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Do you see what I see?
Qualitative study of perceived accents in Deaf and hearing ASL users

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Abstract: This study explores how accents manifest in Deaf and hearing sign language populations, and how these accents are perceived by both native and second language (L2) American Sign Language (ASL) users. Although accents have been central in spoken language research, accents in sign languages remain a developing field. For signers who know or are exposed to more than one sign language, signing may show evidence of language contact, such as handshape differences (Quinto-Pozos, 2008) and lexical borrowing (Sandler et al., 2020). Another type of accent concerns the stylistic choices and grammatical features observed in hearing populations who learned sign language (modality2/M2) as their L2. Hearing M2L2 signers often show extraneous 'mouthing' during signing (Schönström & Holmström, 2022) and have been argued to lack a cultural frame (McDermid, 2014). The current study extends this work, investigating how signed accents are perceived. Interviews with both Deaf (n=5) and hearing (n=7) signers were conducted and analyzed for qualitative patterns. Both the Deaf and hearing participants were able to identify accent patterns in M1L2 populations, however only the Deaf were able to correlate the patterns to specific language communities. The comments for the M2L2 groups were largely divided by hearing status: the Deaf participants commented more on prosody, direct address, NMMs and cultural frame – the more visual aspects sign language, whereas the hearing participants' comments tended to focus on grammar and syntax.

Keywords: American Sign Language; sign language; accent perception; M2L2 perception

1. Introduction: Prior to William Stokoe's groundbreaking research in the 1960s, sign language was dismissed as a form of gestural pantomime to express basic needs and was perceived as incapable of conveying abstract concepts (Stokoe, 1960; Chamot, 2003). Stokoe's work opened the doors to exploring sign languages across the globe. As travel and global living conditions changed, members of various Deaf[1] communities have come in contact with or learned a new sign language, which has spurred a body of research focusing on this interaction. The goal of the current study is to explore and compare the perception of accents in sign language production from native users of American Sign Language (ASL) within the Deaf community and sign language interpreters who learned ASL as a second language (L2).

The investigation of accents in signed languages has received significantly less attention in the field of linguistics compared to spoken language research. In a twofold approach, this

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[1] Deaf, with a capitalized "D", indicates a member of the cultural community whose primary language is sign language. On the other hand, use of "d" deaf refers to a person's audiological status (National Association of the Deaf). For purposes of this paper, Deaf with the capitalized D will indicate those who use their native sign language as their primary mode of communication.

paper will review a series of related studies that examine how different accents are produced and comprehended by sign language users. The first part will focus on Deaf individuals' productions; specifically, those who use sign language as their first language (L1) and are exposed to or have learned different sign languages or different sign language varieties. This line of study parallels research related to accent in spoken languages by examining the production data for evidence of crosslinguistic influence. The second strand focuses on hearing adults whose L1 is a spoken language and are learning a sign language for the first time. This situation involves a change in modality, where the spoken language is in one modality (referred to as M1), and their L2 is in a second modality (M2).

Accents are a result of systematic interference of the phonemic inventory from a speaker's L1 into their L2 (Bardovi-Harlig & Sprouse, 2018; Marshall et al., 2020; Quinto-Pozos, 2008). Typically, sign language phonetic parameters are grouped into the categories handshape, palm orientation, location, movement, and non-manual markers (NMM), of which each parameter has several elements. NMMs are non-affective facial expressions that act as prosodic and grammatical markers. An accent is said to arise when the phonemes and phonetic rules governing those phonemes (i.e., phonotactics) from the L1 is applied to the L2, which is evidenced in both spoken and signed languages (Dawson & Phelan, 2016).

During language contact, some signs, or phonemes within the sign, are articulated by a combination of elements from the signer's L1 and L2 (e.g., Quinto-Pozos, 2008). In these cases, the sign retains its meaning but is perceived as being produced with an accent. This would be analogous to a native German speaker replacing the [σ] sound ("th" sound, as in *this*) with a [z]. Although part of the sound of the word changed, the intended meaning is still understood by the addressee.

Now that we have established some initial terminology regarding accents in sign language, this paper will examine how these accents are expressed in by both M1L2 and M2L2 sign language users. This is done within the theoretical framework of a social dialect within the interpreting community, as discussed by McDermid (2014), which inspired this study.

2. Literature review: Several studies have documented similar types of phonetic interference when the L1 and L2 remained within the same modality. Within this line of research, the handshape parameter is most often examined, followed by mouthing. Mouthing uses the whispered or unvoiced spoken word that matches the sign being produced; however, it is not a component of the phonetic parameters in sign languages. This will be explored further below.

2.1 HANDSHAPE: Quinto-Pozos (2008) focused on interference between ASL and Lengua de Señas Mexicana (LSM) , two mutually unintelligible languages, within the Deaf communities in two border towns in Texas. In his study, the participants were fluent in either ASL or LSM (but had some basic communication skills in the other language), or fully bilingual in both sign languages. Videotaped interviews and group conversations revealed articulatory differences in sign production, particularly regarding handshape, NMMs, and mouthing. For example, the handshape for the letter "F" was observed to be similar in ASL and LSM with two noted exceptions: the point of contact with the pointer and thumb (the primary articulators of the sign, referred to as the selected fingers); and the spread of the open fingers (see Figure 1). In ASL, the pointer and thumb contact at the fingertips, and the non-selected fingers are open and spread apart. In LSM, the thumb touches the outside of the index-finger, and the non-selected fingers are closer together. Interference between the languages was exhibited in different ways; the ASL

handshape would be used while signing LSM or vice-versa, or the handshape would be produced as a mixture of both sign languages (i.e., the point of contact would be from LSM, but the spread would be from ASL).

