Northeastern University
Center for Atypical Language Interpreting

Language Analysis Team Meeting Report

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Introduction

In 2015, a report entitled *Preparing Interpreters for Tomorrow: Report on a Study of Emerging Trends in Interpreting and Implications for Interpreter Education* was prepared by the National Interpreter Education Center (NIEC) at Northeastern University at the request of the Department of Education, Rehabilitation Services Administration (RSA). In discussing the unprecedented changes that have occurred within the United States in the past twenty years, the report states the following:

> *Minority and immigrant populations have increased at rapid rates, and consequently, so have the number of households with English as a second language. d/Deaf individuals within these populations have complex and diverse communication needs that reflect their culture, language, education, and socioeconomic background. Recent years have also seen a significant increase in the number of newborns and children that are deaf and have co-occurring conditions, and, increasingly, the older d/Deaf population is experiencing changed abilities and communication needs as a natural consequence of aging. Adding to the complex mosaic of community needs are d/Deaf individuals pursuing advanced study and professional positions involving highly technical and nuanced discourse. The confluence of this diverse array of linguistic, cultural, and situational needs will challenge the interpreting workforce – and interpreter education – for many years to come* (Cogen and Cokely, p. 1, 2015).

The report goes on to state that an increasing number of d/Deaf individuals have idiosyncratic and dysfluent language use that require superior interpreting competency within the interpreting workforce (p. 7). The need for more specialized knowledge and competence exists, and there are limited pathways available to prepare working interpreters to address these special needs.

In response to the trends identified in the report, RSA allotted funding for a project to begin responding to these unique needs. Northeastern University's American Sign Language Program was awarded a U.S. Department of Education Rehabilitation Services Administration grant to establish the Center for Atypical Language Interpreting (CALI). It is a five-year project that will run from January 2017-December 2021. The project is focused on addressing the demand for interpreters with specialized skills to serve d/Deaf and DeafBlind persons with atypical American Sign Language (ASL). For the purpose of this report, atypical language is defined as use of ASL that is deviant from the established and recognized norms used by competent and fluent ASL users. The deviation can be observed in any combination of the following:

- the form of language (phonologic, morphologic, and syntactic forms),
- the content of language (semantic system), and/or
- the function of language in communication (pragmatic system).

One of the main activities of the first year of the grant was recording samples of atypical ASL use by d/Deaf and DeafBlind individuals in three states around the country—Massachusetts, New York, and California. To assist with reviewing and assessing the samples collected, a team of experts in linguistics, interpreting, and Deaf Education was assembled—comprised of MJ Bienvenu, Dennis Cokely, Christopher Kaftan, Daniel Langholtz, and Anna Witter-Merithew. This Language Analysis Team (LAT) met face-to-face August 7-9, 2017 at Northeastern University. This document is the report of that meeting and the key findings.

The purpose of the review and assessment of recorded samples was for the LAT to identify and describe examples of atypical ASL language use towards the goal of creating a matrix of indicants and descriptors. This effort occurred simultaneously with the development of an annotated bibliography of print and video media dealing with atypical language, language dysfluency, and language deprivation.

The findings of the LAT, along with other research that is conducted or available, will be used to create a Program of Study that will be offered to working interpreters beginning in 2018. The program will include four online modules and an onsite experiential learning lab, followed by a 40-hour supervised induction. The induction will be implemented in collaboration with selected interpreter referral agencies across the United States. The overall objective is to advance the skills and decision-making abilities of working interpreters who provide services to d/Deaf and DeafBlind persons whose language is atypical.

Language Analysis Team Process

The LAT has been engaged with the project in several ways. To date, the team has assisted with reviewing stimulus material used in collecting language samples, conducting individual analysis of thirty of the fifty-one samples collected, and participating in a group meeting to review findings.

On the first analysis form, the LAT rated six (6) language features based on one of four (4) possible ratings for each stimulus presented. As well, the rating form allowed for general comments to be provided. The features and possible ratings are illustrated in the following matrix.

