

Interpreter Experience and the Use of Constructed Action

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### **Abstract**

American Sign Language (ASL) is a linguistically complex, visual language that functions independently of spoken language. One feature of ASL that is particularly interesting is constructed action, which is often used within the language for clarity in narrative form. While linguistic researchers have recently begun to study the usage of this phenomenon by native ASL users, none has yet addressed its use among second language users (L2) and, more specifically, sign language interpreters. It is thought that L2 interpreters with a greater amount of experience in the field produce ASL in a more “native-like” manner than novice interpreters, so it would follow that they employ constructed action more frequently in their work. In this study, the researchers analyze constructed action usage among interpreters who have varying degrees of experience in the field, and seeks to answer the following questions: Do years of experience of a given interpreter affect the frequency with which that interpreter uses constructed action? Does the frequency with which interpreters use constructed action differ at different time segments in a given text (i.e., beginning, middle, or end)? While the researchers did not find evidence that years of experience influence the use of constructed action, their study provides evidence that the frequency with which constructed action is used does differ according to time segments in a given text. Use of constructed action at the beginning of a text seems to predict subsequent use of constructed action at the end of the text.

*keywords: Constructed Action, Non-Manual Markers, American Sign Language, Interpreting, Narrative Discourse, Role Shift, Body Shift, Eye Gaze.*

Beginning with the landmark works of Dr. William Stokoe in the 1960s, which analyzed the linguistic features of American Sign Language (ASL), researchers have identified various communicative devices present in ASL. One such device is known as *constructed action*, which “is the creative construction of an event described by a signer in ASL discourse...[wherein] [t]he signer assumes the role of the character and can demonstrate the character’s manner or expression while describing his or her appearance” (Metzger, 1995, pp. 255-266). It has also been referred to as *role playing, role shifting, taking on the role of a character, reported action, performatives, spatial mapping, referential shift in discourse and shift in perspective* (Metzger, 1995; Thumann, 2011; Winston, 1991). When a signer utilizes constructed action, there occurs a visible shift of the signer from the role of narrator, to the role of a human or nonhuman actor (Metzger, 1995).

### **Parameters of Constructed Action**

A review of the existing literature shows that scholars and linguists have identified several features that signers employ when using constructed action and that there “seems to be general agreement that signers use their body, head, and eye gaze to report the action, thoughts, words, and expressions of characters within the discourse” (Metzger, 1995, p. 256). The use of these features as indicative of constructed action has been confirmed by many other researchers (Padden, 1986; Rayman, 1999; Thumann, 2011). In her work on the subject, Thumann (2011) notes that a change in facial expression of the signer is also indicative of a shift to constructed action, where “the signers’ expression change[s] from one understood to be that of the presenter to one understood to represent a subject”(p. 52). Furthermore, when utilizing constructed action,

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“[a] signer takes on the role of some referent, which frequently also involves adopting certain behaviors, features of appearance, and other characteristics of that referent” (Bayley, Lucas & Valli, 2001, p. 167). Changes in body and/or head position, facial expression, eye gaze, et cetera, to indicate constructed action may be used independently, but most frequently co-occur in some manner (Thumann, 2011).

### **Factors that Influence the Use of Constructed Action**

While a considerable amount of research has been done on constructed action in ASL, this work is almost entirely focused on its occurrence at the semantic and discourse levels. A review of the literature identified no research on this feature as it is used by ASL interpreters. Additionally, there is little mention of its use in relation to second language (L2) users. However, it is interesting to note that of the two studies that did mention L2 ASL users (i.e., Metzger, 1995; Thumann, 2011), both indicated that the identification and use of constructed action is challenging and “not generally easily mastered by second language learners” (Metzger, 1995, p. 263).

No studies were found to have focused on a signer’s demographic information (e.g.: male vs. female, native ASL user vs. non-native ASL user, etc.) and its potential to influence the use of constructed action in ASL. Indeed, almost all research thus far has focused on the use of constructed action by Deaf, native ASL users within a narrative. In response to this dearth of research on the factors that influence an interpreter’s usage of constructed action, this research was undertaken. The study seeks to answer the following four research questions:

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- Does amount of experience influence the frequency with which interpreters use constructed action, where the text allows for such construction?
- Does the percentage of time an interpreter spends in the Deaf community influence the frequency with which he/she uses constructed action?
- Does the amount of time an interpreter spends interpreting each week, influence the frequency with which he/she uses constructed action?
- Does the frequency of use of constructed action vary at the beginning, middle and end of a text?