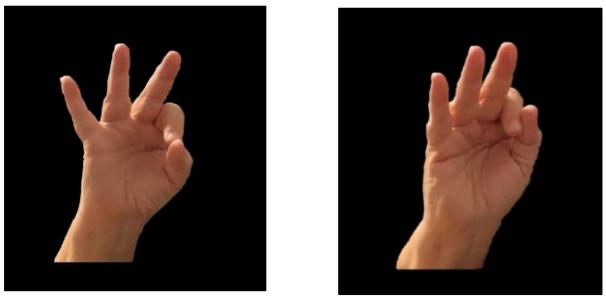

Figure 1. The letter "F" in ASL (left) and LSM (right).

Similar types of interference were observed by Schönström and Holmström (2022). Their study compared two groups of L2 Swedish sign language (Svenskt Tackenspråk, "STS") learners to Deaf participants who use STS as their L1. The L2 groups consisted of nine Deaf refugees fluent in the sign language from their native country (M1L2 group), and a cohort of 15 hearing adult L1 Swedish speakers (M2L2 group). Within the M1L2 group, handshape transfers were observed, meaning handshape elements from the L1 were used in L2 productions. However, this was the least common type of interference, whereas depicting signs was the most common. One participant used a handshape from Russian sign language while producing the STS sign for WINDOW. Other handshapes were carried over from the native sign language while producing depicting signs. Depicting signs are highly iconic, meaning they are representative of the movement or structure of the object being discussed, and are commonly found among all sign languages. This kind of transfer was unique to the M1L2 group, since the M2L2 group did not have knowledge of other signed languages.

2.2 MOUTHING: Mouthing is not the same as NMMs, and typically serves a different function. Mouthing is often a reduced form of the equivalent word from the surrounding spoken language, and in some cases has become lexicalized, thereby making it a necessary part of the sign. It is a common feature found with contact between spoken and sign languages (Quinto-Pozos, 2008), and has been categorized as a partial lexical transfer from the L1 (Schönström and Holmström, 2022).

Both Quinto-Pozos (2008) and Schönström and Holmström (2022) noted examples of participants mouthing in their L1 while signing in their L2. For instance, Quinto-Pozo detected one participant who mouthed *igual* (Spanish word meaning *same* or *equal*) while using the ASL sign SAME. Schönström and Holmström observed a similar phenomenon, where a participant would use the mouthing of their native spoken language with an STS sign. Often this happened when the target sign's mouthing was lexicalized. The Swedish study also found that M2L2 participants tended to use full mouthing, rather than reduced mouthing found in the M1L2 and L1 STS groups, and applied it more frequently. Hearing signers relied on their knowledge of spoken Swedish and seemed to correlate the spoken words with the sign production. In all these cases, mouthing exhibited some carryover from the L1 into the L2 but was exhibited differently between the Deaf and hearing groups. The hearing group altered the manner (i.e., full rather than reduced mouthing) and frequency, and seems to correlate to the switch in modality.

2.3 LEXICAL INTERFERENCE: Lexical interference involves a word or sign substitution, often from the L1 into the L2. Deaf signing L2 participants tested across various studies have produced evidence of lexical interference stemming from their L1, or partial lexical transfer, as noted with the mouthing in the above section. Yet, some participants have provided evidence of lexical transfers that were not always related to the participant's L1 (e.g., Schönström & Holmström, 2022). For instance, one participant used the sign BAR from what looked like international sign language[2], and another used the sign BUILDING, presumed to be from ASL. Both international sign language and ASL act as a lingua franca in certain contexts. It was noted that some of the lexical signs that were substituted contained depictive characteristics and were highly iconic (i.e., recognizable as the item being described), and therefore may contain some universal features found in many sign languages. Schönström and Holmström noted that the M1L2 group has cultural connections to the Swedish Deaf community, more so than the M2L2 group, which is just starting to develop those connections, as well as access to international meetings between Deaf people. These factors allow for greater potential for language contact, and as a result, determining whether the origin of the sign is from the participant's L1 or from some other influence was difficult.

Multiple studies have provided evidence of lexical interference in sign language production. One common theme that emerged was that lexical interference exhibited by hearing M2L2 participants differed from Deaf M1L2 groups (e.g., Casey et al., 2012; Schönström & Holmström, 2022; Weisberg et al., 2020). In contrast, M1L2 groups substituted a sign from their L1 into the L2, the M2 participants often relied on fingerspelling. The cross-modality lexical interference is unique in that it uses the phonetic parameters of the L2 to convey the corresponding word from the L1.

