, the following three frames show the signer doing various things to depict the actions of the dog as it interacts with the deer: looking to the side, tilting his head as if looking up at the deer as he is running, raising his hand as if to indicate to the deer to stop, and leaning his torso to the his right side as if in opposition to the deer that is to his left. The signer's eyegaze to the side, upward and leftward tilting of the head, and leaning of the torso to the right are not elements of common ASL signs nor are they grammatical non-manual signals³. Emmorey's labels also include “CL:RUN”, which refers to a so-called “classifier”, in her analysis.

2.1.4. Constructed action is ubiquitous in signed language

Constructed action is a robust phenomenon that occurs across various sign languages. Aarons and Morgan (2003) detail the multi-faceted constructed action produced by a signer of South African Sign Language (SASL). In one example, the signer describes a cartoon showing a plane amidst a “traffic jam” in the sky and a parachuter who finds himself among the chaos. The signer simultaneously depicts the man falling (represented by his left hand), his shocked facial expressions (represented on his face) as well as a plane in the sky (represented by the classifier construction articulated by his right hand). As noted, Dudis (2004), through his treatment of constructed action, would likely suggest that the signer of SASL was utilizing partitionable body zones to accomplish the simultaneous communication of information about the parachuter and the plane. Other authors have also discussed communication devices in other

² Schembri (2003) and Slobin et al. (2003) argue for the use of the terms *polycomponential sign* or *polycomponential verb* over the term *classifier* for various reasons. In short, the so-called classifier constructions of signed languages, after re-analysis, do not seem to resemble the classifiers of spoken languages to the degree that was originally believed.

³ Bahan (1996) notes that eyegaze is an obligatory marker of agreement – primarily with objects – but there does not seem to be a lexical verb being produced that would trigger such agreement. Rather, this example of eyegaze appears to be representing that of the character being depicted.

sign languages such as Danish Sign Language (Engberg-Pedersen, 1993) and British Sign Language (Morgan, 1999; Sutton-Spence and Woll, 1999) that seem to also be constructed action, although those authors did not use the term “constructed action” in their descriptions.

2.2. *Constructed action as an accompaniment to spoken language*

It could be said that users of spoken languages also commonly utilize constructed action, even though other terms have been used to describe such actions. For example, Clark and Gerrig (1990) propose a theory that quotations are a special kind of language use, and they involve demonstrating rather than describing or indicating. In demonstrations, speakers use their body and voice to depict various aspects of that to which they are referring, and these depictions are “non-serious”, or not truly occurring. In other words, a speaker demonstrating that she was arguing with her mother (e.g., while recounting the event, using an argumentative tone and/or volume of voice, shifting her torso or head to show how she acted during the argument, etc.) is not truly arguing with her mother during the demonstration—it is simply a re-creation of selective parts of the actual argument. *Descriptions*, according to Clark and Gerrig, do not involve the use of the voice or body to depict aspects of an event. So, a description of the argument referred to above may be something like: “So, my mother and I were in an argument, and I raised my voice, faced her, and looked her in the eye . . .” A third type of communicative act exists in spoken language, following the theory that the authors propose, and it is called *indication* (or pointing). Although demonstrations and indications are frequently relegated to non-linguistic material since they contain little to no evidence of linguistic elements and structure, Clark and Gerrig suggest that no account of language use can be complete without considering the rich use of demonstrations. There are, in fact, ways in which demonstrations, as non-linguistic material like commonly used vocal or bodily gestures, are embedded within sentences and function as complements of certain verbs like “go”. The authors give the following example of such a demonstration: “When you’re finished, just go [belch] and I’ll know you’ve had enough.” (781). In their theory of quotations as a type of demonstration, the authors suggest that people can depict aspects of language, dialect, and register in their demonstrations. This will, of course, have some significance for the data that are described in this article.

Gullberg (1998) also addresses co-speech gesture that is iconic in nature by focusing on different degrees of pantomimic behavior. The author examines the gestural production of adult L2 learners of French and Swedish in order to determine how their gesture use during L2 production compares with their gesturing during their L1 production. Among other things, she looks at how pantomimic behavior could range from “mimetic iconic gesture” to “highly mimetic iconic gesture” and finally on to “true mime”. For Gullberg, an example of mimetic iconic gesture would be the speaker mimicking the act of writing (i.e., the fingers configured as if holding a writing instrument and the hand and arm moving as if writing in air), whereas highly mimetic iconic gesture would involve other articulators, such as the feet. Finally, true mime, according to Gullberg, includes the use of the head as articulator.

2.3. *Does constructed action vary as a function of context?*

It seems useful to situate the question of whether or not constructed action varies across contexts within discussions of how various writers have considered how language and discourse varies across contexts. Various authors (e.g., Joos, 1961; Van den Broeck, 1977; Coupland, 1980) have described how language production varies systematically by the setting in which a speaker is situated. Such writings tend to describe how a single individual produces different phonological, lexical or syntactic variants in different contexts. For example, Coupland (1980) looked at the phonological variation in the speech of a travel agent in four different situations of language use (what he defined as “casual”, “informal work-related”, “client”, and “telephone”). In this study, communicative purpose of and role relations within each setting were influential in which phonological variant was used.

These types of changes within linguistic systems are referred to as *register* differences by some authors, and *style* differences by others. Within the sociolinguistics literature, the terms style and register seem to be, at times, used interchangeably. In general, both refer to how a user changes her language production based on social factors such as audience, event, etc. However, some differences have been noted. Irvine (2001) suggests that the term style “. . . places less emphasis on a variety as object-in-itself and more emphasis on processes of distinction, which operate on many levels, from the gross to the subtle.” (31). In other words, Irvine would likely claim, as she does later in that work, that “sports announcer talk” is a register along with, perhaps, other common and patterned uses of language such as that of

vendors at an outside market and storytellers at a children's book store. The term *style*, however, may be more appropriate for those examples of language distinction that may not occur regularly and/or the level of language distinction is not as specific. So, by using the term *style*, we recognize that there may be various configurations of, for example, formal use of a language.

The use of gesture by a single individual across different contexts has also been considered, albeit minimally. In her doctoral dissertation, Kaaren Bekken examined how manual gestures that accompany speech differed when they were produced by six mothers to their 18-month-old female infants versus the mothers to an adult interlocutor. Bekken (1989) notes that she controlled for content (e.g., by having children's toys as the objects of conversation) across the two types of interlocutors, thus eliminating a major factor that could influence gesture production across the interlocutors. She found that mothers who tend to change their speech when interacting with their children (i.e., produce "motherese") also tend to change their gestural behavior. Specifically, the speech and gesture are modified in parallel (i.e., the speech directed to the infants is simpler than the speech directed to the adults, and that is also the case for the gestures). The mothers mainly used deictics (i.e. points), "hold-ups", and demonstrators with the kids—all of which refer to the "here and now". Whereas, more abstract gestures were used with the adults. Bekken suggests that the findings support the claim that speech and gesture form a single, integrated communicative system that is modified according to the user.

Zimmer's (1989) account of register variation in ASL was one of the first published works that provided various examples of how topic and setting can influence signed language production. Specifically, Zimmer discussed various features of formal versus less-formal signing by analyzing three video segments of a single signer in the following contexts: an interview for a television audience, a presentation about being a work-at-home husband to a small group, and an academic presentation to Deaf high schools students.

Regarding phonological patterns, Zimmer claimed that the use of the signing space is much larger in formal signing than in the informal register and body movements are more exaggerated in the formal setting. Presumably, some of the body movements that Zimmer referred to could be interpreted as the types of devices that signal or support constructed action production. Zimmer notes,

Body movements are also much more pronounced in the lecture than in the other two situations. Shifts to indicate reported speech (which usually takes the form of a dialogue between the speaker and one of his students) involve directional shifting of the entire torso. This can be contrasted with the same phenomenon in the informal talk, in which shifting to mark different speakers is done only with movements of the head. (260)

Regarding discourse patterns, Zimmer claimed that the portions of the signed lecture ("formal" register) contained examples of role playing that depict two participants interacting with each other. In those segments, the signer would use exaggerated facial expression whereas the same degree of facial expression did not exist in the non role-playing portions of the text.

Zimmer's register work on ASL and Bekken's analysis of English co-speech gesture in child- versus adult-directed speech provide us with some evidence that constructed action might be expected in different styles or registers of ASL—even if we would control for content. What is not clear, however, is whether there might be identifiable patterns of constructed action use across different styles/registers. It might not be the most useful to consider Bekken's metric for gesture differences across registers, namely complexity, since her analysis focused on deictics and abstract gestures—two types of co-speech gesture that are usually classified separately from constructed action. So, her result that child-directed co-speech gesture is less complex than co-speech gesture directed at adults may not be comparable to analyses of constructed action in sign across different registers. Nonetheless, Bekken provides us with important evidence from co-speech gesture, albeit preliminary—that gesture production can vary across registers.

