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Goodnight Gorilla: How Do Second Language Learners' American Sign Language Narrative Renditions Change after Viewing an ASL Model?

Jennifer Beal Dr.
Valdosta State University, jsbeal@valdosta.edu

Jessica Scott
Georgia State University, jscott96@gsu.edu

Terynce Butts
Georgia State University, tbutts6@gsu.edu

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Jennifer Beal
Valdosta State University

Jessica Scott
Terynce Butts
Georgia State University

ABSTRACT

We investigated the effects of a single viewing of an American Sign Language (ASL) model on university second language learners' ASL narrative renditions. Spoken English was the first language of all participants, and they had varying lengths of signing experience, ranging from 1 to 26 years. Participants completed a receptive measure of ASL. Then they rendered a wordless picture book in ASL. Afterward, they watched a native-signing adult model of the story in ASL and then told the story again. We investigated their inclusion of specific details and how they expressed them, including their use of constructed action (CA), depicting constructions (DCs), blended CA+DC, and lexical signs. After one viewing of the model, participants significantly increased their inclusion of details and use of all constructs except lexical signs, although not to the level of the model. Their receptive ASL scores correlated with their use of CA within their narrative renditions at both time points. We present an analysis of their strengths, areas of need, and future research implications.

INTRODUCTION

In the U.S., most interpreters who work with deaf children are second language learners of American Sign Language (ASL), with a spoken language as their first language (Beal-Alvarez & Scheetz, 2015; Beal et al., 2018; Schick et al., 2006; Thoryk, 2010; Yarger, 2001). These are M2L2 learners, or second-modality second-language learners (Chen Pichler, 2009; Chen Pichler & Koulidobrova, 2015), who learn a second language in a different modality than their first language. While the primary articulators of their first language are the spoken and auditory channels, the primary articulators of signed languages are the kinesthetic and visual channels. Meaning in ASL is expressed across five parameters of a sign: handshape, palm orientation, location, movement, and nonmanual markers (i.e., eyebrows, eye gaze, mouth, body shift, etc.; Liddell, 2003; Stokoe, 1978).

These M2L2 learners tend to learn ASL in high school and college, many within interpreter preparation programs (Beal-Alvarez & Scheetz, 2015; Beal et al., 2018; Schick et al., 2006; Thoryk, 2010; Yarger, 2001). In 2009, more than 92,000 students were enrolled in ASL courses at

the university level (Goldberg et al., 2015). ASL instruction at the university level typically uses an established curriculum, such as *Signing Naturally* (Smith et al., 2008), supplemented with participation in deaf community events to practice ASL skills (Rosen, 2014; Swaney & Smith, 2017). ASL standards for M2L2 learners are available (Ashton et al., 2014; Kurz & Taylor, 2008), but few curricula explicitly align with the standards (Swaney & Smith, 2018). While some interpreter training programs require a measure of signed language proficiency before completion of internships, there appears no uniformity in program assessments or required scores (Beal-Alvarez & Scheetz, 2015; Humphries & Allen, 2008). These future interpreters are expected to acquire the needed signed language skill levels to work with deaf students and clients within a time constraint of a few years of college-level instruction (Ferrara & Nilsson, 2017; Humphries & Allen, 2008). Many programs in the U.S. provide three hours of ASL instruction per week for 16 weeks each semester across four ASL courses, equating to fewer than 200 hours of ASL instruction. Learners' skills at the end of their program may hinder their ability to provide proficient interpreting services.

While M2L2 learners with a fully developed first language may transfer linguistic components to the acquisition of a signed language (i.e., Linguistic Interdependence Hypothesis; Cummins, 2000), researchers have documented specific areas of ASL that appear to be more difficult than other areas for M2L2 learners, including ASL grammar and structure. It is important to note that ASL expresses grammatical concepts differently than spoken languages. Learners have a specific difficulty with those structures that visually show action events or describe physical objects in ASL, likely because no parallel structures exist in spoken language (Fischer & Muller, 2014; Jacobs, 1996; Kemp, 1998; McKee & McKee, 1992). University-level ASL instructors, both deaf and hearing, rated the following visual aspects of ASL harder to learn than their students rated them: thinking in ASL; nonmanual signals/markers; the performance aspect of ASL; and the use of classifiers (which are used to show figures, objects, and their spatial arrangement and actions) (McKee & McKee, 1992). Bontempo and Hutchinson (2011) found that accredited interpreters working in educational settings in Australia demonstrated "insufficient use of depicting signs, constructed dialogue, and constructed action" and showed "confusion of space/placement properties" (p. 62), further demonstrating M2L2 learners' struggles with visual constructs of signed languages. Other researchers have noted M2L2 learners' difficulty with depiction as well (Quinto-Pozos, 2005; Thumann, 2010, 2013).

GRAMMATICAL CONSTRUCTIONS UNIQUE TO SIGN LANGUAGES

Proficient signers use multiple perspectives to "show" versus "tell" information within narrative contexts (Cormier et al., 2012, 2013; Lupton, 1998; Quinto-Pozos, 2007; Taub & Galvan, 2001), which is a "prevalent feature in sign languages" (Morgan & Woll, 2007, p. 1162). Deaf adults frequently embed depiction in their narratives, regardless of their sign language experiences (Beal-Alvarez & Trussell, 2015; Lu & Goldin-Meadow, 2018; Taub & Galvan, 2001), although Armstrong (2003) found that native ASL signers incorporated a specific type of depiction, constructed dialogue, more often than non-native ASL signers. Thumann (2010) reported native ASL signers produced depiction an average of 20 times per minute within ASL lectures, while Halley (2020) documented a native ASL signer produced about 18 instances of depiction per minute when interpreting automotive-centered videos by a Deaf signer. In contrast, a M2L2 nationally certified interpreter with 18 years of interpreting experience across a variety of fields

produced about 14 instances of depiction per minute when interpreting the same source material as the native signer. Interpreters with national certification, four of whom were native signers and two who were M2L2 ASL learners, all used depiction at a rate similar to deaf signers when interpreting a 35-minute lecture from spoken English to ASL (White, 2014). Within their investigation of experienced interpreters' ASL interpretations of President Obama's inaugural speech (January 20, 2009), Swabey and colleagues (2016) documented interpreters' use of depiction and reported that facility with this ASL structure might offset cognitive load, promoting accurate interpretations.

Depicting concepts and actions visually is one of the biggest challenges for M2L2 learners (Fischer & Muller, 2014; McKee & McKee, 1992; Quinto-Pozos, 2005). In ASL, multiple perspectives show the where (i.e., spatial details and relations among figures and locations related to an event) and how (i.e., procedural details of the action within the event) of discourse events.

CONSTRUCTED ACTION

Within a first-person perspective, signers become the character through constructed action (CA; also called enactment, referential shift, role shift; Cormier et al., 2013), such that the signer's facial expressions and limbs enact those of the character to show and act out discourse (e.g., wings of a bird or paws of a dog) (Aarons & Morgan, 2003; Metzger, 1995; Quinto-Pozos, 2007). Mouth morphemes mimic the mouth movements of the character represented, as opposed to mouth morphemes that accompany specific signs (see Bickford & Fraychineaud, 2008). In contrast to fixed lexical signs that are found in a sign language dictionary, CA is innovated by the signer and involves complex simultaneous manipulation of articulators (Fischer & Muller, 2014). CA is integral to signed discourse across signed languages (ASL, Quinto-Pozos et al., 2009, Thumann, 2013; Auslan, Gowsell, 2011; British Sign Language, Cormier et al., 2013; German Sign Language, Perniss, 2007; South African Sign Language, Aarons & Morgan, 2003, etc.) and occurs along a continuum of subtle to overt use of individual articulators by signers, defined as slight, moderate, and exaggerated by Quinto-Pozos and Mehta (2010) (also see Cormier et al., 2015). Deaf signers who were judged as more fluent by their deaf peers used facial expressions, acting out, and body movements to show what they discussed (Lupton, 1998). CA appears to be preferred by deaf signers themselves and others who judge the clarity of signers' productions (Quinto-Pozos, 2007). Fischer and Muller (2014) and Kurz et al. (2019) noted the rarity of studies related to M2L2 learners' comprehension and production of CA.