Language Feature	Possible Ratings			
Comprehensibility	Almost totally unintelligible response without significant background information	Mostly unintelligible response without significant background information	Sporadically intelligible response but much background information still needed	Mostly intelligible response but some background information still needed
Coherence	Almost total lack of logical connections or consistency in response; significant background information needed	Mostly lacking logical connections or consistency in response; significant background information needed	Sporadic logical connections or consistency in response but much background information needed	Mostly consistent logical connections or consistency in response but some background information still needed
Cohesion-creating devices	Almost total lack of cohesion-creating devices or strategies for creating cohesion in response	Mostly lacking any cohesion-creating devices or strategies for creating cohesion in response	Sporadic use of cohesion-creating devices or strategies for creating cohesion in response	Mostly consistent use of cohesion-creating devices or strategies for creating cohesion in response
Prosody	Almost total lack of rhythm, flow and chunking in the response	Mostly lacking rhythm, flow and chunking in the response	Sporadic rhythm, flow and chunking in the response	Mostly consistent rhythm, flow and chunking in the response
Sentence-level integrity	Almost total lack of "typical" ASL sentence structure in the response	Mostly lacking "typical" ASL sentence structure in the response	Sporadic use of "typical" ASL sentence structure in the response	Mostly consistent use of "typical" ASL sentence structure in the response
Overall severity of atypical signing	Extremely severe; impacts all aspects of discourse in the response	Severe; impacts many aspects of discourse in the response	Mildly severe; impacts several aspects of discourse in the response	Marginally severe; impacts very few aspects of discourse in the response

The form was completed online and submitted for synthesis to the Principal Investigator, Dr. Dennis Cokely. The form for rating the samples from DeafBlind individuals was completed according to the

same ratings, but it was submitted via a separate link from the other samples because stimulus materials differed.

The second form, focusing on specific examples of atypicality, addressed eight (8) language features. The specific timecode for where the example occurred within the recording was recorded.

- Sentence structure
- Non-manual behaviors
- Space
- Classifiers/depiction
- Aspect/modulation
- Prosody
- Lexical semantics
- Lexical production

These analysis and rating activities served as the LAT's preparation for the face-to-face meeting. The next section of this report will focus on the process and structure of the August 7-9, 2017 meeting.

Face-to-Face Meeting

On the morning of the first day of the meeting, Dr. Cokely, Principal Investigator, provided an overview of the project, inclusive of an explanation of the five-year plan.

- The primary focus of Y1 is the development of four (4) online modules—an introduction to atypical language, an overview of the populations who typically reflect atypical ASL use, strategies for working with d/Deaf and DeafBlind individuals who have atypical ASL, and decision-making processes associated with interpreting for this unique consumer base. In addition, Y1 involves the collection of language samples and the analysis of those samples by the LAT.

- Y2 will focus on a pilot implementation of the online modules with 12-15 practitioners, as well as their engagement in the associated onsite experiential lab and community-based supervised induction. Induction activities will involve working with three (3) interpreter referral agencies that have agreed to serve as pilot locations. These agencies have already been identified and are located in New York City, NY, St. Louis, MO, and Charlottesville, VA. Progress will be tracked and results used to make any revisions to the modules and/or other aspects of the Program of Study and induction process.

- In Y3-Y5, the online modules will be open to a national audience, and five (5) additional interpreter referral agencies to serve as induction sites will be added each year. Data will be tracked, revisions will be made, and the final products from the project will be widely disseminated.