The questions detailed here, which direct the study, are (1) Is constructed action produced in all settings? Or, is it the case that it fails to surface in formal or other contexts? (2) Does constructed action vary across different audiences and settings? If so, (3) Are there patterns of constructed action production (with respect to body parts and degree of emphasis) across audiences and settings? These questions are motivated, in part, by a few writings on the topic of register in addition to comments shared with the authors by Deaf individuals. We feel that Zimmer's (1989) work supports the hypotheses that constructed action could appear across both formal and less-formal contexts and that it varies across settings. However, Zimmer's general treatment of register differences does not focus exclusively on constructed action devices, so her reports of register differences do not provide much detail in this area. Additionally, Bekken's (1989) analysis of co-speech gesture use across audiences (e.g., child-directed and adult-directed) also suggests that there might be differences in constructed use across audiences, although she did not look at formal

settings. Finally, we feel that the separation of constructed action into body parts (as described in more detail in section 5) follows from the work of various authors. For example, Dudas (2004) describes partitionable body zones, Zimmer (1989) mentions torso shift as it occurs differently across registers, Wilson (1996) describes facial expression in ASL narratives, and Aarons and Morgan (2003) detail arm movements as constructed action and facial expression for depicting a character's emotions (in a South African Sign Language narrative).

3. Audience design

The *audience design* framework (Bell, 1984, 2001), which we utilize to frame our study, seeks to understand intra-speaker variation as it is shaped by one's interlocutors. In addition to considering influences of communication partners who are present, Bell's framework also attempts to account for the possible effects of non-present individuals who can influence the speaker's communicative strategies and linguistic choices (termed *referee design* in Bell's framework). The basic premise of audience design is that a speaker will choose a style and also *style shift* (or move towards another style linguistically) in accord with the perceived interlocutor and non-present referees. Often, the shifting is done in order to accommodate one's language production to that of the audience or interlocutors. So, Bell's model for language style places intra-speaker variation within a general framework of language accommodation—such as what has been advanced as *Speech Accommodation Theory* and later *Communication Accommodation Theory* (see Giles et al., 1991 for a general discussion of this approach). One of the goals of this theory is to account for *convergence* (i.e., the production of forms closer to what one's interlocutor's might expect) or *divergence* (i.e., the production of forms that differ from what one's interlocutor's might expect) within language and general communication. In a theory of language accommodation, much emphasis is given to what speakers perceive would be appropriate to either connect with – or distance themselves from – their audience.

Bell (1984, 2001) would suggest that speakers accommodate their language use to their interlocutor, or addressee. This accommodation is in response to a few factors: the personal characteristics of the addressees, the general style of the addressees' speech, and the addressees' use of specific linguistic variables (e.g., phonetic variants, phonological and syntactic patterns, etc.). If a speaker is doing most or all of the talking, then it is likely that she is accommodating to perceived or assumed characteristics of her addressees. In this case, the speaker may be engaging *subjective linguistic convergence* (e.g., Thackerar et al., 1982), or shifts toward the expected language use of the interlocutors based on non-linguistic attributes (e.g., age, level of education, etc.).

As one example of this phenomenon, Bell (1984) describes a study of radio broadcasters in Australia. In that work, he examines the ways in which a radio broadcaster can style shift as a function of which radio station audience he is addressing. One of the linguistic variables that is considered in that analysis is the voicing of intervocalic /t/ as produced by four newscasters on two New Zealand radio stations. Bell found that "... individual newscasters shifted systematically from more standard values of the (t) voicing variable on station YA (higher status audience) to less standard values on the lower-status ZB." (p. 171). These were the same newscasters who would read their short news stories at two or more different radio stations that shared the same suite of offices. Bell would likely claim that the newscasters were associating particular linguistic features (either standard /t/ or non-standard /t/) with particular (perceived) social groups. In short, the newscasters were accommodating to their perceived audiences.

4. Methodology for the present study

Following Bell's (1984) framework of audience design, a single culturally relevant text was the content for presentations that were given by two Deaf participants to various audiences and at various locations. A single text was used in order to control the content that would be presented to the different audiences. Because the presentations were given at actual events in the Deaf community, the data are presumed to be representative of the linguistic and non-linguistic communicative strategies that a Deaf member of the community would produce in those types of settings. Details of the study are found in this section.

4.1. Participants

Two Deaf, native signers of ASL took part in this study, and they will be referred to as "Kevin" and "James". The two participants were males (approximate ages were 35 and 55, respectively, at the time of data collection) and each

worked as a teacher at a residential school for the Deaf in the United States. They had each attended schools for the Deaf themselves, graduated with Master's degrees from college, and both had experience teaching Deaf children in a residential school. Since each participant was from a Deaf family, it is assumed that they also had a substantial amount of experience interacting with various members of the Deaf Community.

4.2. Task and materials

For the study, each participant was asked to present a signed version of a text at three different locations and in front of three different audiences. The text was written in English and based on the life of Don Pettingill, a famous Deaf leader from the United States, who passed away in January of 2005. Don was very involved in the Deaf community throughout his life, and he was known by groups of people throughout the country. The information for the text was obtained from different sources including Don's family, friends, colleagues and various obituaries. An outline of the text was also prepared, which served as a guide to facilitate recall of some of the points from the text during each presentation. One week before the participant would present for the first audience, he received the text and outline in order to prepare for the presentation.

The text and outline included various types of information about Don such as where he lived, ways in which he was involved with the Deaf Community, and brief anecdotes about his interaction with various people. The anecdotes were included in an attempt to elicit constructed action from the signers. Based on previous writings on the use of constructed action as an accompaniment to signed language, it was hypothesized that signers would engage in the use of that communicative strategy when having to describe the following: how a single character interacts with her environment and how two or more characters interact with each other. These are among the types of situations that tend to elicit construction action use. However, the two participants were unaware of this since they were only given the text and outline without any guidance about *how* to deliver the narratives. The portions of the text written in an attempt to elicit constructed action are given here, and the portions in bold font represent those passages where the signers primarily used constructed action as a depiction of what they envisioned Don had done in the actual event being described.

a. *High-five*:⁴ A brief account of how Don creates a bond with another Deaf man (Buddy) who he had just met:

*“Buddy tells the story that one time Don asked him if he had graduated from college. Buddy’s response was that he had started college, but he had to leave at some point because he needed to find a job and earn money to support a wife. **Don just looked at Buddy in surprise, and then gave him a “high-five”** and showed Buddy how excited he was. Buddy says that Don was not excited because Don was a college dropout, but rather because he had found something that the two held in common—neither had a college degree. This started a friendship that lasted a long time.”*

b. *Wheelchair*: An anecdote that serves to show how Don loved to tell jokes and was quite a humorous person

“Gary remembers seeing Don one time in a wheelchair in the lobby of a hotel at an NAD conference; this was when Don was quite advanced in age. Polly, Don’s wife, was wheeling Don into the lobby when Don caught sight of Gary, who was across the room. Without missing a beat, Don caught Gary’s attention and immediately cracked a joke!”

c. *Presentation*: A story of how Don, using unconventional methods, manages to capture the attention of an inattentive student body when presenting at a school for the Deaf

*“When it was Don’s turn to speak, **he started to walk up the stairs to the podium, and he tripped and just about fell.** That **caught the attention** of many of the students. Then, before he began his presentation, Don told everyone that it was too hot and he had to remove his coat. More students were paying attention by this point. Then, he said that it was still too hot and he had to loosen his tie. By this time, **Don had captured the attention of all the students.**”*

⁴ “High-five” is a term used to refer to the act of showing excitement about something. The act usually consists of two people reaching up and clapping the other’s hand(s) in the air. This is a common gesture of excitement and connection in the United States.

Table 1
Characteristics of the “children in a classroom” contexts.

Who	Purpose of event	Participant information	Space	Number present	Ages	Other information
Kevin	Education	Standing at chalkboard, dressed in a polo shirt and slacks	Classroom at a school for the Deaf	~10	9–11	Children seated in semi-circle in front of Kevin
James	Education	Seated in front of the children, dressed in a button-up shirt	Classroom at a school for the Deaf	~10	9–11	Children seated in semi-circle at table in front of James

Table 2
Characteristics of the “adults in a formal setting” contexts.