2.4. OTHER CONTRIBUTORS TO PERCEIVED ACCENT: NMMs in sign language, which are similar in some respects to vocal inflection, can also be responsible for a perceived accent. For instance, LSM uses a backward head-tilt for both yes-no and content questions, whereas ASL uses raised eyebrows (Quinto-Pozos, 2008). Quinto-Pozos noted NMM interference, similar to handshape interference, can show up as a mixing of the elements. In one case, a participant signed a yes/no question in ASL, which should have elicited raised eyebrows for the NMM, but instead used a backward head tilt, which is the NMM used for yes/no questions in LSM.

Additional research has looked at other aspects of sign language phonology, such as movement, location, and prosody as contributing to accent.[3] To summarize, there are many elements to sign language production that can identify signers as having an accent. These include alterations to some of those elements, such as parts of a sign parameter, the usage of a specific word, or the manner in which the message is conveyed (i.e., prosody). Certain features have been found to be common within the same modality, such as phonetic or lexical substitution, which seems to hold true for both spoken and signed languages. Mouthing substitution, which is considered partial lexical substitution, is only found within sign languages, since it is impossible to produce a spoken word in two languages at the same time. When the modality of the language

[2] International sign language is a type of contact sign language that is used as a lingua franca for international Deaf events. It is sometimes referred to as *Gestuno.*

[3] Brief examples can be found in a Gallaudet University Linguistics Department video posted in 2017, narrated by Julie Hochgesang: https://www.youtube.com/watch?v=Gli3akhYOSo

changes, accents can reveal themselves differently, through (partial) lexical substitutions and prosodic variation.

2.5. HEARING ACCENT IN SIGN LANGUAGE PRODUCTION: A related line of research takes a social dialect framework, in which language variation is analyzed based on social factors. In 2014, McDermid explored elicited sign productions of M2L2 signers, probing how their production may differ from L1 ASL signers. This framework is relevant because although M2L2 learners are often from diverse backgrounds and cultures, they share a common linguistic history with respect to how they learned their L2 through common classroom curricula. Therefore, M2L2 learners' production also shares common features.

McDermid (2014) tested two cohorts of M2L2 ASL interpreters: 7 novice interpreters, who had 5-7 years of signing experience, and 5 expert interpreters who were nationally certified with over 20 years of work experience. In the study, each participant was filmed while interpreting the same short story from English into ASL. Each of the interpretations was reviewed and rated by three culturally Deaf native signers. As a whole, the Deaf raters noted that M2L2 signers did not follow cultural norms of the Deaf community. For example, the signers did not provide ethnic information of the people in the story, a relevant feature that would be commonly included by native Deaf signers. Additionally, M2L2 participants did not use depictions, facial affect, and NMMs adequately or at all. Lastly, some of the participants from both the novice and expert groups used signs that more closely followed the English gloss rather than the ASL sign used more commonly in the Deaf community. Interestingly, the Deaf raters rated participants lower on their overall signing abilities compared to participants' self-assessed abilities. One hypothesis is that this discrepancy is due to cultural framing: Deaf raters may have compared participants to native Deaf signers, whereas the participants compared themselves to other hearing M2L2 signers. This may lend further support to the idea that the M2L2 signers utilize a social or *hearing dialect*, a distinct language variety from Deaf native sign language.

4. Current study: Given what we have learned about accents and how they manifest in sign language, the goal of the current study is to investigate how sign language accents are perceived. This project takes a qualitative approach to investigate ASL accents from the perspective of native signers and M2L2 sign language users (specifically, interpreters). Deaf participants' perceptions of accents produced by other M1L2 sign language users (M1) and interpreters (M2) were compared to interpreters' perceptions of accents produced by M1 and M2 ASL users.

Two hypotheses were investigated in this study. The first focuses on the most salient parts of the accents, with the hypothesis that Deaf and interpreter participants will concur on how the accents are expressed by M1 sign language users and M2 sign language users. The reasoning for this is that native language users may readily recognize when the language is produced differently, whereas non-native speakers may have more difficulty assessing the language production (Buckingham, 2015; Scales et al., 2006). Additionally, seasoned interpreters interact with diverse populations and can recognize some of these differences. The second hypothesis provides an alternative proposal, that interpreters may miss some of the more subtle accent features within their own social dialect. Specifically, interpreters may miss alterations to NMM, depicting signs, and prosody differences (i.e., patterns of stress and intonation) within their own group (M2L2). These are the features that seem to be more difficult for the M2 sign language users to acquire since these features are vastly different from spoken language usage and behaviors (Frederiksen & Mayberry, 2019).

5. Methods

5.1 PARTICIPANTS: Participants were recruited through social media and convenience sampling. A recruitment email was sent to local organizations of the Deaf community and interpreter organizations. Additionally, a message and ASL video were posted on social media. Some participants were invited via word of mouth and personal connections.

In order to qualify for this study, participants needed to have lived in the New York/New Jersey metropolitan area for a significant portion of their life and self-reported to be fluent in ASL. This was done in order to limit regional dialect differences in the participants. Interpreter participants were required to be working in the field a minimum of 5 years.