### **Method**

#### **Sample**

The data for this research study was established via the following method. The data used for this study were provided by the Northeastern University American Sign Language Program and were comprised of 19 samples of interpreting work recorded over the span of two months, from December 2009 to January 2010. All interpretations were simultaneous, English to ASL. Collection of these videotapes was approved by Northeastern University's Institutional Review Board and then made available to the student researchers. Demographic information for each interpreter was self-reported and collected by Northeastern University's ASL Program. Demographic information for the selected interpreters is presented in Table 1.

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Table 1

*Selected Interpreters' Demographic Information*

Interpreter number	Gender	Years of experience*	Percentage (%) of non-work time in Deaf community	Hours per week interpreting
1	F	12	26-50	1-5
2	F	9	51-75	31-35
3	F	9	11-25	31-35
4	F	9	1-10	31-35
5	M	8	76-100	26-30
6	M	7	1-10	31-35
7	F	6	1-10	6-10
8	F	5	1-10	31-35
9	F	4	51-75	16-20
10	F	3	11-25	26-30
11	F	1	26-50	11-15
12	F	0	11-25	26-30

<sup>a</sup>Years of Experience was based on time from graduation from Northeastern University's Interpreter Education Program.

### **Interpreter Selection**

Out of 19 interpretation samples that were provided, 12 were selected for use in this research study. All interpreters in this study were graduates of the Northeastern University Interpreter Education Program (IEP) and were non-native users of ASL. Using demographic data for each interpreter, 12 samples were categorized based on the interpreters' *years of experience*, defined as the number of years between graduation from Northeastern University and the date of recording. Based on their years of experience, the 12 interpreters were separated into the following categories: 0-4 years experience, 5-8 years experience, 9 or more years of experience. From each category, four interpreters were selected, with one from each year of graduation represented in the given category. For example, in the 0-4 category, the years represented were 2009, 2008, 2006 and 2005, and one interpreter from each graduation year was selected for the makeup of that category for a total of four interpreters. Each category followed the same method for selection. The only years of experience not represented in this study are 2, 10 and 11 as there were no interpreters with these years of experience available in the data set.

### **Text Selection**

The source text for this research study was entitled "American Revolution." This 18:58 minute text features Bill Fowler, a 40-50 year old non-Deaf man and Distinguished Professor of History at Northeastern University, narrating in English the story of the American Revolution. This text was selected for its narrative structure so as to maintain continuity with other studies of constructed action, which have focused on the usage of this feature within narrative form.

### **Time Code Selection Process**

For purposes of this study, a time code was defined as a segment within the source text and interpreted texts, to mark an opportunity for, or existence of, constructed action within the text. Those time codes were marked by the physical time in text. Time code examples are given in Figure 1. The researchers listened to the uninterpreted source text independently and time coded each opportunity for constructed action in the text. One researcher accounted for 54 instances of opportunity for constructed action, while the second accounted for 49. The researchers then compared coding data and identified 36 time codes at which both researchers agreed there existed the opportunity for constructed action usage. These time codes, as well as an English transcription of the beginning of each time code, were then sent to an independent reviewer (an interpreter with 30+ years of experience) for verification. This independent reviewer suggested further revision of time codes, as some time codes were not completely separate thoughts, but rather a continuation of the same thought. The researchers further revised the time codes, combining any that were one complete thought or concept, leading to 31 time codes to be reviewed.

These 31 time codes, along with an English transcription of the beginning of each time code were then sent to the same independent reviewer, as well as a second independent reviewer (an interpreter with 10+ years of experience). The source text was also made available to these independent reviewers and each was asked to review the uninterpreted source text, along with the time codes, and indicate whether or not they would use constructed action at a given time code, were they to interpret the text. Answers were collected via an online form that was sent to

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each independent reviewer. The reviewers did not have access to each others' forms, so as to maintain the authenticity of each independent reviewer's answers. The researchers then assessed each reviewer's answers and recorded the time codes at which both interpreters indicated that they would use constructed action, for a total of 12 final time codes. Four time codes were located at the beginning of the text (within the first 3 minutes), five were located in the middle of the text (between minutes 4 and 9) and three were located at the end of the text (from 15 minutes onward to the end of text).

Figure 1 shows an example of the form used by the reviewers to vet time codes, as described in the paragraph above.