Who	Purpose of event	Participant information	Space	Number present	Ages	Other information
Kevin	Conference of a state chapter of the National Association of the Deaf	Stood on stage away from podium, dressed in a polo shirt and slacks	Hotel ballroom	~200–250	Mostly 25–75	Large room, ~15–20 tables dressed in table cloths, buffet lunch service
James	Commencement ceremony	Presented at podium on stage, dressed in suit and tie	School for the Deaf gymnasium	Graduates + guests = ~200–300	Various	Participant on stage ~10 ft. from 1st row of chairs

At each site, the participants chose how they wanted to present to the audience: seated, standing, with or without podium, etc. They were asked to present the text in the manner that they felt appropriate. For each participant, the presentations occurred with at least one week intervening between each presentation.

4.3. Locations and contexts

The sites were chosen by taking into account various elements that would likely influence the language that would be used by the signers while also maintaining a “naturalistic” environment for language production. For instance, characteristics of each setting that were considered were purpose of the gathering, common attire of the presenter and participants at these types of gatherings, and how the audience would be situated vis-à-vis the presenter. Brief accounts of all the situations can be found in [Table 1 \(children in a classroom\)](#), [Table 2 \(adults in a formal setting\)](#), and [Table 3 \(adults in a non-formal setting\)](#).

There are various reasons for utilizing the settings that are described in [Tables 1–3](#). Teachers of school-aged children frequently share narratives or short stories about various items with their students. For this reason, we felt that a school setting would be most appropriate to collect data of communication that is directed at children. Each of the participants presented the text at a residential school for the Deaf in the United States where ASL is used for all or part of the instruction, and each participant was a teacher at the school where the presentation took place. One of the participants (James) presented the text to one of his regular classes of students where ASL is the usual topic of

Table 3
Characteristics of the “adults in a non-formal setting” contexts.

Who	Purpose of event	Participant information	Space	Number present	Ages	Other information
Kevin	Social gathering for senior citizens which included games of Bingo	Stood at front of room, dressed in a polo shirt and slacks	A meeting room at a community center for the Deaf	~15	Mostly 55+	~5 round tables, unarranged audience members seated, facing participant
James	An informal party (including food) at the signer’s home	Stood by door of house, dressed in a patriotic shirt and jeans	An outdoor patio and garden	~8	25–40	audience members standing and seated on ground somewhat close to participant

instruction; that instructor and those students meet for approximately 2 hour per week. The other participant (Kevin) normally teaches at the high school level, but he was brought to a classroom of 9 to 10-year-old students to present the text. In both cases, the students were told that the presenter that day would be sharing a story with them about a Deaf man. Two different schools for the Deaf were used as data collection sites for this study. [Table 1](#) contains more details about the configuration of each classroom setting.

In order to capture signers communicating in more formal settings, we searched for events that normally are considered as special events within the community. These situations are generally planned, people usually wear more formal attire for these occasions, and there tend to be stages or podiums from which presenters are expected to be addressing the audience. James presented the text within the keynote presentation at a commencement ceremony at a school for the Deaf, and no mention was made to the audience about why he would be presenting that text.⁵ Kevin, on the other hand, presented the text during a lunchtime gathering at a convention of a state chapter of the National Association for the Deaf. There was no scheduled presentation for the few minutes immediately prior to the serving of the food, and Kevin was introduced by the researcher as someone who was going to share a story about a Deaf man with the audience. The audience in this setting was told that the presenter would be videotaped and that his signed language use would be analyzed. See [Table 2](#) for more details about the two formal settings.

The events that are labeled “non-formal” in this study are those that depict situations that occur more commonly in the Deaf community. As opposed to the formal situations described above, the other adult-directed settings would likely not be viewed as the same type of “special occasions” such as a state conference or a commencement ceremony, which tend to only occur once every year. One of the non-formal settings was a Deaf community center that serves as a frequent gathering place for social and business events (e.g., meetings, lectures, etc.). At that setting, Kevin introduced himself to several Deaf senior citizens who were gathering for bingo games and for socialization. He informed them that he would be sharing a story about a Deaf man’s life with them, and he explained that he was going to be videotaped so that a researcher could analyze his ASL use. This occurred before the bingo games commenced at that gathering. The other non-formal setting was a gathering of friends at the presenter’s home. The presentation was preceded by an informal dinner, and it took place outside in a patio and garden area. Kevin informed his friends that he would be sharing a story about a Deaf man with them and that he was going to be videotaped for analysis by a researcher from a nearby university.

4.4. Coding

The manners in which each signer relayed the information contained in the anecdotes were examined for the use of constructed action. In particular, ways in which each signer used specific body parts (their lower body, torso, arms and hands, and head—including facial expression and head orientation) during the retelling of an anecdote were scrutinized and compared across audiences and settings for each signer. These body parts were the “communication variables” examined for the study—much like the voicing of intervocalic /t/ as a linguistic variable within [Bell’s \(1984\)](#) description of style variation for radio broadcasters in Australia. If any of the signer’s body parts listed above appeared to depict the way one of the characters in the anecdote would have also used those body parts, such behaviors were deemed constructed action. Further, comparisons were made across audiences and settings in order to describe what each participant produced in each of the three retellings.

For purposes of the data presentation for this article, examples of constructed action were categorized according to a tripartite system: “slight”, “moderate”, or “exaggerated”. Even though constructed action is likely gradient in nature as opposed to categorical, these values allowed us to document, for comparison purposes, the relative degree of each constructed action variable (i.e., body parts) used in the narratives. “Slight” refers to constructed action that is primarily subtle in nature such as a noticeable – but minimal – shifting of the torso to depict a character’s movement or a “shocked” facial expression that displays only a narrow opening of the mouth. “Exaggerated” can be described as the opposite of “slight”: constructed action that appears overly dramatic and emphatic. As such, a 90° torso shift to depict how a character turns to one side or a wide opening of the mouth to demonstrate a character’s sense of shock would be categorized as “exaggerated”. “Moderate” lies between the two extremes and captures examples of

⁵ James actually suggested that he present the narrative during the keynote presentation that he was asked to deliver. Presumably, he wanted to use a true story of a Deaf leader as illustrative of the types of characteristics to which the graduating seniors, and others present, should aspire to be.

Table 4
Qualitative metrics for coding degrees of constructed action.

Body part	“slight”	“moderate”	“exaggerated”
Arms/hands	Hardly noticeable movement In signing space Not tense	Modest movement In signing space Does not appear tense	Very noticeable movement Outside signing space Appears tense
Face (facial expressions)	Mouth opening: narrowly open, perhaps for brief time Eyebrows: movement hardly noticeable Facial muscles: hardly appear tense	Mouth opening: modestly open Eyebrows: modest movement Facial muscles: appear moderately tense	Mouth opening: significantly open, possibly for extended time Eyebrows: significantly raised Facial muscles: appear very tense
Head	Orientation change: hardly noticeable Movement: hardly noticeable	Orientation change: slight reorientation Movement: depicting character’s movement, some displacement	Orientation change: significant change from default (e.g., 90° reorientation) Movement: significant displacement from default
Torso (CA)	Hardly noticeable displacement Brief	Modest displacement to depict character Modest duration	Significant displacement during movement Extended duration
Lower body	Hardly noticeable movement (e.g., body shifting or possibly lifting of feet in place)	Modest movement (e.g., small steps to reorient body)	Significant displacement (e.g., taking steps) of possible extended duration
Torso (transitional)	Hardly noticeable shift	Modest shift to either left/right or downward/upward, etc.	Significant shift (e.g., 90° turn)

constructed action that are obvious but that do not appear overly emphatic or dramatic. Admittedly, it is difficult to categorize some examples of constructed action because of the qualitative nature of judgments, but both authors scrutinized all examples of constructed action and agree to the judgments reported in this work. Metrics for evaluating the scrutinized body parts can be found in Table 4. As noted, it is likely that the constructed action is gradient within the three categories that are proposed here for degree, but the categories are suggested to be useful for general comparison purposes. Additionally, it should be noted that there were some instances where a signer did not produce constructed action during the relaying of an anecdote. In such cases, “none” was used to characterize those segments.

The coding was performed by both authors—first by each working independently and then by verifying the descriptions through viewing the video segments together. One author is a certified signed language interpreter and signed language researcher and has over 20 years of experience interacting with Deaf users of ASL and the other author has studied ASL formally and interacted with Deaf users of ASL through lab- and community-events.