DEPICTING CONSTRUCTIONS

Signers use depiction within a third-person perspective to establish figures and their objects in signing space (semantic or entity DCs) and to describe visual characteristics of those figures (size-and-shape-specifiers, SASSes) (Cormier et al., 2013; Dudis, 2002, 2004, 2007, 2011; Morgan & Woll, 2007; Quinto-Pozos, 2007; Schick, 1990, 2006; Supalla, 1986). Semantic depicting constructions (DCs) often use the dominant hand to represent a figure, such as a vertical index for a person, and the non-dominant hand to show a secondary figure or ground, such as a car or surface. A SASS might use two rounded hands to show the location and appearance of a banana bunch. Both DC types are shown using the signing space in front of the body within the third-person observer perspective. While the classifier handshapes within DCs are part of the sign language

phonology, similar to CA, DCs are innovated by the signer in how they are established and how they interact within the signing space. DCs are "multi-morphemic in structure," (Henner et al., 2017, p. 147), meaning that each of the parameters involved in the DC has a morphological role (Marshall & Morgan, 2015; Supalla, 1986). These complex constructions require accurate handshape selection, two-handed coordination with accurate spatial location, and accurate path and manner of movement, all completed simultaneously (Aarons & Morgan, 2003; Morgan & Woll, 2007; Perniss, 2007; Schick, 1990, 2006; Slobin et al., 2003; see Taub & Galvan, 2001, for a detailed overview). DCs have been reported across many natural signed languages (see Beal, 2020, for a review).

Constructed Action with Depicting Constructions

Because DCs are limited to the articulation abilities of fingers and hands, signers frequently pair CA and DCs simultaneously within a blended perspective to provide more detailed information (Aarons & Morgan, 2003; Becker, 2009; Cormier et al., 2013; Dudis, 2004; Liddell, 2003; Perniss, 2007; Quinto-Pozos, 2007). Aarons and Morgan (2003) provide photos of blended perspectives, including the signer's left hand gripping the strap of his parachute using CA while his right hand depicts a semantic DC handshape to represent an approaching bird (p. 131, Item E). In Item J, the signer's left hand grips the parachute strap using CA for enactment, while his right hand is a semantic DC to represent the parachutist's legs. Blended perspectives with CA and DCs are used within narrative contexts by signing deaf adults, regardless of their language backgrounds (Beal-Alvarez & Trussell, 2015; Cormier et al., 2013; Lupton, 1998; Quinto-Pozos, 2007; Taub & Galvan, 2001). In fact, Fischer and Muller (2014) noted that "Up to almost half of a narrative may consist of CA, in particular CA in simultaneous occurrence with a classifier construction" (p. 116). However, using CA and DCs simultaneously and proficiently "must be considered one of the biggest challenges to any hearing adult learning a sign language" (Fischer & Muller, 2014, p. 116).

M2L2 Learners and Language Development

There is a need for description of the M2L2 sign language acquisition and development trajectory, specifically for "more complex aspects of signed language development (e.g., syntax, discourse structure, etc.)" (Ferrara & Nilsson, 2017, p. 8), yet limited studies are available that address M2L2 sign language acquisition and production (Beal-Alvarez & Scheetz, 2015; Beal et al., 2018; Beal & Faniel, 2018; Bochner et al., 2011; Schlehofer & Tyler, 2016; Williams & Newman, 2016) and even fewer that address the effectiveness of M2L2 sign language instruction (Beal, 2022a; Quinto-Pozos, 2011). Researchers have analyzed the effects of direct instruction in fingerspelling (Thoryk, 2010) and in glossing ASL sentences into written English (Buisson, 2007) with university ASL learners. Beal (Beal-Alvarez & Scheetz, 2015; Beal et al., 2018) investigated learner-generated ASL narratives with beginning (i.e., ASL I) and more advanced (i.e., ASL IV) university learners and their awareness of their expressive skills within their narratives. They reported that M2L2 learners, even at the end of ASL IV, struggled with production of visual constructions, such as constructed action and depicting constructions, that deaf signing adults frequently include within their narrative productions (Beal-Alvarez & Trussell, 2015; Taub & Galvan, 2001). Nicodemus and Emmorey (2015) noted three challenges to self-monitoring sign language production accuracy for novice sign language learners: their limited fluency affects their

error detection; they can see only the backs of their hands when producing signs, and they cannot see their own facial expressions.

Beginning and more advanced M2L2 learners appeared unaware of their skills related to depiction, as they had inflated self-ratings for pronominalization and role taking, which are visual strategies used to designate characters in signing space and enact characters' actions within narrative productions, compared to ratings of deaf and typically hearing proficient signers (Beal et al., 2018). Specific to third-person narrative renditions, M2L2 learners of Catalan Sign Language used more overt pronouns, in comparison to null pronouns, for character maintenance within third-person narratives compared to signing deaf adults (Bel et al., 2015). When describing how to get to campus and a specific floor of a building in Norwegian Sign Language (NSL), M2L2 learners in their second year of an interpreter training program preferred lexical signs (72%) over depicting constructions (i.e., entities, SASSes, location, and handling classifiers; 11%), while their deaf NSL instructors used fewer lexical signs (61%) and more depicting signs (21%) (Ferrara & Nilsson, 2017). Thirty-six percent of the time, the M2L2 learners had non-native-like depicting constructions. While the instructors described the locations "as if they were moving through a scene" (p. 15) from their personal perspective, the M2L2 learners statically described their environments and struggled "with when and where to use depicting signs and which types of depicting signs were appropriate in a particular setting" (Ferrara & Nilsson, p. 17). Marshall and Morgan (2015) reported similar findings for depicting constructions produced by M2L2 British Sign Language (BSL) learners compared to deaf native BSL signers within a picture elicitation task. M2L2 learners struggled with handshape selection and relied more on pointing or preposition signs to locate objects, while none of the native signers used these strategies (Marshall & Morgan, 2015). Similar to Ferrara and Nilsson (2017), M2L2 learners produced non-native-like "classifier constructions" two-thirds of the time. Ferrara and Nilsson concluded that M2L2 learners' explanations were influenced by their spoken language, resulting in more lexical signs than depicting signs.

Researchers investigated M2L2 learners' ASL narrative productions of a Tweety and Sylvester cartoon at the beginning of university-level ASL I and 5-8 months later for inclusion of observer, character, and blended perspectives with the goal of identifying a CA acquisition trajectory for M2L2 learners (Kurz et al., 2019). They reported errors in the use of CA articulators, such as omitted eye gaze and head movement when using binoculars in character perspective, no use of blended perspectives, and varied output across signers. They concluded that while beginning signers have knowledge of how to present different perspectives in ASL using CA, they were unable to consistently produce them within narratives after 5-8 months of ASL instruction and encouraged similar research at other universities (Kurz et al., 2019).

Sutton-Spence (2019) noted the lack of research studies on the use of sign language literature, which includes sign language stories rendered by native ASL signers with M2L2 learners, and Metzger et al. (2019) highlighted a need for evidence in favor of instructional strategies within interpreter preparation programs, including the use of a signed language to teach content within sign language interpreting courses. This includes the use of native sign language models to teach signed constructions such as those used within depiction. One intervention study specific to depicting constructions addressed changes in M2L2 learners' narrative renditions before and after a deaf model paired with explicit instruction. Beal (2022a) compared university-

level ASL I M2L2 candidates' self-ratings of their ASL narratives produced after repeated viewings of a deaf model accompanied by guided instruction to instructor ratings. Two narratives from Unit 6 of *Signing Naturally* were used (i.e., *Timber* and *Gum*). Learners watched each model together twice in class, each time paired with explicit instruction by the instructor that included stopping and referencing the video model, modeling specific signs, and providing feedback on learners' productions. Learners self-rated using a Google form that presented Yes/No questions across inclusion of specific narrative details, such as *looks at camera with topic-comment eyebrows and head tilt to introduce apple.* The instructor used the same Google form to evaluate students. M2L2 learners and the instructor had 92% agreement across both stories, which included 35 and 54 details, suggesting that learners were aware of what they did and did not include in their renditions when compared to the models. However, while background factors such as years of signing experience were considered, there was no pretest measure of narrative performance prior to the repeated viewings and accompanying instruction. It is unclear if all M2L2 learners need explicit instruction when watching an ASL narrative model to proficiently produce their own narrative rendition, especially as they advance from ASL I to ASL IV courses.

This approach of guided viewing of ASL models, combined with explicit instruction, modeling, learner imitation, and feedback, has been used with deaf children and adolescents as well within an observational learning theory framework (Beal-Alvarez & Easterbrooks, 2013; Cannon et al., 2010; Guardino et al., 2014), in which learning can occur through observation alone, specifically by watching a model perform a task (Bandura et al., 1966). This appears to be the premise behind ASL curricula that include model videos, such as *Signing Naturally*, for student practice at home (Smith et al., 2008). Immediately imitating a target skill after observing it increases learning (Bandura & Jeffrey, 1973). More recent applications of observational learning theory confirm its learning potential in online platforms, such as online video viewing (Mbati, 2013). It is likely that M2L2 learners experienced a great deal of early and foundational learning through observation and imitation. Although previous research included guided instruction along with video model viewing, it is possible that adult M2L2 learners, specifically more advanced signers who have completed four university-level ASL courses, might benefit from a single viewing of a fluent signing model without mediation.