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Time			Code		
Begin	End	Phrase Related to Time Code	Yes	No	Possibly
<i>(Example)</i> 1:10	1:45	<i>“It was then that the revolution began...”</i>	X		
0:25	0:35	“One was the war for home rule. The other was the struggle of who would rule at home.”			
00:40	00:47	“King George the Third and his ministers, began to impose taxes, restrictions on the American Colonists...”			
00:48	1:13	“There were men and women who have lived for many generations in North America...”			
1:13	1:36	“King George and his ministers and the members of Parliament...”			
1:36	1:51	“They began with the Stamp Act...”			

Figure 1. Example of the online form used by independent reviewers to vet time codes.

### Textual Analysis

Initially, the researchers assigned six interpretation samples to each researcher in an “every other” selection process so that both researchers would be reviewing samples from every years of experience category. One researcher was assigned interpretation samples of the odd-numbered interpreters (1, 3, 5, 7, 9, 11), while the other was assigned interpretation samples of the even-numbered interpreters (2, 4, 6, 8, 10, 12). The researchers each reviewed six samples

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and then met to discuss their findings. During this discussion, they chose two samples to analyze and code independently, and then compared the coding to verify interrater reliability. Upon the completion of this process, the researchers found inconsistencies in their codes, determined that the use of independent coding was not successful, and concluded that a review of the parameters of constructed action was necessary. Once both researchers agreed on the parameters by which constructed action would be considered present in the text, they then analyzed and coded the twelve samples together.

### **Establishment of Constructed Action Parameters**

A review of the literature pertaining to constructed action reveals that the following parameters are required for constructed action: *role shift*, as well as a change in the following *non-manual markers: body shift, eye gaze and facial expression*. For purposes of this study it was also determined that for constructed action to be considered completely present, the interpreter must have expressed a complete thought. The researchers also acknowledged that the fingerspelling of names, years and dates or introduction of place or person during constructed action was not a deviation from constructed action, but necessary for the construction to be continued. This decision was predicated on the notion of *Simultaneous Direct and Indirect Action*, put forth by Metzger (1995), which states that “[w]hen constructing action, the use of direct action can be supported by minimal narration” (p. 263).

### **Data Analysis and Coding**

The researchers then developed six categories that best identified the different manner in which constructed action was used in each interpretation. The categories were labeled as follows:

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*Yes 1, Yes 2, No 1, No 2, Y/N 1, Y/N 2.* *Yes 1* accounted for time codes in which the interpreter fully utilized constructed action and met all of the parameters established by the researchers. This form of constructed action is akin to Metzger's (1995) description of *Direct Action*. *Yes 2* was used to account for moments in which the interpreter satisfied the parameters for constructed action, but an English word-order intrusion was present. *No 1* was used to account for instances in which the interpreter did not meet the parameters for constructed action, and instead utilized an *indirect reporting* (i.e. third-person narrative) construction of the action or discourse. *No 2* was used to account for moments when interpreters used indirect reporting, with no other parameters for constructed action, but utilized subjective case, as one might expect to see in constructed action.

The final two categories determined by the researchers were created to account for instances in which interpreters utilized both constructed action and indirect reporting constructions.

*Yes/No 1* accounted for areas in which interpreters utilized indirect reporting construction, with some constructed action used solely for emphasis. Usage of constructed action in this category is can be defined as *Indirect Constructed Action*, where "the signer narrates an event, or part of one, but still involves the body minimally" (Metzger, 1995, p. 264). The final category, *Yes/No 2* represented a mixed use of both constructed action and indirect reporting throughout the time code. The categories were all defined separately due to patterns noticed in the interpreted work by the researchers.

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The six categories, while interesting, were too numerous for the small sample size, making it difficult to draw significant results from the data. For this reason, the researchers collapsed *Yes 1*, *Yes 2* and *Yes/No 2* into one *Yes* category, and *No 1*, *No 2* and *Yes/No 1* into one *No* category.

### **Parameter Explanation**

Seven features of constructed action were examined. The seven features include: role shift, non-manual markers, body shift, eye gaze, facial expression, statement of action or feeling, and expression of complete thought. An explanation of each feature as it pertains to this study is given here.

### **Constructed Action**

The presence of constructed action in an interpretation was measured by the interpreters' use of role shift, which included an observable change in the following non-manual markers: body shift, eye gaze and facial expression. Additionally, the interpreter must have made a statement of action or feeling and express a complete thought. As mentioned in the previous section, the use of fingerspelling to indicate names, dates and places during an incidence of constructed action was not counted as deviation from that form.