5. Data presentation

We describe the constructed action that was displayed by each signer via various parts of his body (arms/hands, facial expression, head, torso, and lower body). This division is partly motivated by Dudis (2004) and his discussion of actor blends (hands, torso, and facial expressions). Dudis also notes that eyegaze is an indicator of an actor blend (i.e., constructed action), although we do not include eyegaze information here for one primary reason. Eyegaze is particularly difficult to document in a reliable fashion due to recording limitations in naturalistic situations (e.g., distance to signer from camera, lighting, the existence of shadows that occlude eye movements, the signer’s use of eye glasses, etc.), and we feel that accurate accounts of eyegaze could not be described here. Analyses of eyegaze should perhaps use instrumental measures, such as an eyegaze tracker, that can be placed on the signer’s head to reliably record eye movements. Each table also contains information about torso shifts (often accompanied by a concomitant reorientation of the arms and head in the direction of the shift) that are performed by signers in some cases when transitioning to the constructed action to depict a character. These torso shifts, since they serve as transitions and



Fig. 2. James performing degrees of role shift while signing US-TWO-SAME in all settings during the *high-five* anecdote.

presumably not what the character may have actually done, are listed at the bottom of each table. Although, we include the counts from these shifts in our constructed action reporting and analyses. The reader will note that the tables contain more information than is discussed in the text—with the goal of providing as complete a picture as possible of the constructed action that was produced by participants. However, the focus of our discussion in the text is on overt examples of differences in constructed action production across audiences and settings.

5.1. *High-five*

Both participants produced various examples of constructed action for the *high-five* anecdote across audiences. If we consider the arms/hands, Kevin raises his arms above his head to articulate the gesture/sign⁶ *high-five* for the children, although he does not do the same for either group of adults. Kevin also used his lower body for constructed action with the children by shifting his weight and re-orienting his feet to depict the approach of one character to another. This, too, was not represented in the same manner with the adult audiences.

In terms of facial expressions, both Kevin and James produced moderate to exaggerated expressions to depict a character's emotive reactions for the children and the adults in formal settings, although James also did so for the adults in the non-formal setting. In particular the facial expression communicating 'shock/surprise' appeared to be emphatic for both participants for the formal settings, and the look of 'joy/excitement' was also quite emphatic for Kevin in the formal setting. James had a slight look of disappointment during one of the character depictions in the formal retelling of this anecdote, but the same expression was missing from the other two settings.

A couple points can be made about the torso shift that marks a transition to constructed action. In general, this shift was most pronounced with children but also with adults in formal settings, whereas the adults in non-formal settings did not seem to elicit the same degree of torso shift from either participant. Table A.1 shows that Kevin produced the most emphatic torso shift when depicting different characters for the children, whereas his torso shifted only slightly to depict the same characters for the adult audiences. Accompanying Kevin's emphatic torso shift for the child audience was movement of the legs/feet to another position in order to represent the different characters in that anecdote. James also shifted his torso to depict different characters when presenting to the adults in the formal setting, however he did not do so with the children or the adults in the non-formal setting. Fig. 2 shows still frames of James' torso shifts for the three settings within the *high-five* recounting.

5.2. *Wheelchair*

For the *wheelchair* depictions, there are also various examples of constructed action by the two signers across the various audiences. In terms of lower body use, Kevin demonstrates exaggerated constructed action for the children by taking several steps to depict a person pushing a wheelchair. In particular, he took 4–5 steps forward and backward. With the adults in the formal setting Kevin did not take any steps, although he did appear to shift his weight from foot to foot as part of the depiction of movement. James, however, did not engage in walking with any of his audiences.

⁶ It is unclear if the gesture 'high-five' has been lexicalized in ASL. As such, we refer to this production as either gesture or sign here. Differences between a gesture and its lexicalized counterpart in a sign language are beyond the scope of this paper.

The arms and hands for articulation of constructed action were used in an exaggerated or moderate way by both signers for the *wheelchair* anecdote. For example, with all audiences Kevin produced emphatic waving of his arms to indicate how one character obtained another's attention by greeting them from across the room. This was achieved by the use of either both arms (adults in the formal setting) or just one arm (adults in the non-formal setting and the children at school), and in all cases the arm extension was above Kevin's head.

As with the anecdote *high-five*, in the *wheelchair* retellings the two signers seemed to have produced more emphatic torso shifts for transitions from narrator to a character with adults in formal settings and children at school than in the non-formal environments with adults. This is certainly true for Kevin, who turned 90 degrees to his left to indicate the interaction with a character, whereas there was only a slight shift with adults in the non-formal setting for the same. James' more explicit use of torso shift was seen in his transition to the hunching posture of the person pushing a wheelchair in both formal and school settings. This is perhaps mirrored by Kevin's transition to a hunching posture with the children, but not with the adult audiences.

5.3. Presentation

In the *presentation* anecdotes, the use of leg and feet movements by Kevin – for walking or for shifting weight as if to indicate lower body movement – occurred for the children and senior citizens in the non-formal setting, but not the adults in the formal context. These movements signaled the depiction of someone tripping while ascending stairs. In particular, with the adults in the formal setting, Kevin took small steps in place, but did not move forward or backward. However, with both of the other audiences he did take several steps forward and backward. Fig. 3 shows a series of still frames from the video that were captured from the sequence of steps that James took while depicting Don's tripping for the children. James also used his lower body to depict tripping with his friends in the non-formal setting, but he primarily seems to be shifting his weight and taking steps in place, rather than walking and being displaced from where he was standing. James was seated when sharing the narrative with the children at school, and he did not, at any time, stand up to depict walking during the recounting of his narrative at that location.

The torso movements that demonstrated constructed action (not those that show a transition from narrator to character) produced by the participants for this anecdote were perhaps most emphatic for the children, although they did occur in all contexts. For Kevin, both groups of adult audiences did not appear to elicit forward torso movement to show how that part of the body would have moved during the tripping sequence. However, the children's version contained more pronounced torso movements—especially during the sequence where Kevin moves forward as if he is about to trip and come close to falling. James' use of the torso was also more pronounced with the children than with either group of adults. For example, with the adults in the non-formal setting, James did not move his torso or lean to depict a person falling when describing Don as he was tripping on the stage. In the school setting, however, he emphatically moved his torso and leaned nearly to the location of the tabletop in front of him to depict the fall. Regarding the adults at the commencement address (formal setting), he only shifted his torso slightly to depict the



Fig. 3. Kevin taking steps for the children during the *high-five* anecdote.



Fig. 4. James' examples of torso movement in all settings to depict Don's tripping action during the *presentation* anecdote.

same movement. See Fig. 4 for three still frames from the video of James depicting Don's tripping action with his torso and arms/hands across the different audiences and settings.

In James' rendition of this anecdote, there is a clear difference across audiences and settings in his use of arm and hand movements for constructed action. For depicting the tripping action of Don Pettingill during the retelling of the *presentation* anecdote, James varied the extension of his arms for each rendition. While in the formal and classroom settings his arms were only partially extended, in the non-formal setting his arms were nearly fully extended.

Head movements and facial expressions of both signers appear to be more variable for this anecdote. In some cases, there are examples of constructed action by the head and face that occur in one or two of the settings, but not all three. And, there are also examples where a facial expression that appears to be emotive (i.e., constructed action) is used in one setting but a grammatical non-manual signal is used in another to depict the same information (e.g., James' depiction of 'clumsiness' during the tripping sequence).

5.4. Constructed action totals

Whereas each of the participants in this study did produce constructed action with most body parts that were scrutinized across all audiences and all settings, there were some differences between the two with respect to frequency and degree of constructed action. Kevin appears to have used constructed action more than James did (a total of 69 examples across all body parts versus 50 examples, respectively), and the degree of his constructed action was also generally more emphatic than that of James. As evidence for the latter, Kevin produced a total of 27 instances of exaggerated constructed action whereas James produced only seven examples. The total instances of constructed action, as presented in Tables A.1–A.6, are summarized in Table 5, which includes, in parentheses, the proportion of each type of constructed action for each signer.

In Table 6, the degree of constructed action across settings for each signer is presented. The table combines all types of constructed action (i.e., which body parts exhibited constructed action), which differs from the descriptions presented in sections 5.1–5.3.

The data from Table 6 are presented graphically in Fig. 5 with data from both signers combined. This method of presentation highlights a couple trends. First, the child setting seemed to elicit the least use of "slight" constructed

Table 5
Total use of constructed action as represented by individual tokens and (proportion of total).

Participant	Children at school	Adults in non-formal setting	Adults in formal setting	Total
Kevin	26 (37.7)	23 (33.3)	20 (29)	69 (100)
James	13 (26)	19 (38)	18 (36)	50 (100)

Table 6
Total use of constructed action by degree as represented by individual tokens and (proportion of total).