Also key to benefitting from an intervention is comprehension of the elicitation material. One assessment previously used to measure university-level M2L2 learners' ASL comprehension is the ASL Receptive Skills Test (ASL-RST; Enns et al., 2013), a 42-item, computer-based test across nine grammatical categories (i.e., number-distribution, negation, noun-verb, spatial verbs (location and action), SASSes, handle classifiers, role shift, and conditionals). While it was designed for native or near-native ASL signers between 3 and 13 years of age, it has been used with both deaf and hearing ASL learners into adulthood (Beal-Alvarez, 2014, 2016; Beal, 2020b; Beal et al., 2021; Lieberman et al., 2014). One sample of 21 M2L2 learners with a minimum of three years of ASL experience beyond university training had a mean score of 80% (Lieberman et al., 2014). At the end of their university-level ASL IV course, another sample of 33 M2L2 learners had a mean score of 74% (range 45-88%; Beal, 2020b), while a larger sample of 115 M2L2 learners had a mean score of 78% (range 45-93%; Beal et al., 2022). Beal (2020b) and Beal et al. (2022) noted the need for additional instruction related to comprehension of the signer's perspective, including role shift, spatial verbs location, and SASSes. These findings are not surprising, given previous narrative production results for M2L2 learners (Beal-Alvarez &

Scheetz, 2015, Beal et al., 2018; Taub et al., 2008). Beal (2020) reported that age, years of signing experience, university major, or self-reported fluency rating did not relate to ASL-RST performance.

While M2L2 learners clearly know that depicting constructions should be included in narratives, they seem to struggle with knowing when and how to produce them. Proficient native and non-native signing deaf adults regularly use depicting constructions within their narrative productions, showing who did what via enactment and multiple perspectives using CA and DCs (Beal-Alvarez & Trussell, 2015; Cormier et al., 2013; Lupton, 1998; Quinto-Pozos, 2007; Taub et al., 2008). Proficient native-like deaf signers are the ideal language models for signing deaf children, yet in the U.S., the majority of signing deaf children learn ASL from their educational interpreters, most of whom are typically hearing M2L2 ASL learners. M2L2 sign language learners within advanced university-level sign language training use fewer depicting constructions compared to deaf signers and with more errors (Beal-Alvarez & Trussell, 2015; Beal et al., 2018; Bontempo & Hutchinson, 2011; Ferrara & Nilsson, 2017; Marshall & Morgan, 2015). No previous research has documented how to increase M2L2 learners' use of depicting constructions, specifically CA and DCs, so that they can embed these visual constructions in more native-like signer productions when working with deaf students and consumers as interpreters.

It is possible that viewing a video model of a story would provide M2L2 learners with ideas of when and how to include depicting constructions in their narrative productions. Specifically, viewing how an ASL model 'becomes' the characters through the use of CA, how they show the third-person perspective using DCs, how they blend perspectives using CA and DCs to simultaneously show the character as a whole and emphasize specific features, and how they show the visual characteristics of objects and characters through DCs. The purpose of the present study was to investigate the effects of a single viewing of a deaf adult narrative in ASL on M2L2 learners' use of constructed action, depicting constructions, and combinations during their narrative productions of the same story. We asked:

1) How do M2L2 learners' ASL narrative productions and their use of CA and DCs change after one viewing of a fluent deaf ASL model?
2) How are M2L2 learners' use of CA and DCs during their narrative productions related to their ASL comprehension?

METHODS

M2L2 ASL LEARNERS

This study included 21 female students at a university in the southeast U.S. who were interpreting majors (N = 19) or Deaf studies minors (N = 2). Interpreting majors at the university are required to take ASL I-VI courses, three credit hours each, while ASL I-IV are required of Deaf studies minors. ASL I and II are taught in June and July, respectively, in daily 2.5-hour sessions. ASL III is taught in the fall semester; ASL IV and V are taught in the spring semester, and ASL VI is taught in May. All ASL courses at the university are taught in a synchronous hybrid format, with both face-to-face and online learners. ASL instructors use the *Signing Naturally* curriculum (Smith et al., 2008) with supplemental materials specific to each course.

Some specific instruction related to depicting constructions occurred in ASL I, II, III, and IV. In ASL I, students repeatedly viewed and practiced two native ASL signers' narrative renditions from Unit 6 of *Signing Naturally* and reproduced them (i.e., *Timber* and *Gum*; see Beal, 2022a). These renditions embedded the use of depicting constructions to represent characters' entrances and exits and their visual appearances. In ASL II, students practiced depiction through family descriptions, chores, activities with others, and childhood stories. In ASL III, students describe people, clothing, personal items, and personal stories. Finally, in ASL IV, students discuss neighborhoods, restaurants, driving directions, etc. Data for the present study were collected at the end of ASL IV. Students were concurrently in their Numbers, Fingerspelling, and Classifiers course, which was an asynchronous online course, during ASL IV. Assignments in this course included a required reading by Dr. Bill Vicars (http://www.lifeprint.com/asl101/pages-signs/classifiers/classifiers-frame.htm) that provides an overview of different types of classifiers and 36 different classifier handshapes; a narrated classifier overview via PowerPoint presentation by the instructor; viewing four videos by Joseph Wheeler that included 12 different leg classifiers and their associated feelings (https://www.youtube.com/watch?v=ou0Z3nof62A), seven descriptive object classifiers (https://www.youtube.com/watch?v=Ajiog8S9P3Y), classifier handshapes for furniture (i.e., A, B, C, bent V, and O to 5; https://www.youtube.com/watch?v=xPb8AD1rON0), and classifiers in spatial locations (https://www.youtube.com/watch?v=rNWyOtcr2Fc). The total running time for all four videos was 14 minutes and 30 seconds. Students had to create five videos, including five different classifier handshapes within a story; A-K and L-Z handshape stories; imitation of the 12 leg classifier handshapes and their associated feelings; and creation of seven object classifiers. They also had two related written activities, including a reflection on classifier definitions and functions and the creation of a "cheat sheet" to assist them in remembering descriptive and locative classifier handshapes. Across their ASL courses, students are encouraged to attend silent dinners and community events where ASL is the language of communication. The first author taught ASL I to all participants.

Sixteen students attended class and the data collection session face-to-face, and five attended the session online. Most participants (66%) were between 18-24 years of age (29% were older than 28). Based on their response to the question *Amount of time you have been signing*, 57% reported that they had been signing for less than one year, while 29% had been signing for three or more years with a range of 3-26 years (M = 10.6, SD = 8.6). Most self-rated their ASL skills as *conversational* (62%), while 38% rated their skills as *basic*. All participants had completed university-level ASL I, II, III, and IV and a Numbers, Classifiers, and Fingerspelling course. About one-quarter of participants completed high-school level ASL I and II as well. Twenty-one participants completed the narrative rendition tasks; 19 of the 21 completed the ASL-RST.

PROCEDURES

University Institutional Review Board (IRB) ethical approval was obtained for this study. The first author attended an ASL IV class for the data collection session and obtained IRB-approved consent from participants. Participants first completed a background form that asked about their age range, gender, length of ASL signing experience, ASL courses completed, and self-ratings of their ASL skills via a Google Form link. Second, participants completed an online version of the ASL-RST (Enns et al., 2013). The ASL-RST was converted to a Qualtrics survey in which participants

individually completed the ASL-RST by watching the overview and clicking sequential buttons to watch the individual 42 videos and select subsequent responses from their personal technology devices (i.e., Smartphones or laptops). Participant ASL-RST responses were downloaded from the Qualtrics format to an Excel spreadsheet for data analysis. Third, participants rendered the picture book *Goodnight Gorilla* (Rathmann, 1994) in ASL and video-recorded themselves. Directions to participants at both time points stated: "Sign the book using ASL until the characters enter the house." They were not directed to target their productions to a specific audience. Participants regularly video-recorded themselves for ASL productions within and outside of their ASL courses. The book was scanned and provided via pdf for all students; face-to-face students had the option to use a tangible copy of the book during their retellings. A picture book with minimal print (i.e., "Goodnight (animal)") was used as the stimulus to remove any barriers presented when mediating text (i.e., printed English) into ASL. After they recorded their first productions, they watched *Goodnight Gorilla* rendered by Jeni Jackerson in ASL via a YouTube link (https://www.youtube.com/watch?v=C70HST10Wq4). Finally, they signed *Goodnight Gorilla* a second time while recording themselves. Participants uploaded both videos to a course-related GoReact video storage account for analysis. In sum, all tasks were completed independently with a total task time of 60-75 minutes per participant.

DATA CODING AND ANALYSIS

First, participant responses to the background questionnaire were downloaded as an Excel spreadsheet from the Google form, summed, and coded. Responses from the ASL-RST Qualtrics survey were downloaded and coded as correct/incorrect across participants and items and total correct scores, group mean, standard deviation, and range were calculated. Jeni's rendition of *Goodnight Gorilla* was previously coded to document each story event or detail (i.e., episodes) Jeni included and how she did so (i.e., CA, DC, CA + DC or lexical sign(s) only; see Beal et al., 2020). Lexical signs often are used before CA or DC to identify the character or object. For data coding purposes, *lexical signs only* meant the lexical sign was not subsequently followed by CA, DC, or CA+DC (Beal et al., 2020). When a lexical sign immediately preceded a depicting construction, we coded only the use of the specific depicting construct used.