A total of 33 people responded to an initial eligibility survey, with 20 deemed eligible to participate in the study. Each of the eligible participants were sent a background questionnaire, then directed to schedule their interview. Of the eligible candidates, five did not complete the background questionnaire. Another eligible participant completed the survey but never scheduled the interview, and one voluntarily withdrew from the study.

The final set of participants were 6 interpreters, 5 Deaf individuals, and 2 CODAs. CODA is an acronym for Child(ren) of Deaf Adults. Most CODAs are native signers of ASL. Although technically CODAs can be hearing or Deaf, for this study the term applies to hearing children born to Deaf parents, and who learned ASL as their first language. These participants therefore bridge both the Deaf and hearing worlds; often, they are put in the unique position of interpreting for Deaf family members from a very young age (Jannusch, 2023).

All participants were female, with the exception of 1 Deaf participant (male) and all identified themselves as White/Caucasian. The mean age of the participants was 60.25. As shown in Table 1, age varied across groups, with Deaf participants older on average than the other two groups. Age of acquisition (AoA) also varied across groups. Both Deaf and interpreter participants had a wide AoA range, but Deaf participants learned ASL at a younger age than the interpreters. The two Deaf participants who started learning ASL at ages 3 and 4, respectively, had no prior language exposure, whereas the remaining three participants were taught with the oral method (spoken language and lip-reading was prioritized while avoiding the use of sign language) (Berke, 2023) before they started learning ASL. Although this is a relatively small sample size compared to the larger Deaf community, these stories are representative of a common experience (Marks, 2020; National Deaf Life Museum, 2022).

	Age at Time of Testing			**Age of ASL Acquisition**		
	Mean	*SD*	*Range*	*Mean*	*SD*	*Range*
Deaf (n=5)	71.8	13.8	57-92	8.6	5.3	3-15
CODA (n=2)	56	15.6	45-57	0	0	0
Interpreters (n=6)	50.4	12.2	29-59	19.6	4.9	15-29

Table 1. Participant Demographic Information

5.2 PROCEDURE: Prior to conducting interviews, questions were piloted on an interpreter colleague; his feedback was incorporated into the final version of the interview questions that

were used for this study[4]. Interviews took place over Zoom and the average length of time per interview was approximately 45 minutes. The interviews were then transcribed by the first author and anonymized to ensure confidentiality of the participants. For the analysis, participant responses from the transcripts were grouped by interview question. Responses were then analyzed for themes and patterns, which were viewed holistically as well as within each group.

6. Results: The interview questions were separated into two categories: perceived accents within the M1 population vs. M2 population. Unlike the studies mentioned previously which focused on analyzing elicited signed narrations (Casey, 2012; McDermid, 2014; Schönström & Holmström, 2022) or first-hand observations of accent production during an interview (Quinto-Pozos, 2008), the participants in the current study were asked to recall what they noticed when they have encountered an L2 ASL user, first when it is within the same modality (e.g., a Deaf person's second sign language), and subsequently within a different modality (e.g., the hearing interpreters used in this study). The results were reviewed by comparing M1 and M2 accent features, and also correlated the Deaf and interpreter responses within each group.

6.1 M1 ACCENT FEATURES. Of the five Deaf participants, three commented that the M1s they have encountered employed more gestures and body language compared to M2 signers. It is interesting to note that the remaining participants who did not note M1 accent features were the ones who learned ASL the latest. However, we acknowledge this gap could be due to other reasons such as limited exposure to M1 populations, rather than AoA. Conversely, only one interpreter mentioned an increased use of gestures within the M1 population. That interpreter also primarily learned ASL from being immersed within the Deaf community, rather than through an interpreter training program.

Some of the Deaf participants and interpreters have had extensive exposure to M1 communities and have noticed patterns within communities from certain countries. For instance, they noted that those from primarily Spanish speaking countries tend to be more gestural and often will mouth lexical items in Spanish while signing in ASL. Additionally, those from Poland and Russia employed more mouthing while signing compared to some other M1 populations, which was said to be linked to an emphasis on an education focused on the oral method. Lastly, several participants noted the European M1L2 populations employed lexical substitutions from international sign language rather than their L1. The most common international sign mentioned was the sign for PEOPLE (see Figure 2).

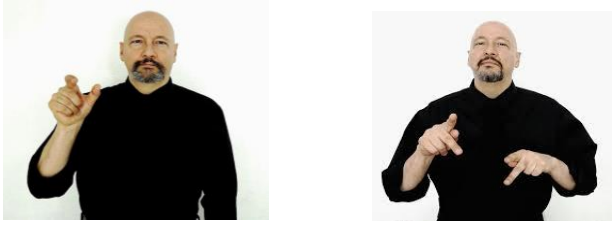

Figure 2: Dr. William Vicars demonstrating both international sign and the ASL sign (respectively) for PEOPLE. These signs differ in handshape and movement (Vicars, 1997)

Half of the interpreters recognized that the language being produced was influenced by the signer's L1, but they could not identify community patterns, with statements such as, "*I can*

[4] Study materials, including the eligibility survey, background questionnaire, and interview questions, can be found on https://osf.io/6rmwa/

recognize accent, but not its origin." Similarly, a CODA stated, "*I can't discern within Latin countries, like if somebody's Honduran or Costa Rican, but clearly, I can identify Eastern Bloc countries [signers] from Latin countries [signers]*." In contrast to the interpreter responses, many of the Deaf participants and CODAs were able to observe patterns from certain L1 communities. This is analogous to a native English speaker being able to recognize if an accent is from a French speaking community or a Spanish speaking community, whereas an L2 speaker may recognize the two accents differ, but not be able to identify the accent origin (Scales et al., 2006).