	"slight"			"moderate"			"exaggerated"		
	School	Non-formal	Formal	School	Non-formal	Formal	School	Non-formal	Formal
Kevin	0 (0)	6 (8.7)	6 (8.7)	13 (18.8)	9 (13)	8 (11.6)	13 (18.8)	8 (11.6)	6 (8.7)
James	2 (4)	10 (20)	6 (12)	8 (16)	6 (12)	11 (22)	3 (6)	3 (6)	1 (2)

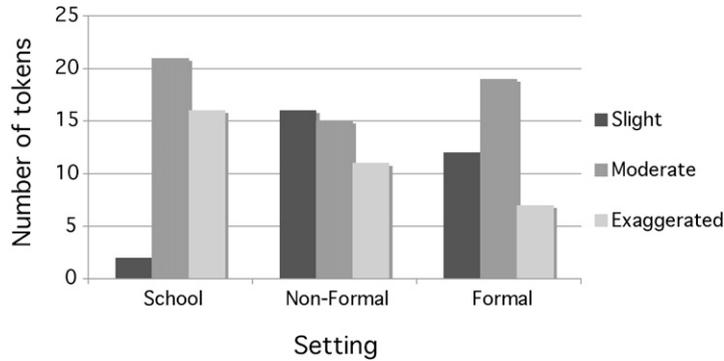


Fig. 5. Degree of constructed action within each setting for both participants.

action. In other words, both signers preferred to use “moderate” (James) or “moderate” and “exaggerated” (Kevin) constructed action with the children. Second, for both signers the formal settings with adults elicited the least amount of exaggerated constructed action. This hints at a relationship between degree of constructed action and setting or register. A Chi-Square analysis of the data from both signers reveals a significant association between degree of constructed action and setting or register ($\chi^2 = 14.8$, $df = 4$, $p = .005$).

6. Discussion

6.1. Constructed action inter-signer trends

We recognize that gestural data from two native signers do not allow for broad generalizations about register/style variation in ASL. And, it is clear that we have not presented linguistic data such as phonological, morphological, or syntactic variables in order to examine how constructed action and linguistic devices pattern with respect to each another. However, we believe that the constructed action data described here provide us with representative examples of the ways in which a native signer uses his body for communication with different audiences and in different contexts that can be said to differ in terms of formality. So, we describe what appear to be trends in the data in hopes that future work will continue to evaluate the preliminary results that have been obtained here.

The following statements summarize the data with regard to constructed action and specific body parts:

- constructed action that involves arm/hand movements occurred in all contexts and with all audiences considered here, but such movements appeared most emphatic when signing to children and to adults in non-formal settings,
- torso movements that depict constructed action occurred in all contexts and with all audiences considered here, but they appeared most emphatic when directed toward the children,
- constructed action that involves the legs and feet occurred with children and with senior citizens in non-formal settings, but not with adults in other contexts,
- torso shifts that signal a transition to constructed action (i.e., from narrator to character) seemed most emphatic when signing to the children and to adults in the formal settings, but they appeared most subtle when signing to adults in non-formal settings,
- constructed action consisting of head movements and facial expressions occurred in all contexts and with all audiences considered here, although no clear patterns for the use of these body parts is evident.

We use these occurrence trends in combination with the results of the Chi-Square analysis to make some suggestions about the general character of constructed action across the different audiences and contexts. In general, constructed action seems to be most overt and generally most emphatic for children in school settings. This is true for most of the body parts of constructed action that we consider (e.g., lower body, torso, head, face) and for the torso shift that signals a transition to constructed action from narrator perspective. We argue that this emphatic quality is in line with common characteristics of narratives that are shared with children. Additionally, constructed action seems to be least emphatic for audiences of adults in formal settings. The results of the Chi-Square analysis seem to support Bell

(1984, 2001) and the general claim that language users often design their language production for their audience, and that is manifested partly in “degree of constructed action” in the current study.

Another point that we would like to make is that the torso shift that precedes constructed action (i.e., a transition from narrator to an enactment of a character) can also be emphatic with adult audiences in formal contexts for depicting transitions between two characters in interaction with each other or for showing a transition to a single character’s movements. We argue that among the reasons for the salient torso shift in the formal contexts is the need, in some instances, to be clearly visible in formal settings with large audiences. Additionally, we discuss how the audiences in non-formal settings seemed to elicit the most constrained or subtle use of the torso shift as a marker of transition to constructed action. As opposed to the transitional torso shift with larger audiences, it may be the case that smaller audiences and short distances between the signer and the interlocutors may allow for the use of more subtle cues for signaling the difference between narrator and a third-person character.

6.1.1. *Child-directed in school settings*

Considering all the audiences and contexts included in this work, the three versions of the anecdotes as directed to the children can be characterized as being either the most emphatic (Kevin) or just as emphatic (James) as all the others with respect to constructed action production. This is true for most of the body parts that we consider—with the exception that James could not use his legs for constructed action with the children because he was seated during the recounting of the narrative to them. Whether or not he would have produced constructed action with his legs (e.g., by walking) is not clear. As noted, the two participants varied in the degree to which each produced constructed action—with Kevin being more emphatic and James being comparatively more constrained, although neither presenter used much constructed action of the “slight” degree with the children. This result may be one of the primary factors in the significant association between degree of constructed action and setting or register from the Chi-Square analysis. The point is simple: if signers are going to use constructed action with children, it may likely be moderate or exaggerated in degree rather than subtle.

The emphatic nature of constructed action for the children differs from what was reported by Bekken (1989) for the hearing mothers and their use of co-speech gesture with their daughters aged 18-months. In that work, the gestures used with the infant-directed speech were simplified in comparison with those gestures that accompanied the speech directed to the adult interlocutors. Keep in mind that Bekken focused on different types of gesture and not the class of iconics that we refer to as constructed action in this work. Additionally, different results obtained across the two studies may be a factor of the age of the children: Bekken looked at infants whereas the children in the current study were each nine- or ten-years old, and they were in a school setting. It may be the case that adults use less constructed action with infants and very young children than with older children—especially if the constructed action with older children is intended to support comprehension in addition to making the narrative interesting for the children. Such a suggestion awaits further study for confirmation.

More overt and emphatic use of constructed action with the children in school settings can perhaps be compared to some characteristics of spoken language teacher-talk in a classroom. In classrooms with children, teachers often employ certain strategies to obtain and maintain the attention of their students. For example, an instructor may speak louder than usual or perhaps with a higher pitch than what she normally uses. Hellermann (2002), in his micro-analysis of prosody and interactions in a spoken language classroom setting, found that this type of language use even occurs with older students, since his data are from 9th to 12th grade classrooms. We are aware of no studies that have been undertaken which focus specifically on the use of ASL prosody in a classroom with Deaf students. It may be the case that more emphatic constructed action is one characteristic of such prosody in a classroom with such students—especially when the teacher is sharing a narrative with the students. Other authors have also noted the specialized intonation that teachers exhibit in the classroom (Gumperz and Herasimchuk, 1975 as quoted in Edwards and Westgate, 1987; Hewings, 1992; Brazil, 1981).

Particularly emphatic constructed action, especially that of the full torso and lower body, may serve to increase clarity in order to avoid misunderstandings. Each time Kevin shifted his body 90° to the left, it was perfectly clear that he was no longer in narrator mode but rather depicting the character from the narrative. This might be likened to a caregiver telling a child a story and dramatically changing her pitch of voice from character to character.

6.1.2. *Adult-directed in formal settings with large audiences*

As noted earlier, Zimmer’s (1989) study of register variation in ASL suggested that formal signing seems to exhibit the use of pronounced body shifts for reported speech. That claim is supported by the data from the present work since such shifts were also observed in the signing of the two participants in the formal contexts. It may be the case that these

pronounced shifts as transitions from narrator to another character serve to foster visibility for audiences—especially when some people in the audience may be viewing the signing from greater-than-average distances.

One reason for the clear torso shifts in the formal contexts, especially when transitioning to depict how two people interact, may lie in the fact that such shifts likely aid in visibility of the signer from long distances. Both settings for the formal data collection took place in large rooms with hundreds of people present, and this may have influenced the ways in which the signers produced constructed action. We suggest that a signer's desire to be clear about material (either linguistic or non-linguistic) that can be attributed to the narrator versus that of a character in a narrative is what influences the clear use of torso shift with large audiences. Whether or not a formal setting is also a significant factor is unclear since our only situations with large audiences involved formal settings. Future work will be necessary to tease apart the variables of audience size and formality with regard to transitional torso shifts.

There are other constructed action trends for the audiences in formal settings that can be associated with other body parts. First, there was no walking or pronounced use of the lower body for depicting movement with these audiences in these settings. This was certainly true for James since he had a podium in front of him, although he could have moved it to one side to depict a character's forward movement or tripping, by physically walking. But, it was also true for Kevin, who did not have anything obstructing his ability to walk forward and depict characters' movement as he did in the other settings. Additionally, constructed action as depicted by arms/hands and head and facial expressions seemed more variable in the formal setting. There are examples of emphatic or exaggerated facial expressions (much like what was reported by Zimmer [1989] in her study of register variation in ASL), emphatic use of the hands/arms (i.e., outside of the signing space), but comparatively less exaggerated examples of constructed action with hands/arms and head and face were also provided. Perhaps the most noteworthy result, with respect to our first research question, is that the formal settings do promote constructed action production in all body parts except for the lower body. As noted, these data generally support aspects of formal register in ASL as reported in Zimmer (1989).