The story was divided into 120 narrative episodes (i.e., specific details or events) based on Jeni's rendition. A new episode was coded when a pause or change in articulator on the part of the signer coincided with a narrative change in the story, similar to the coding approach taken by Cormier and colleagues (2013) and Beal et al. (2020). For example, on a page of the text where the gorilla looks at the keyring, selects a key, and unlocks the cage, each of these events is coded as a separate episode informed by Jeni's transitions among details, exhibited by pauses, change in eye gaze, and/or changes in constructed action to signal transitions between events. We chose episode rather than utterance as the unit of analysis with the intention of analyzing important narrative episodes that were included in participant renditions and, more importantly, *how* these episodes were produced. While we recognize the inherent difficulties with this approach, especially in scenarios where participants, particularly in their T1 renditions, expressed the story differently than Jeni, the goal of the study was to examine whether viewing the native signing model specifically resulted in changes in depiction use at T2. Therefore, we based episodes on Jeni's rendition as the best way to answer this specific question.

A Google form included 120 narrative episodes and multiple-choice options related to if the episode was included (i.e., Yes/No) and how the episodes were rendered: *not included, not clear, CA, DC, CA+DC,* and *lexical signs only*. CA included the use of at least one of the following articulators: eyes, mouth, head, torso, dominant hand, and/or non-dominant hand to imitate a character. A CA example was the signer's facial expression and arms enacting the characteristics of the hyena (see Figure 1). A DC example was a vertical index handshape moving forward to show the zookeeper walking (see Figure 2). A CA+DC example was the use of facial expression to show the gorilla looking at the keys, represented with a DC of splayed fingers (see Figure 3). Note: All figures are screenshots of Jeni's publicly available video with her written permission to publish. This Google form was used to code and analyze participants' narrative renditions at Time 1 (T1) and Time 2 (T2). The *not clear* code was primarily used when it was not possible to clearly determine the usage and/or meaning of a sign or phrase. Although there were times when a CA and/or DC construction was preceded by a lexical sign, we coded the more advanced linguistic construct (CA and/or DC). As a result, it is likely that the number of lexical productions identified in this analysis is an underrepresentation of the number that was used by the signers. We chose this approach because M2L2 learners are often considered stronger at lexical signs and weaker at using DC and/or CA (Lawrence, 2003). Our coding system was episode-based to capture the broader expression of the story rather than individual utterances.

Figure 1. *An example of constructed action with the signer's facial expression and arms enacting the characteristics of the hyena*

Note. This occurred at 4:17 in the video.

Figure 2. *Example of a vertical index handshape depicting construction moving forward to show the zookeeper walking*

Note. This occurred at 2:04 in the video.

Figure 3. *An example of constructed action (i.e., facial expression of gorilla) combined with a depicting construction (i.e., hands representing splayed keys) (at 3:34 in the video).*

To answer the first research question, we calculated the following for each participant's T1 and T2 video: 1) the length of each narrative rendition; 2) the total number of narrative episodes the participant included; 3) the total number of each type of construct produced (i.e., *CA, DC, CA+DC, lexical signs only*); and 4) the change in length, number of episodes, and number of each construct produced from T1 to T2. To determine if any changes in the number of narrative episodes and constructs used were significant, we calculated paired samples *t*-tests and Pearson product

correlations. We also investigated if the length of signing experience correlated with aspects of narrative renditions. To answer the second question, we calculated correlations between ASL-RST scores and length of narratives in seconds; the total number of CA, DCs, and CA+DC produced; and the length of signing time.

INTER-OBSERVER AGREEMENT

Each author independently coded each T1 and T2 video using the Google form. All authors are hearing and have an Advanced or Advanced Plus score on the Sign Language Proficiency Interview (SLPI; Newell et al., 1983), worked at schools for the deaf and within university programs, and individually have over 15 years of experience using ASL for instruction and communication. Inter-observer agreement (IOA) ranged from 67-96% at T1 (M = 81%) to 66-91% at T2 (M = 76%). After independent coding, all authors simultaneously watched each video and resolved any differences for a joint IOA of 100%.

RESULTS

First, we asked how M2L2 learners' narrative renditions changed, specifically their use of CA and DCs, before and after watching an ASL model. To answer this question, we calculated the number and type of productions (i.e., *CA*, *DCs*, *CA+DC*, and *lexical signs only*) used by Jeni and M2L2 learners in their narrative renditions of *Goodnight Gorilla.*

DEAF ADULT MODEL

Jeni is a deaf native signer from a deaf family. She attended the California School for the Deaf (Fremont) and Gallaudet University and works at a school for the deaf (J. Jackerson, personal communication, November 17, 2017). She publicly posted her video-recorded rendition of *Goodnight Gorilla* on YouTube. The pictures from the book are displayed behind her as she signs the story, in which a zookeeper walks sequentially to the cages of six different zoo animals and tells each one "Good night" (the only text in the book). A gorilla steals the zookeeper's keys, unbeknownst to the zookeeper, and lets each animal out of its cage. All animals follow the zookeeper back to his house to retire for the night. Jeni's video was used as the deaf adult ASL model for the present study. Jeni's rendition was analyzed in detail in Beal et al. (2020). From the beginning of the story to the point at which the zookeeper enters his house, Jeni included 120 narrative episodes (defined as signed phrases to express an event from the story using lexical signs, CA, and/or DCs) across 6 minutes 21 seconds (381 seconds) (see Table 1). Across the 120 episodes, Jeni used CA (N = 49, 41%) and CA+DC (N = 45, 38%) twice as often as DC alone (N = 23, 19%) and used *lexical signs only* sparingly (N = 3, 2%). To describe animals' appearances, she used predominantly semantic DCs (N = 38; 84%) and SASSes to a lesser degree (N = 7, 16%), paired with character facial expressions within a blended perspective. When using DCs alone, Jeni used 13 semantic DCs to show the location and 17 SASSes to show the visual aspects of characters, objects in cages, and the keys.

Table 1. *Changes in M2L2 learners' narrative renditions as a group from Time 1 to Time 2*

	Jeni's Rendition	M2L2 Time 1			M2L2 Time 2			$t(20)$ (p)	r (p)
		M	SD	Range	M	SD	Range		
Total episodes (out of 120)	120	38.14	12.59	7-57	63.57	20.18	19-99	-7.98 (< .000)	.694 (< .000)
DC[a]	23	8.95	4.65	1-15	19.95	10.59	9-46	-5.02 (< .000)	.335 (.138)
DC % of total productions	19	22.8	9.7	5.9-38.7	31.7	11.4	12.5-57.9		
CA[b]	49	10.71	5.52	1-21	16.33	7.17	1-25	-4.52 (< .000)	.652 (.002)
CA % of total productions	41	28.8	14.1	3.3-70.6	25.8	9.5	2.1-41.9		
CA+DC	45	2.52	2.89	0-9	8.57	8.63	0-33	-3.62 (.002)	.484 (.026)
CA+DC % of total productions	38	6.5	6.9	0-20.9	11.9	9.6	0-34.7		
Lexical signs only	3	15.95	8.45	0-33	18.71	9.61	1-30	-1.79 (.089)	.699 (< .000)
Lexical signs only % of total productions	2	41.9	19.2	0-79.4	30.7	14.8	1.3-60.3		

Note: Pairwise *t*-tests and Pearson's correlations. (-) indicates no data. [a]DC = depicting construct; [b]CA = constructed action.

M2L2 ASL LEARNERS

Individual learner scores across constructions are presented in Table 2. At T1, the number of included narrative episodes ranged from 7 to 57 (M = 38, SD = 13).