With respect to identifying the most salient feature(s) of the accents, most of the participants (8 out of 13) noted lexical interference, followed by handshape (7 out of 13), and mouthing in the L1 (5 out of 13). These results are consistent with previous studies (e.g., Quinto-Pozos, 2008; Schönström & Holmström, 2022). The biggest difference found between the Deaf and interpreter participants was within this category. Specifically, Deaf participants most often mentioned an increase in gestures and body language, whereas interpreter participants most often mentioned mouthing differences and lexical substitutions.

6.2 M2 ACCENT FEATURES. There were three main questions asked about M2 signers. The first question centered on the differences in sign production between the identity groups: Deaf, CODA, and hearing. The second question examined what changes are noticed as a novice interpreter (initial 5 years in the field) gains experience and fluency. The last question explored the accent features that are retained by expert interpreters (over 20 years' experience).

6.2.1 SIGN PRODUCTION DIFFERENCES BETWEEN IDENTITY GROUPS. The overall consensus was that hearing signers are typically easier to identify as "not Deaf," although not everyone was able to verbalize how or why they recognized that. One Deaf participant mentioned it is harder to tell if the interpreter is hearing when they are more skilled, and sometimes they are unable to distinguish interpreters and Deaf signers altogether.

Conversely, all of the participants mentioned that CODAs are much harder to distinguish from Deaf signers. Two Interpreters and one CODA acknowledged the wide disparity of sign abilities within the larger deaf community, whether influenced by the "Oral Movement" (referencing the global push for deaf education to employ the oral method) (Marks, 2020; National Deaf Life Museum, 2022) or from causes that affect a person's hearing later in life. The overarching theme that emerged from this question can be summed up by an interpreter's comment:

> *"I can tell whether or not somebody is a native ASL user … but I don't know that I can tell you if they're hearing or not, because they might be a CODA who grew up with it as their first language."*

Since the participants overwhelmingly agreed that CODAs' ASL is more aligned with the Deaf population, there were no accent features within that group to explore. One Interpreter commented that sometimes she can identify a CODA because some of NMMs that are slightly different, however this was not echoed by any of the other participants.

The most mentioned salient features that differentiate M2 group from the Deaf and CODA groups were grammar, NMMs, prosody, and sign production (see Figure 3). The Deaf population's ASL was used as the benchmark for M2 signers to strive for, therefore, all the features listed below are where the M2 signers are perceived to have missed the mark.

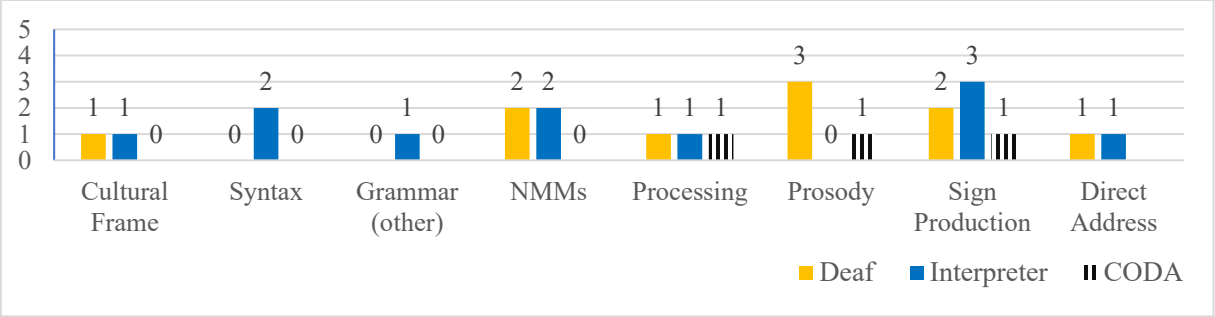

Figure 3. Perceived M2 productions differences from Deaf and CODA signers.

Interpreters were the only group that commented on any of the grammatical features, with the exception of direct address. This is a visual aspect of the grammar, often incorporating different facial expressions and body postures to indicate another person is talking. Relatedly, only the Deaf and CODA participants commented on the M2's prosody. However, there was agreement among the groups related to the use of NMMs and the 'crispness' of the M2's sign production.

The most cited observation in M2 signers that distinguishes them from the Deaf and CODA populations was their grammar, such that 7 out of 13 participants mentioned some grammatical aspect. This category included syntax (2), most often mentioning that the M2s incorrectly use ASL with English sentence structure, depiction (1), fingerspelling (1), and the inappropriate use of space (1). The use of direct address, which can include role shifts, was mentioned by 1 Deaf participant and 1 interpreter. Direct address is a grammatical device used in engaging the other person in the conversation through body positioning and eye-gaze, whereas role shifts are shifts in the body or head and are used to show a third person's comments or reactions. Since ASL is a pro-drop language, the signer uses direct address as a means for third person pronominalization and relaying their part firsthand (Quinto-Pozos et al., 2019). The M2 signers' difficulty with direct address and role shifts is not surprising since English is not a pro-drop language and the overall M2 production seems to be heavily influenced by the structure of their spoken language.