It is clear that our first research question was answered: Formal settings do support constructed action production. And, with the exception of use of the lower body, the constructed action can range from emphatic to subtle in nature. Based on the data from the two signers in this study, formal settings do seem to elicit comparatively fewer examples of emphatic constructed action than child-directed and non-formal settings do. This is also one of the trends that may be captured in the significant results from the Chi-Square analysis of associations.

6.1.3. Adult audiences in relatively intimate, non-formal settings

It seems that the most noteworthy trend that surfaced in the data from non-formal contexts has to do with the lack of torso shift for transitioning into construction action: neither participant produced comparably noticeable shifts for the transition to a single character's actions or the transition to two characters interacting. This finding seems to parallel Zimmer's (1989) description of non-formal register in her study. This lack of torso shift is evident for the *high-five* anecdote for both signers, the *wheelchair* episode for both signers, and the *presentation* story in the case of James. This includes the fact that James did not produce a torso hunch nor a side-to-side head shift for the depiction of pushing a wheelchair as he did for the children in the school setting. What is particularly noteworthy about the lack of torso shift is that it has been claimed to be a common method for depicting the interaction of two or more characters in ASL.

These preliminary data raise the question about the obligatory nature of torso shift in different settings and with different audiences. Additionally, whether or not the torso shift transition to constructed action, as we have considered it here, should best be considered as a grammatical device of ASL (i.e., linguistic) or as part of constructed action (i.e., non-linguistic) is unclear. If it is the former, the transitional torso shift data may actually reflect a register/style difference for a grammatical device rather than a non-linguistic strategy for indicating the physical action of a character.

Various researchers have claimed that the torso shift that serves as a transition to another character, commonly referred to as *role shift*, is part of the grammar of a signed language. Padden (1986) described ASL data that suggested that there are constraints involved in role shifting, and she claimed that the communicative device interacts closely with the syntactic component of the language. Meier (1990) suggested that first person pronouns within a role shift constitute an argument for the distinction of first person and non-first person in ASL. Lillo-Martin (1995) and Lee et al. (1997) analyze role shift as part of grammar at the sentential level of structure. Researchers of other sign languages have made similar claims (e.g., Danish Sign Language: Engberg-Pedersen, 1993, Italian Sign Language: Zucchi, 2004; Mazzoni, 2006, 2008, Catalan Sign Language: Quer, 2005; Frigola and Quer, 2006, among others).

Other writers have noted that a signer's torso shift as a transition to another character resembles the use of the body with hearing spoken language users when they speak. Casey (2000, 2003) claims that there is a gestural origin to role

shift in signed languages, although it is not clear if she feels that it has become grammaticized, which she claims has occurred with verb agreement. McClave (2001) also discusses the gestural origins of role shift in ASL.

Descriptions of brain damaged patients and their ability to manage role shift also provide interesting data to consider. In one case, Loew et al. (1997) report the deficits of a right-hemisphere damaged signer of ASL who has most grammatical structures intact but struggles with the use of role shift to depict different characters. Hickock et al. (1999) also note that one of the two right-hemisphere damaged individuals in their study suffered disruptions to his ability to correctly manage spatialized discourse. In particular, that signer consistently made errors regarding the lack of appropriate body shift to indicate the different characters in an account of two people interacting with each other. Additionally, Corina et al. (1992) report that role shift could function as a compensatory strategy such as in the account of a left-hemisphere damaged signer who exhibited severe disruption of ASL performance but who pantomimed for communication. Such studies provide preliminary evidence for the suggestion that role shift, or what we have interpreted as a torso movement that signals a transition to another character, accesses right-hemisphere neural networks.

Perhaps one of the points of confusion about what has commonly been termed *role shift* in ASL and other signed languages is that some authors may be referring explicitly to the torso movement that marks a shift of perspective to another character (e.g., narrator to a character in a narrative) whereas other researchers use *role shift* without implying that the torso shift marker is necessary for the shift in discourse perspective. For a shift from narrator to another person's perspective (including reported actions [constructed action] and words [constructed dialogue]), the signer could also employ the use of more subtle markers (e.g., head turn, eyegaze), and the torso shift may not be necessary.

We briefly touch upon these few accounts of role shift in the literature to demonstrate the complexity of this device and why we have chosen to list it separately from our reporting of constructed action behaviors as exhibited by the signers' other torso movements. As noted earlier, this transitional role shift into constructed action has been characterized in grammatical terms and also as a gestural marker of the "voice" of another character. Our aim is to simply add to the data on transitional torso shift by pointing out that it seems to pattern differently based on audience and setting. Any account of this device should also take register/style data into consideration.

If we were to consider the pragmatic function of a torso shift to indicate the change from narrator to another character, there may be several reasons why one might expect more subtle torso shift for transition to constructed action in non-formal, or everyday, signing than in formal, adult-directed signing or signing directed at children. First, unlike the formal situations in this study in which there were large audiences, everyday non-formal settings more commonly include fewer people. Also, people in non-formal settings are most often situated closer to the signer than in the formal presentations given by the participants in this study. In early writings that detailed what an interlocutor likely perceives when situated at different locations from the speaker, Hall (1964) described four categories of distances and the various sensory cues (e.g., what is in the interlocutor's field of vision and what can be learned through the sense of smell) that are used to gain information that complements communication through verbal means.⁷ Hall drew parallels between his categories and the classifications for language use across registers that were advanced earlier by Joos (1961). In particular, Hall suggested that "public" distance (ranging from 10 to 30 feet or so) is one where more formal and frozen registers tend to be used. However, "social" distance (ranging from approximately 4 to 10 feet) is one in which "casual or consultative style", calling upon Joos' classifications, would be employed. Additionally, since signed language requires visual attention to the signer, close distances between the signer and addressee(s) may allow for more subtle differences in torso movement for transition to constructed action. Perhaps other cues from the signer such as eyegaze shifts and facial expressions, which may be more difficult to perceive from far away, are the markers of narrator versus third-person character in more casual settings with fewer people. However, we are not suggesting that non-formal signing styles are void of overt transitional torso movements; there are likely times when a signer chooses to be emphatic in order to communicate a certain point. This would be true for non-formal style as well as others, but the data from the present study show that constructed action can be comparatively more subtle in non-formal settings as opposed to formal settings. We suggest that minimal or subtle uses of transitional torso shift are appropriate with small or moderately sized adult audiences since it is likely that other cues about whose "voice" is being represented are comparatively more clear.

For comparison purposes, another point that should be made is that a non-formal style of speaking is often riddled with other types of reductions such as *ellipsis* (i.e., omission) and *extraction* (i.e., the speaker 'extracting' "... a minimum pattern from some conceivable casual sentence" Joos, 1961:30–31). This is not the case with formal styles of speaking where one usually enunciates clearly and utters complete sentences.

⁷ We thank Adam Kendon for pointing out the work of Hall and connections of his work to the current study.

Other than the torso shift for transition to constructed action, the non-formal setting and adult audiences did appear to promote the use of other body parts by the signer—even use of the lower body in some cases, for constructed action production. This was true in subtle to emphatic uses of the face and head, arms/hands, and even lower body. In short, constructed action can regularly be found in signing directed to adults in non-formal settings.

6.2. *Notable inter-signer differences*

6.2.1. *Audience design or personality differences?*

As noted in section 5.4, there were clear differences in constructed action production between the two signers. Since Kevin seemed to use constructed action more than James, and the degree of constructed action was more emphatic than that of James, it appears that he might be more free about using that communication device within his ASL. However, it should also be noted that he used constructed action the most with the children—including emphatic variants of the communication device. Whereas Kevin was a teacher at the residential school where the filming occurred, he normally worked with students at the high school level, which likely impacted the accommodation strategies that he used with the children. In other words, the children may have been more like “strangers” to Kevin, and the constructed action would have been one way for him to attempt to encourage comprehension while simultaneously making the narrative more vivid, interesting, and even memorable for these children with whom he may not have interacted previous to the data collection session (Winston, 1991, 1992 for discussions of constructed action and vividness). In opposition to this, James uses constructed with the least amount of frequency with the children, which may be partially due to the fact that he was their regular teacher for a couple hours each week. He may have been aware of the types of accommodation strategies that he needed to use with the children because he was more familiar with what they knew and what they did not know. Additionally, these children were likely accustomed to James’ signing characteristics (e.g., common sign choices, commonly fingerspelled words, repeated facial expressions, etc.), which could have yielded different accommodation strategies (i.e., not as much constructed action) in comparison to Kevin when signing to his group of children. In short, Bell (1984) might claim that Kevin was attempting to accommodate to his child audience by using more constructed action—perhaps for comprehension purposes and to make the story more enjoyable. James, on the other hand, did not mirror Kevin’s interaction with the children. It should also be stated that one other possible factor may be that James was seated during his sharing of the narrative with the children, whereas Kevin was standing.