Table 2. *M2L2 learners' narrative renditions and ASL Receptive Skills Test (ASL-RST) scores*

	Time 1					Time 2					
ASL Time [a]	CA [b]	DC [c]	CA+DC	Lexical Sign Only [d]	Total productions	CA	DC	CA+DC	Lexical Sign Only	Total productions	ASL-RST
0;10	13	2	4	15	34	22	15	4	17	58	30
0;10	16	13	7	11	47	21	30	13	12	76	33
0;10	3	4	0	27	34	7	18	2	22	49	-
0;10	8	12	2	9	31	13	21	7	23	64	33
0;10	6	2	3	12	23	12	10	8	16	46	34
0;10	20	15	1	21	57	11	13	8	26	58	32
0;10	21	8	0	19	48	24	15	11	20	70	38
0;10	16	15	8	2	41	18	38	22	1	79	37
0;10	13	15	3	12	43	21	15	4	16	56	37
0;10	8	12	0	13	33	13	15	0	14	42	33
0;10	1	9	0	20	30	1	15	5	27	48	30
1;0	11	9	3	29	52	10	13	2	38	63	33
1;2	12	3	2	0	17	13	9	0	9	31	-
2;0	2	1	0	4	7	4	11	1	3	19	31
2;3	9	11	0	19	39	24	10	7	39	80	31
3;3	6	9	2	16	33	16	41	5	22	84	33
Tab5;3	12	8	9	14	43	23	23	26	10	82	34
6;0	13	12	7	24	56	18	23	9	20	70	35
8;3	14	15	1	19	49	26	24	33	12	95	35
15;0	15	5	0	16	36	25	14	4	23	66	37
26;0	6	8	1	33	48	21	46	9	23	99	34
M	10.71	8.95	2.52	15.95	38.14	16.33	19.95	8.57	18.71	63.57	33.68
SD	5.52	4.65	2.89	8.45	12.59	7.17	10.59	8.63	9.61	20.18	2.38

Note: [a] years;months. [b] CA = constructed action. [c] DC = depicting construction. [d] Lexical sign not followed by CA, DC, or CA+DC. (-) indicates no data available.

Across these rendered episodes, 15 participants (71%) used predominantly lexical signs (meaning that most episodes were signed with lexical signs only and no CA or DCs), while four participants (19%) used predominantly CA (which may have occurred in conjunction with lexical signs), and two participants (10%) used predominantly DCs (which also may have occurred in conjunction with lexical signs). Across their rendered narrative episodes, all participants used at least one instance of both CA and DC; however, seven participants (33%) used no instances of simultaneous

CA+DC. At T1, on average, the M2L2 learners used *lexical signs only* about 42% of the time, while they used CA about 29% of the time, DCs 23% of the time, and CA+DC less than 7% of the time. Only two instances of *not clear* occurred at T1, such as a participant inaccurately signed FOLLOW, with the hands passing each other for *Gorilla walks*.

At T2, the number of included narrative episodes ranged from 19 to 99 (M = 64, SD = 20) and remained noticeably lower than Jeni's included 120 episodes. Across these rendered episodes, participants used *lexical signs only* 19% of the time (a decrease of 23% from T1) and largely above Jeni's 2%. Participants used CA 26% of the time (a decrease of 3%), in comparison to Jeni's 41%, and DC 32% of the time (an increase of 9%), in comparison to Jeni's 19%. Finally, they used CA+DC 12% of the time, an increase of 5.5%, but vastly less than Jeni's 38%. Two participants used no instances of CA+DC at T2. Only four instances of *not clear* occurred at T2.

Changes from T1 to T2 for all constructs were statistically significant, except *lexical signs only*. All constructs, including *lexical signs only*, significantly and moderately correlated from T1 to T2. As a group, participants increased their total number of constructions used to describe narrative episodes by about 60% from T1 (N = 38) to T2 (N = 64). On average, participants increased their use of CA by about five instances from T1 to T2 (from 11 to 16), although two participants decreased their use of CA from T1 to T2. Participants doubled their use of DCs from T1 (N = 9) to T2 (N = 20), although one participant did not increase their use of DCs. Individually, 17 participants increased their use of CA+DC from T1 to T2, and as a group, they increased their use of CA+DC from an average of 3 instances to 9 instances. Seven participants used no CA+DC at T1, while only two used none at T2. While their number of *lexical signs only* increased by about three instances at T2, the proportion of productions that were *lexical signs only* decreased by 11%. Fourteen participants increased their use of *lexical signs only*, while seven decreased from T1 to T2, showing that participants included more information overall.

T1 renditions ranged from 0:45 to 6:23 (M = 3:23, minutes:seconds, SD = 1:23), and T2 length ranged from 1:50 to 10:46 (M = 5:17, SD = 2:12). Length of renditions significantly and strongly correlated with the total number of included narrative episodes at T1 ($r = .776$, $p < .000$) and T2 ($r = .822$, $p < .000$). Length of signing experience was reported by participants in years and months and correlational analyses were conducted with narrative performance. Only three correlations were significant: 1) At T1, length of signing experience negatively and moderately correlated with *lexical signs only*, $r = -.452$, $p = .039$; 2) At T2, length of signing experience positively and moderately correlated with total constructions used for narrative episodes, $r = .516$, $p = .017$; and 3) At T2, length of signing experience positively and moderately correlated with DCs, $r = .501$, $p = .021$.

ASL-RST

Next, we asked if there was any relation between participants' receptive ASL comprehension and their use of CA and DCs with their narrative productions. Nineteen of the 21 participants completed the ASL-RST. Overall scores ranged from 30 (71% correct) to 38 (90% correct; M = 80.2%, SD = 5.7%). Mean scores by grammatical category were as follows: negation (90.6%), conditionals (89.5%), noun-verb (89.5%), spatial verbs action (85.5%), handling classifiers (80.7%), SASSes (78.9%), number-distribution (70.7%), spatial verbs location (70.4%), and role shift (52.6%). On the ASL-RST, there are three items related to handling classifiers (e.g., two

hands holding a big sandwich) and three related to role shift (e.g., boy taps girl, girl turns to look at boy). These two categories align with CA in the present study, such as the zookeeper walking while swinging the flashlight back and forth and the gorilla placing the key into each cage and turning it. The ASL-RST has four items related to SASSes (e.g., indicating stripes down on a shirt); these relate to SASS DCs in the present study, such as BARS-IN-CAGE, BALL, ELEPHANT-TUSKS, etc. However, participant performance in these three ASL-RST categories did not significantly correlate with CA use during their narrative renditions at T1 or T2. Participants scored 50% or higher across all but nine of the 42 items, all of which occurred across three categories: spatial verbs location (4), number distribution (3), and role shift (2). Length of signing experience did not correlate with ASL-RST score, $r = .230$, $p = .343$, and ASL-RST scores did not correlate with total narrative episodes included or use of depicting constructions within participants' narrative renditions with the exception of CA at both T1 ($r = .556$, $p = .014$) and T2 ($r = .531$, $p = .019$).

DISCUSSION

First, we investigated M2L2 learners' production of CA, DCs, and combinations of these within an ASL narrative rendition before and after watching a deaf native signer's rendition. During their first rendition, most participants used predominantly *lexical signs only* (42%) to tell the story, without subsequent production of CA or DCs, and *lexical signs only* reduced to 19% after viewing Jeni's video. This starkly contrasts with Jeni, who used *lexical signs only* sparingly (2%). This indicates that M2L2 learners remained reliant on lexical signs to identify characters and objects and subsequently reference them to a much larger extent than Jeni, who overwhelmingly used CA and DCs, even after participants viewed Jeni's rendition. M2L2 use of *lexical signs only* in place of more visual constructs aligns with previous findings for NSL M2L2 learners within their spatial description task (Ferrara & Nilsson, 2017) and BSL M2L2 learners when describing the locations of objects (Marshall & Morgan, 2015).

Overall, M2L2 learners who had completed four university-level ASL courses used CA for less than a third of their productions when representing narrative episodes in the present picture book task, both before and after viewing Jeni's rendition. While Jeni's rendition was professionally produced and likely well-practiced, she used common ASL strategies of describing a scene and the characters within it prior to describing the action (Beal-Alvarez & Trussell, 2015; Emmorey et al., 2001). Jeni described the scene on each page of the book, such as the bars on the cages, toys in the cages, and the visual characteristics of the animals, such as the elephant's trunk and tusks, the giraffe's ossicones and spots, and the armadillo's ears and armor, prior to showing the action events. Few participants included these descriptive details even after viewing Jeni's rendition, resulting in little change in their use of CA from T1 to T2. However, a reorganization of *how* they told the story was evident after one viewing of Jeni's model, such as establishing the cages before naming the animals within them.

Participants' use of DCs increased 9% from T1 (23%) to T2 (32%) and remained more frequent than Jeni's use of DCs (19%). In contrast to Jeni (38%), M2L2 learners used blended perspectives (i.e., CA+DC) sparingly at T1 (7%); seven participants used no CA+DC, similar to M2L2 learners who used no blended perspectives in their narrative renditions of a cartoon after 5-8 months of ASL instruction (Kurz et al., 2019). After viewing Jeni's video, CA+DC accounted for only 12% of participants' productions, although five of the seven participants who did not use

CA+DC (at T1) did so in their second rendition. This may suggest that viewing Jeni's rendition made M2L2 learners aware of the option to use blended perspectives for clarity in ASL narrative renditions. Two participants used no CA+DC in either rendition; it is unclear if this was a conscious choice or lack of awareness/ability to produce these constructions. The present findings support Kurz et al.'s conclusion that less proficient M2L2 signers may know how to present different perspectives within signed narrative renditions, but they do not consistently do so. White (2014) suggested explicit instruction in blended spaces within interpreter education, which might include navigation among several characters using depicting constructions. Thumann (2011) specifically noted the need to teach M2L2 learners to attend to subtle changes in signing that indicate subsequent depiction, including head position, eye gaze, and facial expression, which were used in combination by deaf signers much more frequently than shoulder shift to identify switches among characters. After identification of these features that indicate depicting constructions, interpreter educators can teach M2L2 learners to replicate these features in their own signing to clearly indicate subsequent use of depiction. Nicodemus and Emmorey (2015) proposed the use of a simultaneous video feedback loop while M2L2 learners sign for real-time monitoring of the accuracy of their productions from an audience perspective to alleviate the previously mentioned barriers of seeing only the backs of their hands, without visual monitoring of their facial articulators, during signed productions.