NMMs were cited four times and were evenly split between Deaf and interpreter participants. The NMMs specifically mentioned were head tilts, facial grammar, and body shifts. These are all non-manual aspects of the grammar and are typically more difficult for M2s to acquire. As one CODA stated about M2s,

> *"I think there's a stiffness. Like, that stiff upper lip that we [hearing people] culturally have to maintain where Deaf people's faces are always, like moving and dirty and like (making some faces and grimaces) doing strange things."*

Facial movements may be uncomfortable for M2s because it is not part of their culture and language. Although NMMs could reasonably be categorized as part of ASL grammar, they are also considered one of the sign parameters, and for this reason were analyzed separately.

Prosody received four references: 3 Deaf participants and 1 CODA participant. This included stiff language production, awkward or uncomfortable body position, discourse markers, projection and demeanor. Two Deaf participants mentioned the feeling of seeing a "lack of

nativeness" in the M2's signing. One CODA likened "nativeness" to wearing the language like a comfortable coat, but the coat doesn't quite fit the M2s. As a result, the shoulders raise and the elbows come up and away from the body, all in an attempt to make the language "fit better."

Lastly, the focus shifted to the actual crispness of the sign production. There were six comments related to this topic, which included the articulation and clarity of the signs, as well as applying all the proper parameters to each sign. Half of the comments were made by interpreters, with the remaining made by 2 Deaf and 1 CODA participants.

6.2.2 NOVICE SIGN PRODUCTION IN COMPARISON TO ADVANCED SIGNERS. Sign production tends to change as one progress from novice to expert interpreters; thus, one interview question addressed the production changes an M2 may undergo as they gain experience. As expected, there were many comments across the categories and a fair amount of agreement among participants with regard to novice interpreters, as they have yet to master certain aspects of the language. Some of the comments mentioned the lack of smoothness in the flow of the signs.

Both prosody and sign production had the highest total number of comments (5 each) with the same distribution (2 Deaf and 3 interpreter). The next highest was "processing", which only the interpreter participants mentioned. Processing refers to the internal mental process of translating into an L2. In this instance, the internal mechanism becomes externalized through non-grammatical facial expressions, long gaps in language production and incorrect lexical items. It is important to note that the interview questions were not specifically asking about novice interpreters in an interpreting setting, but rather those production interferences that are noticed when chatting with them. The comments reflected limited variety in their vocabulary and a look of frustration while signing. Overall, the sign parameters were not seen as an issue within this group (see Figure 4).

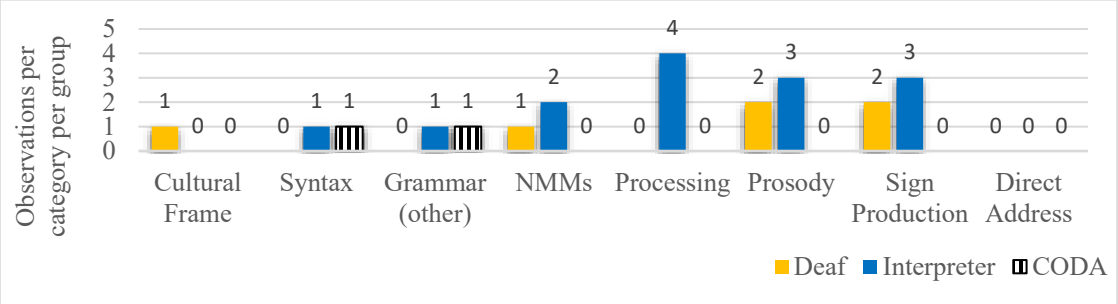

Figure 4. Perceived novice production errors compared to experienced signers

6.2c. HOW ADVANCED M2 SIGNERS DIFFER FROM DEAF SIGNERS. Many of the novice production errors mentioned were described as slowly diminishing over time, yet never fully disappearing. The last interview question asked participants to describe which features they believe M2s display that reveal them as non-native language users despite their years of experience with ASL. The comments from participants were sorted into the following categories: Grammar, NMMs, cultural framing/Deaf perspective, prosody, sign production articulation and direct address. Again, the NMMs were analyzed separately from the manual grammar, which provides a clearer picture of which grammatical aspects may be harder for the M2 population to acquire.

Similar to the first question in this section, the grammar category had the most comments (12) and 75% were made by the interpreters. There were three main subgroups of comments within this category: syntax (2 interpreters, 2 CODAs), Depiction (2 interpreters and 1 CODA), and use of sign space (1 Deaf, and 2 interpreters). Within syntax, all of the responses were related to M2s following English syntax too closely. One interpreter also included the overuse of rhetorical questions, which are typically used to emphasize a point, add clarification, or to engage the listener. Direct address and palm orientation also had one mention each.