**Role shift.** In this study, the researchers defined *role shift* as a discernable shift by the interpreter from the role of third-person narrator, to taking on the role, perspective, emotion or action of a character in the source text. Identification of role shift was predicated on an interpreter's use of at least two of the non-manual markers identified below as well as a statement of action or feeling.

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**Non-manual markers.** Based on their prior knowledge of ASL linguistics and their review of pertinent literature, the researchers defined *non-manual markers* as movements of the head, face and body that communicate affect, emotion or grammatical function (Lentz, Mikos, & Smith, 1988). For purposes of this study the researchers looked for the presence of body shift, eye gaze and facial expression in each interpreted sample as an indication of constructed action.

**Body shift.** It is important here to note the difference between body shift and role shift: *body shift* refers to a physical movement of the body from one signing space to another, whereas *role shift* refers to the perceived change in character or role (i.e., an element of which may be body shift). The researchers defined body shift as the physical movement of the body (i.e., particularly the head, shoulders and/or torso) from a central or neutral position in which narrative form was utilized, to a distinct area (i.e., either behind, in front of, or to either side of the interpreter) in which the character was established and/or from which the character's actions, thoughts or feelings were expressed.

**Eye gaze.** *Eye gaze* was defined by the researchers as a movement of the interpreters' eyes from gazing at the audience/camera to gazing toward the object of the character being constructed. For example, if an interpreter moved his/her forward gaze (e.g., on the audience/camera) to the left or right (i.e., indicating focus on a different area/referent), this was considered a shift in eye gaze by the researchers.

**Facial expression.** *Facial expression* was defined as an evident variation in the interpreter's face that indicated his/her shift from the role of narrator to that of a character in the text. This change in facial expression included any of the following: movement of eyebrows up

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or down, movement of cheeks (e.g., puffing out) and/or movement of lips/mouth (e.g., pursed, tightened, etc.).

**Statement of action or feeling.** While seeking to identify constructed action in each interpretation, the researchers looked for the interpreters to use a combination of the above elements along with a statement that expressed the action or feeling of the character(s) they were constructing. This kind of statement was most often made the subjective case, but was not required that this case be explicitly stated (i.e., the researchers did not require that the interpreter sign *I* or *We*) to be considered a statement of action or feeling. However, some expression of this kind must be made in order for constructed action to be considered present.

**Expression of complete thought.** Finally, the researchers looked for the interpreters to utilize the above parameters while expressing a complete thought. This was defined as the expression of an action or feeling that included a subject, verb and object. Where the above parameters were present, but a complete thought was not conveyed, the researchers developed categories by which to classify this partial use of constructed action.

### **Experience**

The first component of *experience* the researchers established was *years of experience*, which was defined as the number of years between graduation from Northeastern University and the date on which the interpretation was recorded. Because exact dates of recording were not available, the researchers selected 2009 as the year from which *years of experience* would be calculated (since all recordings occurred within a two month period, 2009 represented the earlier year).

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The next component of experience was *percentage of time spent in the deaf community*<sup>1</sup>. This information was self-reported by each interpreter at the time of recording. The final component of experience was *hours per week spent interpreting*. Again, this information was self-reported by the interpreters at the time of recording. Once the process of data collection began, the researchers then developed this information into an *experience score* for each of the interpreters to better to account for the variety of ways that interpreters are exposed to and develop language and interpretation skills. As the raw data are comprised of both percentages and numerical values, the researchers assigned numerical values to the data in the following way:

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<sup>1</sup> The unit of time used to calculate *percentage of time spent in the deaf community* (ie: time each day, week, month or year) was unable to be accounted for by the researchers, as this information was collected by the Northeastern University ASL Program, and the question used to determine this information did not explicitly state a specific unit of time. The question asked: “What percentage of your time is spent socializing with Deaf, Hard-of-Hearing and or Deaf-Blind people? (Please don’t count assignment/work related time.)”