Based on the present results, viewing a model ASL narrative rendition that includes blended perspectives may result in increased use of depicting constructions by M2L2 learners when retelling the same story. After watching Jeni's rendition, participants more than doubled their number of narrative episodes, suggesting they were more aware of *what* to tell after viewing the model. At T2, they significantly increased their use of CA, DCs, and CA+DCs (but not their use of *lexical signs only*), suggesting they also were more aware of *how* to show the events in the story using visual constructions in place of using only lexical signs, which decreased in their second renditions. It is unclear if M2L2 learners will generalize the use of depicting constructions within other, non-modeled narrative renditions.

Length of signing experience negatively correlated with participants' production of *lexical signs only*, meaning that those with more signing experience produced fewer lexical signs. At T2, signing experience positively correlated with length of narrative renditions (in time), total constructions produced, and the number of DCs produced, suggesting that participants with more years of sign language experience used more visual constructions than signers with less experience after a single viewing of an ASL model. It is unclear if and how signers with less experience would benefit from additional viewings of the ASL model, with and without instructor mediation, at the conclusion of ASL IV. Beal (2022a) found that repeated viewings of two ASL video models paired with explicit instruction during ASL I resulted in M2L2 learners' inclusion of target narrative episodes and their use of CA and DCs within their practiced retells. M2L2 learners also accurately self-rated their inclusion of narrative details and how they produced them (i.e., lexical signs only, CA, DC, CA+DC). Future investigations might compare M2L2 learners' use of depicting constructions within their narrative renditions after varied numbers of model video viewings and varied levels of instructional support.

One limitation in the present study was participant eye gaze on the pages of the book when signing, which interfered with accurate eye gaze during instances of CA (Beal et al., 2020). M2L2

learners used either a tangible book placed on the table between them and the camera or a digital copy of the book on the computer screen. Future research should standardize book placement (e.g., a digital version on a computer with the video camera at the top of the computer) and include two subsequent videos in which students watch their T1 and T2 renditions and voice interpret what they attempted to sign within their narratives. Future research also might investigate how M2L2 learners use depicting constructions when signing stories that require mediation of printed text or interpreting storybooks that are read aloud using spoken language.

Relationship between ASL Comprehension and Narrative Renditions

We also investigated how M2L2 learners' use of CA and DCs within their narrative renditions related to their ASL comprehension using the ASL-RST. The mean ASL-RST score for this group of M2L2 ASL learners was 80% correct (range 71-88%), which is slightly higher than other larger samples of M2L2 learners (74%, Beal, 2020b; 78%, Beal et al., 2022) and similar to Lieberman et al.'s (2014) sample of M2L2 learners with at least three years of ASL experience beyond university training (80%). Participants in the present study had more comprehension difficulty with three categories related to the use of visual space, namely number-distribution (70.7%), spatial verbs location (70.4%), and role shift (52.6%), which replicates previous findings (Beal, 2020; Beal et al., 2022).

ASL-RST scores did not correlate with participants' length of signing experience or any construct within their narrative renditions, with the exception of CA at both times. CA scores for participants' renditions moderately and significantly correlated with their ASL-RST results at both time points. There are six items on the ASL-RST that directly relate to CA production within the handling classifiers (3) and role shift (3) categories. Participants as a group scored much higher for handling classifiers (81%) than role shift (53%), perhaps suggesting a need for explicit instruction in comprehension of role shift, as mentioned by Thumann (2011). M2L2 learners who scored higher on the ASL-RST also produced more CA within their T2 renditions, which suggests those who comprehend more ASL based on the ASL-RST also produced more CA within their renditions. Perhaps CA is difficult for beginning M2L2 learners to acquire when learning ASL, as shown by previous researchers (Kurz et al., 2019). One aspect of CA, although not always required within CA productions, is nonmanual markers, specifically, facial expressions. M2L2 learners may be unaware of their lack of inclusion of these articulators within CA, or they may underestimate the difficulty of facial expressions in ASL. M2L2 learners rated *nonmanual signals* as a 3 on a 1-6 scale of difficulty (6 being the hardest), while ASL instructors rated them as 6 (McKee & McKee, 1992). A deaf instructor within McKee and McKee's study noted that M2L2 learners thought facial expressions and body movements were only for dramatic purposes and not "integral features of ASL itself" (p. 139). Enactment of character actions occurs in spoken language, but it is unclear how often it occurs at the individual speaker level and how frequently facial expressions are produced (Hodge & Cormier, 2019; Sidnell, 2006). Some M2L2 ASL learners appear to be inhibited in using nonmanual signals because they conflict with spoken English norms, including specific facial expressions and body movements (McKee & McKee, 1992, p. 138). Despite watching Jeni engage in CA repeatedly when introducing and maintaining animals within her narrative rendition, M2L2 learners in ASL IV used fewer instances of CA within their renditions than Jeni modeled. It is unclear when instructors should expect accurate use of CA within character and blended perspectives and how much instruction is needed to use CA as frequently as signing

deaf adults to show characters and their actions within narratives. The use of visual feedback via a video loop warrants further investigation with M2L2 sign language learners in interpreting preparation programs.

Previous researchers have called for extended studies of M2L2 learners to examine acquisition timelines related to CA and DCs from their first ASL course until they become more advanced signers (Kurz et al., 2019; Marshall & Morgan, 2015) and if their acquisition benefits from explicit instruction. Beal (2022a) investigated repeated viewings of ASL models paired with explicit instruction with ASL I M2L2 learners and reported high levels of agreement between learners and instructor related to the presence or absence of CA and DCs, suggesting that beginning signers can understand and recognize the use of these depicting constructions with explicit instruction. The findings from the present study suggest that beginning signers at the end of ASL IV benefitted from the single viewing intervention in terms of the length of rendition, increased inclusion of specific narrative episodes, and use of CA and DCs in place of *lexical signs only*; future research might investigate the amount of explicit instruction and the number of repeated viewings needed to advance M2L2 learners' use of CA and DCs within narrative renditions. Interpreter educators should embed explicit instruction related to recognition of and accurate production of depicting constructions, including constructed action, using signed language models paired with student self-evaluation of their depiction accuracy to increase inclusion of this vital construct within their future interpreting practices.

REFERENCES

Aarons, D., & Morgan, R. (2003). Classifier predicates and the creation of multiple perspectives in South African Sign Language. *Sign Language Studies, 3*(2), 125-156. https://www.jstor.org/stable/26204869

Armstrong, J. (2003). *An investigation of constructed action and dialogue in an American Sign Language interpreted lecture*. (Unpublished master's thesis). Ball State University.

Ashton, G., Cagle, K., Kurz, K., Newell, W., Peterson, R., & Zinza, J. (2014). *Standards for Learning American Sign Language*. https://aslta.org/wp-content/uploads/2016/06/National_ASL_Standards.pdf

Beal, J. (2020). University American Sign Language (ASL) second language learners: Receptive and expressive ASL performance. *Journal of Interpretation, 28*(1). https://digitalcommons.unf.edu/joi/vol28/iss1/1

Beal, J. S. (2022). University American Sign Language learners: Self-awareness and error analysis within a narrative context. *Sign Language Studies, 22*(2), 193-230. doi: 10.1353/sls.2021.0018

Beal, J. S., & Faniel, K. (2018). Hearing L2 sign language learners: How do they perform on ASL phonological fluency? *Sign Language Studies, 19*(2), 204-224. doi: 10.1353/sls.2018.0032

Beal, J. S., Scheetz, N. A., Trussell, J. W., McAllister, A., & Listman, J. (2018). University American Sign Language Learners: Longitudinal self- and faculty evaluation ratings. *Journal of Interpretation, 26*(1), 1-27. https://digitalcommons.unf.edu/cgi/viewcontent.cgi?article=1084&context=joi

Beal, J. S., Scott, J. A., & Spell, K. (2020). *Goodnight Gorilla*: Deaf student ASL narrative renditions after viewing a model. *Journal of Deaf Studies and Deaf Education, 26*(1), 85-98.https://doi.org/10.1093/deafed/enaa022