Differences in the use of exaggerated constructed action across the two signers are particularly striking. In total, Kevin used that degree of constructed action for approximately 39% of all his tokens of that device, whereas exaggerated forms constituted only 14% of James’ tokens. There might also be personality differences between the two signers that could cause each to use constructed action to differing degrees. To our knowledge, no work has looked at the role of personality in constructed action use, although that might be a useful approach to this line of inquiry for the future. However, one other factor may be the age difference between the two signers: James is approximately 20 years older than Kevin. There may be a generational difference in the use of constructed action that is being captured within these data. As with questions about personality, we leave age differences and constructed action to future work on the topic.

6.2.2. *Role of audience versus setting*

These data demonstrate that constructed action does vary across different audiences and settings, which provides an answer to our second research question posed in section 2. Although, since an analysis of linguistic data across audiences and settings is not provided, we cannot compare how the constructed action patterns with respect to register and/or style changes within the linguistic signal. The presentation and discussion of constructed action patterns that surfaced in the data, of course, provide a response to our third research question about the body parts and degrees of constructed action use across audiences and settings. And, our first research question was answered much earlier by showing how constructed action is alive and well in formal settings. However, what may be clear to the reader is that the naturalistic situations accessed for this study do not allow for a clear separation of audience from setting.

In Bell’s (1984) theory of style variation, the audience is the primary factor that affects style shift. That theory might predict that speaking to an audience in an informal setting (e.g., a backyard cook-out with friends and family) may cause a speaker to style shift in a similar way as when speaking to the same audience in a formal setting (e.g., a eulogy delivered to friends and family). The data from the current study do not allow for the investigation of style-shifting across settings (i.e., differences in formality) for the same audience. They also do not allow us to clearly determine to what extent it is either the audience or the setting – or a combination of both factors – that influence the constructed

action forms that were produced. In the current study, audience and setting are inextricable, and each may be contributing to the constructed action forms that were produced. Unfortunately, this constraint is due to the “naturalistic” nature of the data collection. Future work on style and register variation will need to discern how to tease apart the role of audience versus setting for language use. There is likely an affect that can be attributed to audience, as Bell (1984, 2001) would probably suggest, but the degree to which all the results can be attributed solely to audience and not to formality of the situation is unclear.

6.3. *Implications and suggestions for future research*

The findings of this paper are likely to be important to various readers. By addressing communication as it differs across settings and audiences (i.e., *registers/styles*), we feel that linguists will find the results of interest since they provide more examples of how people vary their communication based on various factors. However, a number of other readers may feel that this work is important for their own study and professional endeavors. Teachers of ASL, signed language interpreters, and English as a Second Language (ESL) teachers who work with fluent signers of ASL will perhaps realize that constructed action is a rich and complex communicative phenomenon that is influenced, as is language, by register/style variables.

We hope that others feel that this study provides a basis for additional examinations of constructed action. Certainly, analyses on larger corpora (i.e., more participants) are needed in order to make more confident suggestions about constructed action trends. In future studies, we suggest that researchers attempt to control for more variables than we were able to manage (e.g., whether the signers are standing versus seated during their productions, the ages of the signers and the audience, and the familiarity of the signers with audience members). Additionally, work on constructed action and variation as it occurs as a complement to other signed languages is also needed. Finally, work on the use of constructed action as an accompaniment to spoken language discourse will help to illuminate how this communicative device is used in conjunction with a signed language as opposed to as a complement to a spoken language. Clearly, there is much work that needs to be performed in this rich area of inquiry.

7. Conclusion

This study was concerned with the use of constructed action across different audiences and settings. Constructed action is analyzed here as primarily gestural in nature—based on the premise that constructed action does not exhibit common features of language that have been described in the literature. One of the primary questions driving the study was whether or not a signer would produce constructed action in formal settings. In order to address this question, the account of a Deaf leader’s life was recounted by two native Deaf signers of ASL. Not only did we obtain data from a formal setting, but we also collected data in informal settings and residential school classrooms for each of the signers.

Among the results of this study is the claim that constructed action does indeed occur throughout various registers/styles: from formal events to informal gatherings to grade school settings. Additionally, in a general sense, audience and setting appear to influence the use of gesture insofar as certain aspects of constructed action (e.g., use of the signer’s lower body) seem more acceptable with some audiences and settings over others. The classroom setting with 9–10-year-old children elicited the least amount of the lowest degree of constructed action (labeled as “slight” in this work), and this finding may be one factor in the significant association found between degree of constructed action and setting/register. Also with respect to degree, it appears that emphatic constructed action is least common in formal settings. Interestingly, the most subtle use of one device that supports constructed action (a torso shift for marking a transition from narrator to a character) occurred in the non-formal settings with adults despite the assumption that casual settings might be where signers are the most free to gesture with their bodies. As such, this study reveals how different body parts to support constructed action use can pattern differently across audiences and settings. There are also characteristics of the formal settings and use of constructed action that support previous works on the topic.

It is also clear from the data of this study that variation can be present across signers in their production of constructed action. Factors such as personality and very specific characteristics of the audience (e.g., if the signer is familiar with them or not) may influence the forms that are produced.

From these data we know that formal events do not prevent a signer from using gesture in the form of constructed action, although perhaps the degree of constructed action produced is influenced by formal register/style. This

provides useful information as we continue to consider how gesture is an intricate complement to language and how there are perhaps systematic ways that we produce gesture in conjunction with language.

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Appendix

Table A.1
Kevin's renditions of *high-five*.

Body part	Action	Setting: degree and details of action
Arms and hands	'high-five' gesture/sign to show excitement	<i>Formal</i> : moderate, within signing space <i>Non-formal</i> : moderate, within signing space <i>School</i> : exaggerated, above signer's head
	'winning' gesture to show excitement	<i>School only</i> : exaggerated; hands in fist configurations, arms are raised, all characterized by a pronounced tenseness
Facial expressions	'shock/surprise'; immediately prior to 'high-five'	<i>Formal</i> : exaggerated; mouth open <i>Non-formal</i> : moderate; mouth open <i>School</i> : moderate, mouth open
	'joy'/'excitement' during 'high-five'	<i>Formal</i> : exaggerated, mouth open for several signs, brows raised <i>Non-formal</i> : moderate; mouth open and transitions to smile <i>School</i> : exaggerated; smile continues for several seconds
Head	Head jerk during joy/excitement	<i>Formal only</i> : moderate
	Orientation change toward other character prior to 'high-five'	<i>Formal</i> : action does not occur <i>Non-formal</i> : moderate <i>School</i> : moderate, includes backward tilt at initiation of the segment
	Orientation changes depict looking at character during 'high-five' and immediately after	<i>Non-formal only</i> : moderate; signer turns head as if looking at character and turns back to view audience
	Forward thrust before initiating constructed dialogue	<i>School only</i> : moderate
	backward lean and change of orientation immediately before 'high-five'	<i>School only</i> : exaggerated; signer moves outside of the camera frame for this portion
Torso: CA	Forward thrust for approaching character during 'high-five'	<i>School only</i> : moderate, right side of torso leans in the direction of the character who is the recipient of the 'high-five'
Lower Body	Legs and feet movement to depict walking toward other character	<i>Formal</i> : slight; signer moves feet minimally when representing a different character <i>Non-formal</i> : action does not occur <i>School</i> : moderate; signer steps into different locations when portraying the two characters
Torso: transitional	Orientation shift to signal character depiction	<i>Formal</i> : slight; turning to the left <i>Non-formal</i> : slight; turning to the left <i>School</i> : exaggerated; turning to the left and backward lean for pivot

Table A.2
James' renditions of *high-five*.

Body part	Action	Setting: degree and details of action
Arms and hands	'high-five' gesture/sign to show excitement	<i>Formal</i> : moderate, arms clap in front of face <i>Non-formal</i> : moderate, yet rapid, arms clap in front of face <i>School</i> : moderate, arms clap in front of face
Facial expressions	'disappointment' when explaining that a character did not complete college	<i>Formal only</i> : slight, protruding tongue, inverted smile, and tensing of other facial muscles
	'shock/surprise'; immediately before 'high-five'	<i>Formal</i> : moderate to exaggerated, mouth open <i>Non-formal</i> : exaggerated, mouth open <i>School</i> : moderate, mouth open
	'joy/excitement during 'high-five'	<i>Formal</i> : slight smile <i>Non-formal</i> : slight smile <i>School</i> : exaggerated smile
Head	Head jerk during joy/excitement	<i>Formal only</i> : moderate
	Sideways tilt during disappointment	<i>Formal only</i> : slight
	Forward thrust during shock/surprise	<i>Non-formal only</i> : slight
Torso: CA	Forward movement toward other character during 'high-five'	<i>Formal</i> : slight <i>Non-formal</i> : slight <i>School</i> : action does not occur
Lower body	Legs and feet movement to depict walking toward other character	<i>Formal</i> : action does not appear to occur (not visible) <i>Non-formal</i> : slight <i>School</i> : does not occur (signer seated)
Torso: transitional	Orientation shift to signal character depiction	<i>Formal</i> : moderate for first character, slight for second character <i>Non-formal</i> : action does not occur <i>School</i> : action does not occur

Table A.3
Kevin's renditions of *wheelchair*.