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Table 2

*Experience Score calculation*

Years of experience	Assigned experience score value	Self-reported percentage (%) of time spent in the Deaf community	Assigned experience score value	Self-reported hours per week spent interpreting	Assigned experience score value
0	0	0	1	1-5	1
1	1	1-10	2	6-10	2
3	3	11-25	3	11-15	3
4	4	26-50	4	16-20	4
5	5	51-75	5	21-25	5
6	6	76-100	6	26-30	6
7	7			31-35	7
8	8			36-40	8
9	9			40+	9
12	12				

The researchers then reviewed the demographic data for the interpreters, and calculated experience scores for each. The formula for calculating the *experience score* was: *years of experience + percentage of time spent in the deaf community + hours per week spent interpreting = experience score*. For example, interpreter #1 had 12 *years of experience*, reported spending 26-50% of her time outside of work with the Deaf community and interpreting for 1-5 hours per week. Thus her *experience score* was calculated as 12+4+1=17. The lowest *experience*

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score possible was 2 and the highest possible was 27. The experience scores for each interpreter are shown in Table 3.

Table 3

*Interpreter experience scores*

Interpreter #	Experience score
1	17
2	21
3	19
4	18
5	20
6	16
7	10
8	14
9	13
10	12
11	8
12	9

<sup>a</sup>The highest possible *experience score* was 27, while the lowest possible was 2.

## Results

### **Influence of Experience**

Does amount of experience influence the frequency with which interpreters use constructed action, where the text allows for such construction? Initially, the researchers thought that interpreters with a greater amount of experience in the field would produce constructed

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action more frequently than novice interpreters. The definition of experience was not limited only to cumulative years of interpreting experience post-graduation, but also included the number of hours per week spent interpreting, as well as the percentage of time spent socializing in the Deaf community. This notion that overall experience influences the use of constructed action was the first and main focus of this research study.

The researchers ranked all 12 interpreters by *experience score* (highest to lowest), and manually compared this score with the frequency with which each interpreter used constructed action in their respective interpretation sample. In the researchers' analyses of the 12 interpretation samples, they did not find that interpreters with high experience scores used constructed action more frequently than those with lower scores. To confirm these unexpected results, the researchers worked with Northeastern University Postdoctoral Teaching Associate Benjamin Wiedmaier, who ran a computer-based Discriminant Analysis test to determine whether or not the variable of experience played a role in predicting a frequency of constructed action use. The Discriminant Analysis examined all 12 time codes, each interpreter's *experience score*, and the frequency with which the interpreters used constructed action. Detailed results of all statistical analyses run for this study can be found in the Appendix, provided by Dr. Wiedmaier.

This Discriminant Analysis confirmed the researchers' overall results, finding no significant correlation between amount of experience and frequency in constructed action usage, with one exception: the 16:59-17:10 time code. "Given this result it would appear that, for at least one time segment, interpreter experience does significantly affect the decision to use

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constructed action” (B. Wiedmaier, personal communication, April 11th, 2015). While it is interesting that this positive correlation is made at one time code, given the lack of significant effect of a correlation between experience and the use of constructed action throughout the text, the researchers determined that correlation cannot definitively be made between an interpreter’s level of experience and his/her use of constructed action.

**Influence of time spent in the Deaf community**

Does the percentage of time an interpreter spends in the Deaf community influence the frequency with which he/she uses constructed action? The researchers analyzed the data to determine if a correlation could be found between use of constructed action and percentage of time spent socially in the Deaf community. The researchers believed that socializing within the Deaf community would allow the interpreters greater exposure to and practice using ASL, which would in turn influence them to acquire a more native-like signing style, thus resulting in a more frequent use of constructed action, than those who did not frequently socialize with members of the Deaf community.

For this analysis, the researchers again worked with Dr. Wiedmaier who submitted the data to a Chi-square test to determine the possible relationship between *percentage of time spent in the Deaf community* and use of constructed action. The correlation between the percentage of time an interpreter spends in the Deaf community and the use of constructed action was found not to be significant. This result indicates that the amount of time an interpreter spends socially in the Deaf community did not influence the rate with which he/she used constructed action.

### **Influence of time spent interpreting**

Does the amount of time an interpreter spends interpreting each week, influence the frequency with which he/she uses constructed action? The researchers believed that the more hours per week an interpreter was able to work, the greater opportunities that would exist for him/her to utilize constructed action in the work.

Again, a Chi-square test was run by Dr. Wiedmaier to determine whether or not time spent interpreting was a factor in the use of constructed action. “The tests were run 12 times, once for each of the time segments measured. Results showed that none of the chi-square tests were significant (all *p*-values greater than .05), indicating that weekly hours spent interpreting is independent of the decision to use constructed action” (B. Wiedmaier, personal communication, April 11th, 2015). Given that this experience factor did not prove to influence the use of constructed action, the researchers re-analyzed the data to determine if there was any correlation between time in text (i.e., the beginning, middle or end of the text) and an increased use in constructed action.