Beal, J. S., Trussell, J. W., & Walton, D. (2021). Incoming deaf college students' sign language skills: Self-awareness and intervention. *Journal of Language, Identity, and Education*. doi: 10.1080/15348458.2021.1878360

Beal, J. S., Trussell, J. W., & Walton, D. (2022). Four American Sign Language learner groups: Are they really different? *Journal of Deaf Studies and Deaf Education.* https://doi.org/10.1093/deafed/enac004

Beal-Alvarez, J. S. (2014). Deaf students' receptive and expressive American Sign Language skills: Comparisons and relations. *Journal of Deaf Studies and Deaf Education, 19*(4), 508-529. doi: 10.1093/deafed/enu025

Beal-Alvarez, J. S. (2016). Longitudinal receptive American Sign Language skills across a diverse deaf student body. *Journal of Deaf Studies and Deaf Education, 21*(2), 1-13. doi: 10.1093/deafed/enw002

Beal-Alvarez, J. S., & Easterbrooks, S. R. (2013). Increasing children's ASL classifier production: A multi-component intervention. *American Annals of the Deaf, 158*(3), 311-333. doi: 10.1353/aad.2013.0028

Beal-Alvarez, J. S., & Scheetz, N. A. (2015). Pre-service teacher and interpreter American Sign Language Abilities: Self-evaluations and evaluations of deaf students' narrative renditions. *American Annals of the Deaf, 160*(3), 316-333.

Beal-Alvarez, J. S., & Trussell, J. (2015). Depicting verbs and constructed action: Necessary components in Deaf adults' storybook renditions. *Sign Language Studies, 16*(1), 5-29. https://www.jstor.org/stable/26191928

Bandura, A., & Jeffrey, R. W. (1973). Role of symbolic coding and rehearsal processes in observational learning. *Journal of Personality and Social Psychology, 26*(1), 122-130. https://doi.org/10.1037/h0034205

Bandura, A., Grusec, J. E. & Menlove, F. L. (1966). Observational learning as a function of symbolization and incentive set. *Child Development, 37*, 499-506. https://www.jstor.org/stable/1126674

Becker, C. (2009). Narrative competences of deaf children in German Sign Language. *Sign Language & Linguistics, 12*(2), 113-160. doi: 10.1075/sl&l.12.2.02.bec

Bel, A., Ortells, M., & Morgan, G. (2015). Reference control in the narratives of adult sign language learners. *International Journal of Bilingualism, 19*, 608–624. https://doi.org/10.1177/1367006914527186

Bickford, J. A., & Fraychineaud, K. (2008). Mouth morphemes in ASL: A closer look. In R. M. de Quadros (Ed.), *Sign languages: Spinning and unraveling the past, present, and future*. Theoretical Issues in Sign Language Research Conference, Florianopolis, Brazil, December, 2006.

Bochner, J. H., Christie, K., Hauser, P. C., & Searls, J. M. (2011). When is a difference really different? Learners' discrimination of linguistic contrasts in American Sign Language. *Language Learning, 61*(4), 1302-1327. https://doi.org/10.1111/j.1467-9922.2011.00671.x

Bontempo, K., & Hutchinson, B. (2011). Striving for an 'A' grade: A case study in performance management of interpreters. *International Journal of Interpreter Education, 3*, 56-71. https://tigerprints.clemson.edu/ijie/vol3/iss1/6

Buisson, G. J. (2007). Using online glossing lessons for accelerated instruction in ASL for preservice deaf education majors. *American Annals of the Deaf, 152*, 331–343. https://aquila.usm.edu/fac_pubs/1984

Cannon, J. E., Fredrick, L. D., & Easterbrooks, S. R. (2010). Vocabulary instruction through books read in American Sign Language for English-language learners with hearing loss. *Communication Disorders Quarterly, 31*(2), 98-112. https://doi.org/10.1177/1525740109332832

Chen Pichler, D. (2009). Sign production by first-time hearing signers: A closer look at handshape accuracy. *Cadernos de Saude, 2,* 37-50. Retrieved from: https://www.gallaudet.edu/Documents/Academic/LIN/Chen%20Pichler%202009%20Cadernos.pdf

Chen Pichler, D., & Koulidobrova, H. (2015). Acquisition of sign language as a second language. In M. Marschark & P. E. Spencer (Eds.), *The Oxford handbook of deaf studies in language* (pp. 218-230). Oxford University Press.

Cormier, K., Quinto-Pozos, D., Sevcikova, Z., & Schembri, A. (2012). Lexicalisation and de-lexicalisation processes in sign languages: Comparing depicting constructions and viewpoint gestures. *Language & Communication, 32*, 329-348. http://dx.doi.org/10.1016/j.langcom.2012.09.004

Cormier, K., Smith, S., & Sevcikova, Z. (2013). Predicate structures, gesture, and simultaneity in the representation of action in British Sign Language: Evidence from deaf children and adults. *Journal of Deaf Studies and Deaf Education, 18*(3), 370-390. https://doi.org/10.1093/deafed/ent020

Cormier, K., Smith, S., & Sevcikova-Sehyr, Z. (2015). Rethinking constructed action. *Sign Language and Linguistics, 18*(2), 167-204. doi: https://doi.org/10.1075/sll.18.2.01cor

Cormier, K., Smith, S., & Zwets, M. (2013). Framing constructed action in British Sign Language narratives. *Journal of Pragmatics 55*, 119-39. https://doi.org/10.1016/j.pragma.2013.06.002

Dudis, P. (2002). Grounded blend maintenance as a discourse strategy. In C. Lucas (Ed.), *Turn-taking, fingerspelling, and contact in signed languages* (pp. 53–71). Gallaudet University Press.

Dudis, P. G. (2004). Body partitioning and real-space blends. *Cognitive Linguistics, 15*(2), 223-238. https://doi.org/10.1515/cogl.2004.009

Dudis, P. (2007). *Types of depiction in ASL*. Retrieved from http://drl.gallaudet.edu.

Dudis, P. (2011). The body in scene depictions. In C. B. Roy (Ed.), *Discourse in signed languages*, (pp. 3–45). Gallaudet University Press.

Emmorey, K., Tversky, B., & Taylor, H. A. (2001). Using space to describe space: Perspectives in speech, sign, and gesture. *Spatial Cognition and Computation, 2*, 157-180. https://doi.org/10.1023/A:1013118114571

Ferrara, L., & Nilsson, A-L. (2017). Describing spatial layouts as an L2M2 signed language learner. *Sign Language & Linguistics, 20*(1), 1-26. https://doi.org/10.1075/sll.20.1.01fer

Fischer, R., & Muller, A. (2014). eLCA-An e-learning unit for acquiring constructed action. In D. McKee, R. S. Rosen, & R. McKee (Eds.), *Teaching and learning signed languages: International perspectives and practices* (pp. 111-128). Palgrave MacMillian.

Goldberg, D., Looney, D., & Lusin, N. (2015). *Enrollments in languages other than English in United States institutions of higher education, Fall 2013.* Modern Language Association. Retrieved from: https://www.mla.org/content/download/31180/1452509/EMB_enrllmnts_nonEngl_2013.pdf

Guardino, C., Cannon, J. E., & Eberst, K. (2014). Building the evidence-base of effective reading strategies to use with deaf English-language learners. *Communication Disorders Quarterly, 35*(2), 59-73. https://doi.org/10.1177/1525740113506932

Halley, M. (2020). Rendering depiction: A case study of an American Sign Language/English interpreter. *Journal of Interpretation, 28*(2), 1-40. https://digitalcommons.unf.edu/joi/vol28/iss2/3

Henner, J., Hoffmeister, R., & Reis, J. (2017). Developing sign language measurements for research with deaf populations. In S. W. Cawthon & C. L. Garberoglio (Eds.), *Research in Deaf Education: Contexts, Challenges, and Considerations* (pp. 141-160). Oxford University Press.

Hodge, G., & Cormier, K. (2019). Reported speech as enactment. *Linguistic Typology, 23*(1), 185-196. https://doi.org/10.1515/lingty-2019-0008

Humphries, T., & Allen, B. M. (2008). Reorganizing teacher preparation in deaf education. *Sign Language Studies, 8*(2), 160-180. https://www.jstor.org/stable/26190641

Jacobs, R. (1996). Just how hard is it to learn ASL? The case for ASL as a truly foreign language. In C. Lucas (Ed.), *Multicultural aspects of sociolinguistics in deaf communities, Volume 3*, (pp. 183-226). Gallaudet University Press.

Kemp, M. (1998). Why is learning American Sign Language a challenge? *American Annals of the Deaf, 143*(3), 255-259. https://www.jstor.org/stable/44392557

Kurz, K. B., Mullaney, K., & Occhino, C. (2019). Constructed action in American Sign Language: A look at second language learners in a second modality. *Languages, 4*(90), 1-19. https://doi.org/10.3390/languages4040090

Kurz, K. B., & Taylor, M. M. (2008). *Learning outcomes for American Sign Language skills levels 1-4.* Rochester Institute of Technology. Retrieved from: https://scholarworks.rit.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsr

edir=1&article=1062&context=books#:~:text=The%20Learning%20Outcomes%20for%20American,goals%2C%20is%20briefly%20described%20here.