Body part	Action	Setting: degree and details of action
Arms and hands	Holding wheelchair's hand grips	<i>All contexts similar</i> : moderate, both hands, although not visible in all contexts
	Wave for greeting	<i>Formal</i> : exaggerated; both arms extended; hands above head, wave for 1–2 s <i>Non-formal</i> : exaggerated; left arm extended and hand above head, wave for ~2 s <i>School</i> : exaggerated; left arm extended and hand above head, wave for ~2 s
Facial expressions	'surprise/joy' during greeting	<i>Formal</i> : moderate; mouth open, eyebrows raised <i>Non-formal</i> : exaggerated; mouth open, eyebrows raised, continues for several seconds <i>School</i> : moderate; mouth open
	'focused' during wheelchair pushing	<i>Formal</i> : appears to be non-manual signal [puckered lips] <i>Non-formal</i> : action does not occur <i>School</i> : moderate; facial muscles appear moderately tense, lips appear pressed together, brows appear slightly lowered
Head	Orientation change from left-to-right during wheelchair pushing or man walking in lobby	<i>Formal</i> : slight <i>Non-formal</i> : moderate <i>School</i> : moderate
	Lateral movement during greeting	<i>Formal only</i> : slight, movement may be sympathetic to the two-handed wave

Table A.3 (Continued)

Body part	Action	Setting: degree and details of action
Torso: CA	Orientation changes of man walking in lobby	<i>Non-formal only</i> : moderate
	Orientation changes during pushing of wheelchair	<i>Formal</i> : action does not occur <i>Non-formal</i> : slight <i>School</i> : moderate
	Hunching posture during wheelchair pushing	<i>Formal</i> : moderate <i>Non-formal</i> : action does not occur <i>School</i> : moderate
Lower body	Walking (either person pushing wheelchair or man walking in lobby)	<i>Formal</i> : action does not occur; although may be shifting weight from one leg to the other <i>Non-formal</i> : slight; signer may take small steps in place <i>School</i> : exaggerated, signer takes 4–5 steps forward and backward
Torso: transitional	Shift to hunching posture of person pushing wheelchair	<i>Formal</i> : slight <i>Non-formal</i> : slight, but rapid <i>School</i> : moderate
	Shift to role of character interacting with another character	<i>Formal</i> : exaggerated; 90° turn to the left <i>Non-formal</i> : slight <i>School</i> : exaggerated; 90° turn to the left

Table A.4

James renditions of *wheelchair*.

Body part	Action	Setting: degree and details of action
Arms and hands	Holding wheelchair's hand grips	<i>Formal</i> : both hands; moderate, above waist height—above the podium in front of signer <i>Non-formal</i> : both hands; moderate, slightly above waist height <i>School</i> : both hands, moderate, slightly above waist height
	Forward and side-to-side movement of arms as if pushing a wheelchair	<i>Formal</i> : moderate <i>Non-formal</i> : slight <i>School</i> : moderate
	Hand waves to other character during greeting	<i>Non-formal only</i> : right hand, exaggerated, arm is fully extended and wave is repeated
Facial expressions	'joy' during greeting	<i>Formal</i> : moderate, smile <i>Non-formal</i> : moderate, smile <i>School</i> : slight, smile
Head	Downward thrust to indicate Don seated in wheelchair	<i>Formal</i> : moderate <i>Non-formal</i> : action does not occur <i>School</i> : moderate
	Side-to-side movement during pushing of wheelchair	<i>School only</i> : moderate
Torso: CA	Side-to-side or forward movement during pushing of wheelchair	<i>Formal</i> : slight <i>Non-formal</i> : no context for action <i>School</i> : slight
	Downward thrust during greeting	<i>Non-formal only</i> : moderate
Lower body	Legs bend at knee joint during greeting to depict moving closer to the character in wheelchair	<i>Non-formal only</i> : moderate
Torso: transitional	Shift to hunching posture of person pushing wheelchair	<i>Formal</i> : moderate <i>Non-Formal</i> : slight <i>School</i> : moderate

Table A.5
Kevin's renditions of *presentation*.

Body part	Action	Setting: degree and details of action
Arms and hands	Arms moving about in circular fashion to depict "maintaining one's balance"	<i>Formal</i> : no constructed action with arms/hands <i>Non-formal</i> : exaggerated, arms extended above head <i>School</i> : no constructed action for this action
	Arms depicting the opening up of coat (before removing)	<i>School only</i> : moderate
Facial expressions	'boredom' of children before "tripping" sequence	<i>Non-formal only</i> : slight, slightly open mouth, eyes appear to be rolling backward in their sockets
	'laughter/humor' of children after "tripping" sequence	<i>Formal</i> : no context for action <i>Non-formal</i> : exaggerated, mouth open <i>School</i> : exaggerated, mouth showing laughter and smiling
	'attentiveness' of children after signer indicates removal of coat and tie	<i>Non-formal only</i> : exaggerated signer's mouth is open and gaze is fixed on a point upward and at a distance
Head	Backward orientation shift to depict inattentiveness of children (i.e., chatting with those behind them)	<i>Formal</i> : exaggerated <i>Non-formal</i> : exaggerated, signer looks back to his left, rolls his head, and then looks back to the right <i>School</i> : no context for action
	Downward and left-to-right movement during "tripping" sequence	<i>Formal</i> : exaggerated <i>Non-formal</i> : exaggerated <i>School</i> : exaggerated
Torso: CA	Orientation shift to depict inattentiveness of children	<i>Formal only</i> : moderate, signer turns to face rightward with his face oriented further back
	Forward shift during "tripping" sequence	<i>Formal</i> : moderate <i>Non-formal</i> : moderate <i>School</i> : exaggerated
Lower body	Feet and legs movement to depict keeping balance while falling	<i>Formal</i> : slight, signer may lift foot (not in camera frame), but displacement from where he is standing does not appear to occur <i>Non-formal</i> : exaggerated, signer takes several steps forward and pretends to trip <i>School</i> : exaggerated, signer steps backward, turns 90° to his left, takes 3–4 steps, pretends to trip by appearing to stumble, and walks out of the camera frame
Torso: transitional	Downward shift to depict children viewing presenter	<i>Formal only</i> : moderate
	Orientation shift to signal character depiction	<i>School only</i> : exaggerated; 90° turn to the left

Table A.6
James' renditions of *presentation*.

Body part	Action	Setting: degree and details of action
Arms and hands	Arms moving about in circular fashion to depict "maintaining one's balance"	<i>Formal</i> : moderate, arms partially extended <i>Non-formal</i> : exaggerated, arms almost fully extended for a moment <i>School</i> : moderate, arms partially extended
Facial expressions	'clumsiness' during "tripping" sequence	<i>All settings</i> : mouth adverbial to indicate 'clumsily' articulated during the classifiers for "legs" and before the hands and arms begin sequence of "maintaining one's balance"; not coded as constructed action
	'fright'/'concern' just before "tripping" sequence	<i>Non-formal</i> : moderate, widened eyes, wrinkles on forehead <i>School</i> : moderate, widened eyes, wrinkles on forehead
	'surprise' just before tripping sequence	<i>Formal only</i> : exaggerated, mouth and eyes open wide

Table A.6 (Continued)

Body part	Action	Setting: degree and details of action
Head	Downward movement to depict falling unexpectedly	<i>Formal</i> : moderate <i>Non-formal</i> : slight <i>School</i> : exaggerated
Torso: CA	Torso shifting during movement of arms in circular fashion	<i>Formal</i> : slight <i>Non-formal</i> : slight <i>School</i> : exaggerated; approximately 2 s in duration
Lower body	Feet and leg movement to depict balancing while falling unexpectedly	<i>Non-formal only</i> : slight, it appears that the signer lifts his feet from the ground and bends his knees slightly during the “maintaining one’s balance” sequence
Torso: transitional	No action	Torso orientation change is not evident; signer does not seem to transition but rather begins constructed action from default torso orientation

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