### **Influence of time in text**

Does the frequency of use of constructed action vary at the beginning, middle and end of a text? The researchers calculated total instances of constructed action at the beginning, middle and end of the text, and received the following result:

- Beginning of Text (including time codes: 00:40-00:47, 00:48-01:13, 01:13-01:36 and 01:55-2:09): 14 instances of constructed action.

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- Middle of Text (including time codes: 04:47-06:07, 06:34-06:49, 06:50-7:01, 7:19-07:42 and 07:43-8:06): 30 instances of constructed action.
- End of Text (including time codes: 15:07-15:44, 16:59-17:10 and 17:51-18:04): 16 instances of constructed action.

Table 4 indicates the use of constructed action in each response category, among each interpreter (numbered 1-12), at each time code. Time codes at the beginning of the text are highlighted in green, time codes at the middle of the text are highlighted in yellow, and time codes at the end of the text are highlighted in red.

Table 4

*Interpreter usage of constructed action at each time code*

Time code	Yes 1	Yes 2	Yes/no 1	Yes/no 2	No 1	No 2
00:40-00:47		3,9			1,2,4,5,6,7,8,10,11,12	
00:48-01:13	3,6,7,9		2,10,11	1,4	8,12	5
01:13-01:36			3	1,8,12	5,6,7	2,4,9,10,11
01:55-02:09				1,6,8,10	3,7	2,4,5,9,11,12
04:47-06:07	3,4,9	6	5,7,8,11	1,2,10	12	
06:34-06:49	3,9,11	2,7,10		1,4,6,	8,12	5
06:50-07:01	3,4,5,7,9	1,6		11	2,8,10,12	
07:19-07:42	9		7,11	1,3,6,	2,4,5,8,10,12	
07:43-08:06		3,4	1,6,8,9,11		2,5,7,10,12	
15:07-15:44	1,2,4,7,9	3	8,12	5,6,10,11		
16:59-17:10	3	7	1,2,10	8,9,11,12		4,5,6
17:51-18:04			8,9,10		1,2,3,4,5,6,7,11,12	

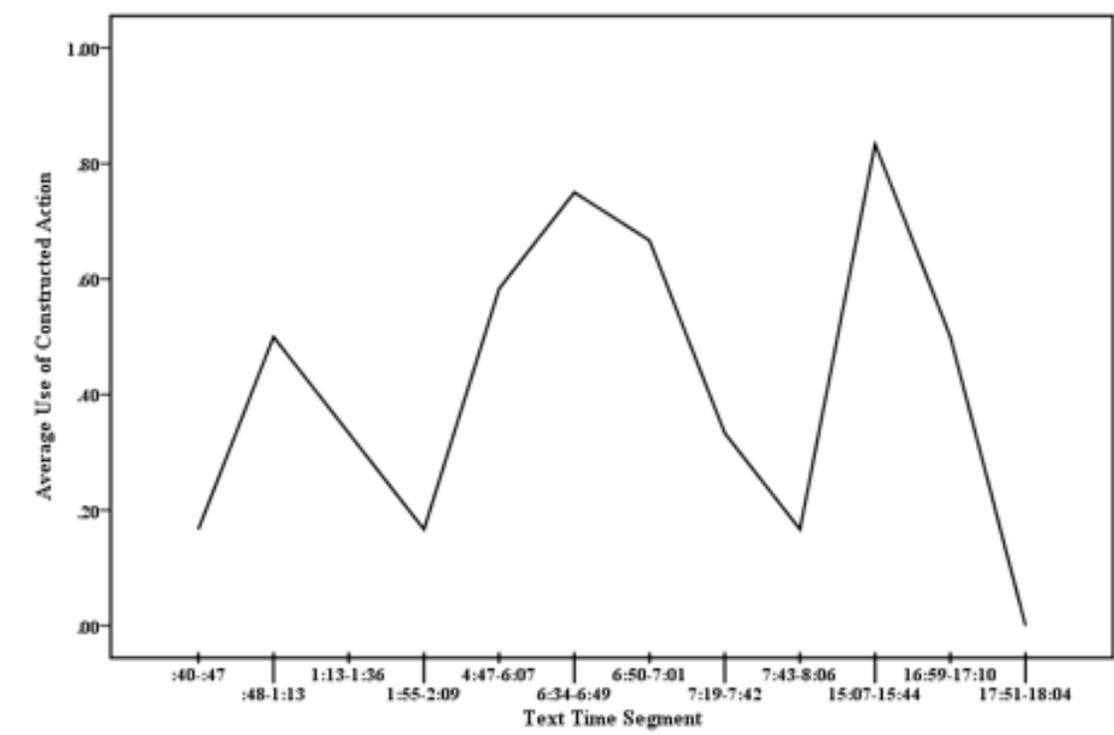
It is important to note that only one interpreter, Interpreter #5, fit into this “No 2” category, but because the style of the interpretation was so uniquely marked, the researchers determined that a category must be established to represent this style.