Lawrence, S. (2003). *Interpreter discourse: ASL to English expansion*. Proceedings of the 10th Convention of the Conference of Interpreter Trainers. Charlotte, NC.

Liddell, S. K. (2003). *Grammar, Gesture, and Meaning in American Sign Language.* Cambridge University Press.

Lu, J. C., & Goldin-Meadow, S. (2018). Creating images with the stroke of a hand: Depiction of size and shape in sign language. *Frontiers in Psychology*, 9, 1–15. doi: 10.3389/fpsyg.2018.01276

Lupton, L. (1998). Fluency in American Sign Language. *Journal of Deaf Studies and Deaf Education, 3*(4), 320-328. https://doi.org/10.1093/oxfordjournals.deafed.a014359

Marshall, C. R., & Morgan, G. (2015). From gesture to sign language: Conventionalization of classifier constructions by adult hearing learners of British Sign Language. *Topics in Cognitive Science, 7*, 61-80. https://doi.org/10.1111/tops.12118

Mbati, L. (2013). Online social media applications for constructivism and observational learning. *International Review of Research in Open and Distance Learning*, *14*(5), 166-185. https://doi.org/10.19173/irrodl.v14i5.1579

McKee, R. L., & McKee, D. (1992). What's so hard about learning ASL? Students' and teachers' perceptions. *Sign Language Studies, 75*, 129–158. https://doi.org/10.1353/sls.1992.0000

Metzger, M. (1995). Constructed dialogue and constructed action in American Sign Language. In C. Lucas (Ed.), *Sociolinguistics in Deaf communities* (pp. 255-271). Gallaudet University Press.

Metzger, M., Cagle, K. M., & Hunt, D. I. J. (2019). Using sign language to teach sign language interpreters. In R. Rosen (Ed.), *The Routledge Handbook of sign language pedagogy.* 14 pp. https://doi.org/10.4324/9781315406824

Morgan, G., & Woll, B. (2007). Understanding sign language classifiers through a polycomponential approach. *Lingua, 117*, 1159-1168. https://doi.org/10.1016/j.lingua.2006.01.006

Newell, W., F. Caccamise, K. Boardman, & B. R. Holcomb. (1983). Adaptation of the Language Proficiency Interview (LPI) for assessing sign communicative competence. *Sign Language Studies, 41,* 311–352. https://www.jstor.org/stable/26203550

Nicodemus, B., & Emmorey, K. (2015). Directionality in ASL-English interpreting: Accuracy and articulation quality in L1 and L2. *Interpreting, 17*(2), 145-166. https://doi.org/10.1075/intp.17.2.01nic

Perniss, P. M. (2007). Achieving spatial coherence in German Sign Language narratives: The use of classifiers and perspective. *Lingua, 117,* 1315-1338. https://doi.org/10.1016/j.lingua.2005.06.013

Quinto-Pozos, D. (2005). Factors that influence the acquisition of ASL for interpreting students. In M. Marschark, R. Peterson, & E. Winston (Eds.), *Sign language interpreting and interpreter education: Directions for research and practice* (pp. 159–187). Oxford University Press.

Quinto-Pozos, D. (2007). Why does constructed action seem obligatory? An analysis of "classifiers" and the lack of articulator-referent correspondence. *Sign Language Studies, 7*(4), 458-506. https://www.jstor.org/stable/26190713

Quinto-Pozos, D., & Mehta, S. (2010). Register variation in mimetic gestural complements to signed language. *Journal of Pragmatics, 42,* 557-584. https://doi.org/10.1016/j.pragma.2009.08.004

Quinto-Pozos, D., Cormier, K., & Ramsey, C. (2009). *Constructed action of highly animate referents: Evidence from American, British, and Mexican Sign Languages*. In the 35th Annual Meeting of the Berkeley Linguistics Society (Special Session on Non-Speech Modalities), Berkeley, CA.

Rosen, R. (2014). Between-learners' outside-of-classroom uses of American Sign Language as a foreign language. *Sign Language Studies, 14*(3), 360-381. https://www.jstor.org/stable/26191217

Schick, B. (1990). Classifier predicates in American Sign Language. *International Journal of Sign Linguistics, 1*(1), 15-40.

Schick, B. (2006). Acquiring a visually motivated language: Evidence from diverse learners. In B. Schick, M. Marschark, & P E. Spencer (Eds.), *Advances in the sign language development of deaf children* (pp. 102-134). Oxford University Press.

Schick, B., Williams, K., & Kupermintz, H. (2006). Look who's being left behind: Educational interpreters and access to education for deaf and hard-of-hearing students. *Journal of Deaf Studies and Deaf Education,* 11, 3–20. https://www.jstor.org/stable/42658789

Schlehofer, D. A., & Tyler, I. J. (2016). Errors in second language learners' production of phonological contrasts in American Sign Language. *International Journal of Language and Linguistics, 3*(2), 30-38.

Sidnell, J. (2006). Coordinating gesture, talk, and gaze in reenactments. *Research on Language & Social Interaction, 39*(4), 377-409. https://doi.org/10.1207/s15327973rlsi3904_2

Slobin, D. I., Hoiting, N., Kuntze, M., Lindert, R., Weinberg, A., Pyers, J., Anthony, M., Biederman, Y., & Thumann, H. (2003). A cognitive/functional perspective on the

acquisition of “classifiers.” In K. Emmorey (Ed.), *Perspectives on classifier constructions in sign languages* (pp. 221-296). Lawrence Erlbaum Associates.

Smith, D., Lentz, E., & Mikos, K. (2008). *Signing Naturally Units 1- 6*. San Diego, CA: Dawn Sign Press.

Stokoe, W. C. (1978). *Sign Language Structure: The First Linguistic Analysis of American Sign Language*. Linstock Press.

Supalla, T. (1986). The classifier system in American Sign Language. In C. Craig (Ed.), *Noun classification and categorization* (pp. 181-214). John Benjamins.

Sutton-Spence, R. (2019). Teaching sign language literature in L2/Ln classrooms. In R. Rosen (Ed.), *The Routledge handbook of sign language pedagogy* (pp. 233-246). Routledge.

Swabey, L., Nicodemus, B., Taylor, M. M., & Gile, D. (2016). Lexical decisions and related cognitive issues in spoken and signed language interpreting. *Interpreting, 18*(1), 34-56. Doi: 10.1075/intp.18.1.02swa

Swaney, M. G., & Smith, D. H. (2017). Perceived gaps and the use of supplemental materials in postsecondary American Sign Language curricula. *Sign Language Studies, 17*(3), 293–321. https://doi.org/10.1353/sls.2017.0007

Taub, S., & Galvan, D. (2001). Patterns of conceptual encoding in ASL motion descriptors. *Sign Language Studies, 1*(2), 175-200. https://www.jstor.org/stable/26204836

Taub, S., Galvan, D., Pinar, P., & Mather, S. (2008). Gesture and ASL L2 acquisition. In R. M. de Quadros (Ed.), *Sign Languages: Spinning and Unraveling the Past, Present, and Future from TISLR9* (pp. 639-651). Petropolis, Brazil: Editora Arara Azul.

Thoryk, R. (2010). A call for improvement: The need for research-based materials in American Sign Language education. *Sign Language Studies, 11*(1), 100-120. https://www.jstor.org/stable/26190855

Thumann, M. (2010). Identifying depiction: Constructed action and constructed dialogue in ASL presentations. In C. B. Roy (Ed.), *Discourse in signed languages* (pp. 46-66). Gallaudet University Press.

Thumann, M. (2010). *Identifying depiction in American Sign Language presentations.* (Unpublished doctoral dissertation). Gallaudet University.

Thumann, M. (2013). Identifying recurring depiction in ASL presentations. *Sign Language Studies, 13*(3), 316–49. https://www.jstor.org/stable/10.2307/26191729

Vygotsky, L. S. (1978). *Mind and society: The development of higher mental processes*. Harvard University Press.

White, J. A. (2014). Cognitive spaces: Expanding participation framework by looking at signed language interpreters' discourse and conceptual blending. *Translation & Interpreting,* 6(1), 144-157. doi: ti.106201.2014.a08

Williams, J., & Newman, S. (2016). Phonological substitution errors in L2 ASL sentence processing by hearing M2L2 learners. *Second Language Research, 32*(3), 347-366. https://doi.org/10.1177/0267658315626211

Yarger, C. C. (2001). Educational interpreting: Understanding the rural experience. *American Annals of the Deaf, 146*(1), 16-30. https://www.jstor.org/stable/44393449