- Part of the motivation for DOE-RSA to fund this project comes from the findings of the trends report RSA requested the National Interpreter Education Center at Northeastern University to

prepare under the last funding cycle. In that trends report, it was noted that certain populations of d/Deaf and DeafBlind individuals continue to grow, and these populations are likely to continue to contribute to an increase in the number of individuals who have atypical use of ASL. This includes those d/Deaf and DeafBlind individuals who are foreign-born and come to the United States seeking education and/or employment opportunities. Often, these individuals have not been formally educated and do not possess competence in a signed language. As well, the number of d/Deaf and DeafBlind children who are mainstreamed in public schools without exposure to native signers will continue to increase. And with medical advancements decreasing the mortality rate of pre-mature or multi-disabled births, the number of d/Deaf children with one or more disabilities will also increase. These disabilities—such as Cerebral Palsy—will likely impact language use. Similarly, as elderly individuals are living longer, the number of Deaf senior citizens will increase and, with that, possible physical and/or cognitive limitations which will impact signing—such as arthritis, dementia, Alzheimer's, or stroke.

Prior to delving into the recordings and ratings of the language samples, LAT members discussed several observations about the process of preparing for the face-to-face meeting.

- There was discussion of the terms dysfluent and atypical language use. Dysfluent language is a term that is commonly used in the literature from the medical or mental health fields. It was determined by the CALI Project personnel that the term dysfluent was not sufficiently inclusive, since the project is considering a wider range of demographic contributions to language use, including decreased capacity of elderly individuals with arthritis or other types of issues. The project will use the term atypical.

- What constitutes typical ASL use is not necessarily a national standard. Local standards must also be considered. For example, in MA, fluent ASL users incorporate a lot more mouthing of English due to strong oral influence for years. Signers may have brow grammar but not adverb/adjective mouth behavior that is viewed as typical in other communities. This further underscores the need for interpreters to have exposure to a wide range of ASL users in order to gain perspective on what constitutes a typical range of language use.

- The language samples collected for this project encompass a range of individuals. However, the samples are of d/Deaf and DeafBlind individuals who live on either the East or West Coast—there are no individuals represented from the Midwest or Southeast. If funds allow, the project hopes to film additional interviews during Y3 to capture samples from these regions of the United States.

- The work the LAT has been asked to do is challenging because there is no prior work in this area to build on—particularly in the area of interpreter education.

- The LAT would have benefitted from advance training to learn how to use the forms in a consistent way. All team members felt they did not achieve a consistent application of the rating form. As well, the descriptions associated with the ratings did not always apply to what was being observed. For example, the feature of cohesion-creating devices: an individual might use one or

two devices, but not demonstrate a fluent use of a range of devices associated with this feature. The ratings did not address elements of quantity or variation in application of a feature.

Findings

Some recurring patterns were identified—not in every sample, but often enough that they may be predictors of atypical language use. What follows are the patterns that were identified over the course of the three days and through the group review and discussion process. These patterns include attention to language features that are an inherent part of ASL and were anticipated at specific times within the narratives/responses of the signers, but they were omitted or skewed in some way.

- Limited or skewed use of space. Spatial structuring in ASL is an essential and fundamental part of the grammar and structure. The absence of spatial structuring was most apparent in the requests to describe the physical arrangement of things—either within the picture of the furnished living room or in describing their personal living spaces. Several of the signers referenced the stairs in the living room but did not use space to show the typical ascending of the stairs. One signer descended the stairs into the living room. The use of a left to right or right to left orientation was absent, as was the ability to describe space from the POV of the signer. For example, the interviewer would ask the signer to imagine themselves entering their bedroom or kitchen and standing in the doorway and then to explain the layout of the room and objects/furniture within the room. Few of the signers were able to follow through in describing the physical layout of space from this/their perspective.

- Little or no non-manual behaviors. The absence of non-manual markings for both grammar and affect was one of the most prevalent patterns across the samples. Whether describing their recall of a stimulus scenario or describing personal experiences, the lack of NMM was consistent across a significant number of the tapings. In a few instances, an individual might indicate a topic through the use of a raised brow but would not convey any adverbial or adjectival information on the mouth or shifts in topic or speaker through body shifts.