Given the high frequency of constructed action usage found in the middle of the text, it appeared that there might be a correlation between constructed action usage and time in text. Dr.

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Wiedmaier conducted an ANOVA, which analyzed the relationship between each of the 12 time codes and how frequently constructed action was used at each time code. The intent of this test was to determine if the use of constructed action became more frequent across all interpreters as the text progressed. It was determined that this was not that case.

Another ANOVA test was done to determine if during any time segment in the text interpreters elected to use more constructed action than at any other time segment. The results are given in the Appendix. The figure below shows the frequency of constructed action usage throughout the text.



*Figure 2: Constructed action occurrence throughout “American Revolution” text. (B. Wiedmaier, personal communication, April 11th, 2015).*

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As the figure depicts, “...the use of constructed action is increasing toward the middle of the text (i.e., between 4:47 and 7:19) compared to both the beginning and end” (B. Wiedmaier, personal communication, April 11th, 2015). It is important to emphasize that the use of constructed action did have peaks at the beginning, middle, and end, but it is statistically clear that the increased use of constructed action among all interpreters was evident specifically in the middle of the text. A repeated measures ANOVA, run by Dr. Wiedmaier, suggests that for instances in which interpreters utilize constructed action at the 00:48 time mark, the likelihood of constructed action utilization at the 15:07 time mark becomes much greater. Given this, researchers can confidently state that “point in time” in the source text significantly affects the use of constructed action (B. Wiedmaier, personal communication, April 11th, 2015).

**Gender factors.** In the process of the study, the researchers discovered a difference in constructed action usage among male and female interpreters. While this was not part of the study’s original intent, it is interesting to note the existence of gender difference among the interpreters. During statistical analysis it was discovered that at time code 1:13-1:34, 100% of male interpreters produced constructed action whereas only 20% of female interpreters did the same (B. Wiedmaier, personal communication, April 11th, 2015). These results were systematic and could not be accounted for by chance. Among interpreters in this sample, 17% were male and 83% were female, which is in keeping with the ratio in the field overall. Based on the Fiscal Year 2014 Annual Report put forth by the Registry of Interpreters for the Deaf, of those members who reported gender demographics, 86% were female and 13% were male (Registry of Interpreters for the Deaf, 2014).

### **Discussion**

The results of this study run contrary to what appears to be intuitive: that the greater amount of experience an interpreter possesses, the more frequently he/she will use native-like ASL constructions, such as constructed action, in their work. One explanation for this may be that the study was comprised solely of graduates from the Northeastern University Interpreter Education Program and analyzed only 12 interpretations of one text, resulting in a narrow sample that may not yield results representative of all interpreters in the field. Furthermore, the researchers could only account for the quantity of experience that the interpreters reported, not for the quality or type of experience that they may have, which could potentially influence whether or not an interpreter utilizes constructed action.

Additionally, it has been determined in previous research that second language users are not particularly adept at identifying and employing constructed action (Thumann, 2011). This factor may account for an overall lack of constructed action usage in the study, as all interpreters in the sample are non-native users of ASL.

Finally, in the researchers' conversations with Northeastern University's Interpreter Education Program Director, Dennis Cokely, it was discussed that constructed action as an explicit concept has only begun to be taught in ASL courses and IEPs within the last dozen years (Dennis Cokely, personal communication, April 23rd, 2015). It is plausible that the interpreters who have the greatest years of experience did not graduate with the same training or awareness of constructed action as compared with the novice interpreters, which could result in a skewed outcome.