As for depicting signs, also known as classifiers, they are ubiquitous in sign language and are used to illustrate an action, size or shape of an object, how that object is used, or to describe what something looks or feels like. Depicting signs received three comments from 2 interpreters and 1 CODA. The comments centered on the M2s using classifiers for objects without identifying what the object is. For instance, the "3-Handshape" turned sideways represents vehicles, but the type of vehicle (car, motorcycle, boat) would need to be identified before using that classifier. The use of sign space also had three comments (2 interpreters, 1 Deaf). The improper use of sign space was commented on both here and with the first question that addressed sign production differences between the identity groups.

With regard to the NNM category, it received responses from 4 Interpreters and 1 CODA. Within the NMMs, the subcategory eye gaze was included. Eye contact (maintaining a line of communication with the other person) and eye gaze (looking at a referent set up in the sign space) is a vital part of communicating in a signed modality. Three interpreters noted this as a feature that would mark an experienced M2 as a non-native signer. Surprisingly none of the Deaf participants had any comments that fell within this category.

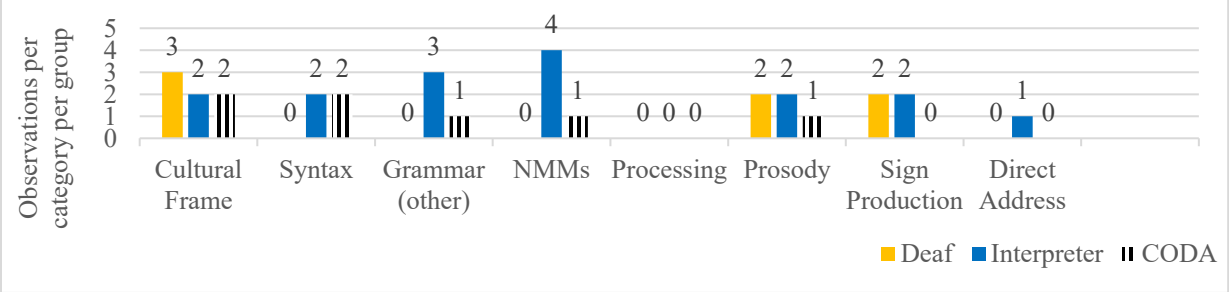

Figure 5. Perceived differences of experienced interpreters' signs from L1 ASL signers

There was some consensus regarding the categories that are affected; however, the interpreter group provided the most comments in each group with the exception of cultural framing, prosody and sign production. Interestingly, McDermid (2014) observed that both the novice and expert interpreters lacked the Deaf perspective (cultural frame) and over-rated their sign production. It should be noted, however, that 2 of the 7 responses regarding the lack of cultural framing within M2 discourse were made by interpreters (see Figure 5).

Comments regarding the lack of facial expressions and misuse or underuse of NMMs nearly doubled from novice interpreters to experienced interpreters, as did the grammar. This increase was surprising, as those areas were expected to stay the same, if not improve. One theory, which lends support to McDermid's (2014) social dialect theory, is that the interpreters compared novices to themselves, whereas in this question they were comparing themselves to

Deaf L1 signers. Therefore, the increase in the number of comments regarding NMMs and facial expressions were due to a shift in their frame of reference rather than an increase in production errors. Further studies would be needed to see if this theory holds true.

Two additional features worth highlighting were breaking eye contact (3 interpreters) and responding to sounds (2 interpreters and 1 CODA). Breaking eye contact is considered rude in the Deaf community, as it displays disinterest and breaks the trust with the person with whom you are communicating. This is an important part of Deaf culture and something expected to occur more within novice interpreters rather than experienced interpreters. Environmental sounds can elicit a response that causes the interpreter to break eye-contact and take one's attention off the conversation. However, there have been occasions where a sudden loud noise would identify all the hearing people in the room as they jump from a startle response; this may have been the thought process that informed the latter comments.

An interesting pattern emerged between the Deaf and interpreter perspectives. The Deaf participants' comments primarily fell into the categories that are more cultural and visual facets of the language, such as prosody, cultural framing, and sign production/articulation. The prosody category included comments relating to the flow and usage of the language. For instance, one participant noted, "*Sometimes interpreters refuse to change with the language...*", whereas another stated, "*It depends on their demeanor and their projection, whether their signs are smooth or choppy*." A couple of the interpreters noted that some M2 signers have difficulty with discourse markers and direct address. The "cultural framing" refers to including the elements unique to ASL. For instance, ASL is considered a high context language. Therefore, it requires more details, descriptions and context within the discourse than English, a low context language. Two of the five Deaf participants explicitly mentioned the M2s lacking context and missing the Deaf perspective. Not surprisingly, both CODAs also commented that M2s often do not incorporate the "Deaf way" while signing, whereas only one interpreter mentioned the need for contextualization in ASL discourse. Almost all the participants at some point in the interview mentioned that it is imperative for the M2 to be involved with the Deaf community to continue to foster and hone their language skills.

7. Discussion. The language experiences for both the Deaf participants and the M2L2 group shed light on how accents are perceived in sign language. Despite the small sample size of the current study, several patterns emerged that were consistent with other studies (e.g., Quinto-Pozos, 2008; Schönström & Holmström, 2022). The first hypothesis explored concurrence among the three identity groups interviewed regarding the most salient aspects of accent manifestation in the M1 and M2 populations. Regarding the M1 populations, there was wide agreement as to which aspects were most salient, and mixed results for some of the other categories mentioned. The Deaf and interpreter groups agreed that *lexical substitutions* and L1 influence on *handshape* were the most salient aspects of the M1 accent. Additionally, there was wide agreement that the L1 influence on ASL syntax is not an issue for the M1 group. Many sign languages have a gestural component, which is helpful when moving from one visual modality to another; gestures become a common ground for finding understanding. This was found to be prevalent within the M1 groups from predominantly Spanish-speaking countries.

The Deaf participants' comments contrasted with the interpreters'; visual aspects of the language versus the structural components. The participants provided their perspective of the most salient accent features, therefore highlighting those aspects that they most notice in the communication process. This perspective lends further credence to the idea that M2 signers are

using a different cultural frame than members of the Deaf community. For this reason, this study may have benefitted from a Deaf interviewer, who could have elicited more nuanced responses from the Deaf participants. Additionally, having a Deaf interviewer could eliminate potential barriers a Deaf participant may feel when speaking to an M2 language user about M2's language use.

As mentioned earlier, the Oral Movement had a major impact on Deaf education and on ASL in general. The results of which have left a wide range of sign language usage within the Deaf community. Many Deaf people regularly accommodate their signing to match the person with whom they are communicating, as long as the message is understood. This comment from a Deaf participant sums up how they converse with non-native signers, *"[w]hen I am signing with someone, I am not paying attention to the signs. I am paying attention to what we're talking about and the story itself. I understand what they are saying."* This sentiment was echoed by 2 other Deaf participants. Therefore, it is not surprising that the Deaf participants did not comment on the English syntax of the M2 users since they encounter it fairly regularly with some Deaf members within their community, as well as interpreters.

In general, some of the Deaf participants seemed to have more difficulty than interpreters describing the features of their language that are used differently by M2 users. They were able to recognize that a difference exists, but unable to pinpoint where or why. For instance, when one Deaf participant was asked what they notice about an M2 signer that identified them as hearing, the participant simply responded, "*Their signing is different*." This lack of metalinguistic awareness certainly can be related to the general oppression of ASL, as many Deaf people still do not have the privilege to learn about their own language. Several of the Deaf participants noted that they did not pay a lot of attention to the signing differences and accents, but rather they would just accept those differences and move on, focusing on successful communication rather than looking at the small differences in how that communication occurred.

8. Future studies: Although this pilot study tested a small population of older, white signers, several patterns that were consistent with previous studies. Based on these findings, future studies may find several related questions worth investigating. The first concerns whether these patterns would emerge with a larger and more representative sample. Primarily, we point researchers toward investigating the role of age, educational background (e.g., mainstream vs. Deaf school), motivation for learning ASL, and time spent in the Deaf community.

Since the cultural frame was a major theme that emerged regarding the M2 social dialect, it would be interesting to explore if this is prevalent among other L2 groups once fluency is acquired or if this is unique due to a change in modality. One study suggests difficulty acquiring the cultural frame may occur in other L1-L2 combinations regardless of modality (Szerszunowicz, 2024).

The last area stems from the discussion of language oppression (Marks, 2020; National Deaf Life Museum, 2022). Since the passage of PL 94-142 (Education for All Handicapped Children) and Section 504 of the Rehabilitation Act (Free Appropriate Public Education) Deaf education has been shifted away from Deaf residential schools into mainstreamed classrooms (Potter, 2018; Silvestri & Hartman, 2022). The Deaf schools were an accessible learning and signing environment that provided a strong cultural bond. Although there are still Deaf schools, often non-Deaf parents and school districts opt to educate their child in their local school. Commonly, these children are the only Deaf students in the school and have M2 language users

as interpreters in the classes with them. Sometimes several local districts in a region will support a Deaf program in one of the schools to provide a clustered mainstream program for several Deaf students from that area (Potter, 2018; Silvestri & Hartman, 2022). As a result, M2 interpreters become the only ASL input for many of the Deaf students in these mainstreamed environments. Therefore, it would be important to investigate to what extent the M2 interpreters affect the evolution of ASL and its impact on the Deaf community.

9. Conclusions: This pilot study investigated how accents were perceived in sign languages, with a focus on Deaf, CODA, and interpreter perspectives. The Deaf and interpreter participants found similar accent features in Deaf populations who learned ASL as a second sign language and showed mixed agreement within those who learned ASL in a second modality (M2). According to the Deaf participants, the main components of the M2 social dialect are primarily found in the M2's prosody and sign production, and felt M2 signers often do not include the Deaf perspective or frame of reference. Although there was some concordance between the Deaf and interpreter participants, the interpreters focused primarily on the grammatical aspects in the sign production. As a result, potentially these accent or dialect features in the M2 community may influence the trajectory of ASL, especially when M2L2 interpreters become language models for mainstreamed elementary children. This may be an important factor when placing an interpreter within a mainstreamed environment, especially if there is no Deaf role model available in that setting.

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