### **Limitations**

During data collection, the researchers realized that the study would have benefitted greatly from having a larger sample size. The data in this study is reflective only of 12 interpreters and 12 time codes in one style of text, greatly limiting the applications of its results to the interpreting field at large. Additionally, the interpreters evaluated in this study were all non-native users of ASL. According to Dennis Cokely, “Future studies should be done to see if these findings can be applicable to interpreters who have graduated from other Interpreter Education Programs, or learned American Sign Language natively” (Dennis Cokely, personal communication, April 23rd, 2015). It would also be interesting to design a study examining the use of constructed action in various types of text (i.e., Expository, Inquiry, Persuasive, etc.).

Additionally, this study encountered gender limitations in the sample, as only two of the twelve interpreters included in this study were male. Future research could benefit from a sample comprised of a greater number of men so as to better ascertain any gender difference among interpreters in the use of constructed action.

The final limitation that the researchers encountered during this study was time. All research in this study was completed within five months. A greater amount of time to obtain a larger and more diverse sample of interpreters and texts, as well as more time to compile and synthesize data could make for stronger and more definitive results.

While this study is limited in scope, it is believed to be the first of its kind that evaluates the use of constructed action among ASL Interpreters and therefore may have implications for the teaching of constructed action in Interpreter Education Programs. It also provides an entry

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point for other researchers in the field to investigate the use of constructed action among ASL interpreters and opens up many topics that are ripe for investigation.

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## Appendix

### **RQ1: Experience and Use of Constructed Action**

RQ1 examined the potential influence of interpreter experience on the use of constructed action, where the text would allow for such construction. A discriminant analysis was utilized, with interpreter experience (ranging from 0-27) as the independent variable and use of constructed action (coded as either “yes” or “no”) as the dependent variable. In this way, experience was used to determine whether or not an interpreter used constructed action for a particular time segment, and therefore the analysis was run 12 times, once for each of the time segments. Of these 12 analyses, only one time period was significant: from 16:59 to 17:10, Wilks'  $\Lambda = .63$ ,  $\chi^2(1, N = 12) = 4.445$ ,  $p = .04$ . This function explained approximately 37% of the variance in whether or not an interpreter decided to use constructed action (canonical  $r = .61$ ). Using this function to predict group membership yielded 83% correct classification. In order to take account of chance agreement, a kappa coefficient was obtained and was moderate in strength,  $\kappa = .67$ . Given this result it would appear that, for at least one time segment, interpreter experience does significantly affect the decision to use constructed action.

### **RQ2: Time in the Deaf Community and Use of Constructed Action**

RQ2 sought to investigate the role time spent in the deaf community plays in an interpreter's use of constructed action. Chi-square tests of independence were utilized, with time spent in the deaf community (measured categorically with five increments ranging from “1-10%” to “76-100%”) and decision to use constructed action (“yes” or “no”) as the other variable. The tests were run 12 times, once for each of the time segments measured. Results showed that none

of the chi-square tests were significant (all  $p$ -values greater than .05), indicating that time spent in the deaf community and the decision to use constructed action are independent of one another.

### **RQ3: Weekly Hours Interpreting and Use of Constructed Action**

RQ3 sought to investigate the role hours spent interpreting in a week plays in an interpreter's use of constructed action. Chi-square tests of independence were again utilized, with hours spent interpreting weekly (measured categorically with seven increments ranging from "1-5 hours" to "31-35 hours") and decision to use constructed action ("yes" or "no") as the other variable. The tests were run 12 times, once for each of the time segments measured. Results showed that none of the chi-square tests were significant (all  $p$ -values greater than .05), indicating that weekly hours spent interpreting is independent of the decision to use constructed action.

### **RQ4: Does the frequency of use of Constructed Action vary at the beginning, middle and end of a text?**

Several analyses were undertaken in order to test the extent to which the use of constructed action increased as an interpreter progressed through a text. First, a repeated-measures ANOVA was employed to assess whether or not any differences existed between each the 12 time segments and the decision by an interpreter to use constructed action. The ANOVA was nonsignificant, Wilks'  $\Lambda = .07$ ,  $F(3, 9) = 4.83$ ,  $p = .11$ . Interestingly, however, the follow-up polynomial contrasts indicated a significant "order 6" effect, indicating that mean usage of constructed action shifted up and down several times throughout the text,  $F(1, 11) = 21.85$ ,  $p = .001$ . To better understand this effect, a line graph was produced, which displays the average use

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of constructed action across the 12 time segments (see Figure 2), and clearly shows the use of constructed action increasing toward the middle of the text (i.e., between 4:47 and 7:19) compared to both the beginning and end.

(B. Wiedmaier, personal communication, April 11th, 2015)