- Lack of referents/pronouns. Three of the stimulus scenarios provided the opportunity to designate pronouns and gender. A number of signers would indicate, through the use of the person classifier, someone entering a room, handing someone flowers, or using a cell phone to text, but they would not specify if it was a male or female. In several instances, this lack of specificity extended to failure to indicate that it was two different individuals entering the room at different times, two individuals engaged in texting, or that there was some shift in activity between individuals. This failure to designate who was doing what also appeared in a number of the personal narratives—who went to the school to speak with the teachers; who told whom the girls would be sent to a special school; who told the signer they could not leave the house? Other examples of the lack of referents occurred in instances where depiction would normally be used in ASL to illustrate constructed action—wiping off a countertop, sweeping the floor, or hanging up clothes. These actions would be signified by use of the sign for 'cleaning.'

- Limited, incorrect, or no use of classifiers. The lack of classifiers was most evident in the requests to describe the physical arrangement of space—such as in the picture of the furnished

living room or in describing their personal living spaces. Classifiers to denote furniture and their locations were rarely used. Most often, instead, the signer would use a sign (e.g. chair, bed, TV) and then point with the dominate index finger to its location in space. Likewise, when describing work or chores as part of their personal narrative, few classifiers were used and/or classifier handshapes used were inconsistent with typical handshapes. As an example, one of the signers was attempting to explain some type of a press or equipment he worked with in his job. His use of classifier handshapes to describe the size and shape of the item and/or his engagement with the item were inconsistent, making it difficult to understand the type of equipment he was describing.

- Limited or no use of temporal referents. There were rarely indications of tense—past, present, or future. For example, in the DC4 sample from the CA tapings, what happened at what age seemed to change over the individual's narration. As well, what happened within any given timeframe—a given day or at a given location—was difficult to ascertain, as well as whether multiple events happened over multiple days or all on the same day. There exist many examples of vague or unclear temporal referents across the various samples. This was particularly evident in the scenario involving a young woman and man in a park and their encounters over several days. The fact that time passed between events—at least a day or more—was typically not included in the retellings. Responses that addressed sequential events—like what one did over the course of a day (get up, get dressed, eat breakfast, go to school or work, have lunch, come home, eat dinner, watch TV, go to bed)—were generally clear. For example, in the one scenario where a woman and a man both enter a kitchen at different times to do different things, the fact that some time passed before the second person entered the kitchen was generally established. But, narratives relating to life experiences or events that transpired over a period of time had limited or no temporal referents.

- Shorter, less complex sentences. This was particularly evident in the retelling of the stimulus scenarios. When the d/Deaf and DeafBlind individuals being interviewed were asked what they observed or what happened, a significant number would provide short responses—a few signs or a short sentence addressing one aspect of the scenario. This would require the interviewer to elicit further explanation by asking repeatedly for additional information. Less than half of the individuals interviewed were able to provide a substantive recall/narrative of the scenario without the request for additional information.

- Omissions of verb inflections. One of the scenarios the signers were asked to view involved a young woman and man in a park exercising and encountering each other over several days. At different points in their encounters, the woman would be running, the man would be watching her, or the woman would be waiting. But the manner in which those actions were occurring was rarely incorporated into the verbs by inflections indicating an extended gaze, a long wait, etc. Likewise, in the scenario involving the kitchen, the woman looking around inside the refrigerator for a bit of time was rarely indicated in the retellings.

It is important to note that these patterns were evident in many of the 30 tapings, but not all. As well, there were some unique findings that are worth mentioning. For example, two signers exhibited

echolalia—repetition of the interviewer's signs as he was signing. In another sample, the signer who had experienced a stroke had impaired use of one of his arms. As a result, his sign production and prosody were impacted. Another individual had Cerebral Palsy which also impacted prosody and sign production. Another person used few if any formal signs, but had a robust way of communicating information in a visual, mimed manner that occurred in the form of a narrative. So, along with specific patterns that impacted a significant number of the samples, there were also unique patterns that applied to only one or two individuals. These variations underscore why it is important that working interpreters gain exposure to a broad cross-section of d/Deaf and DeafBlind individuals in order to become familiar with a range of variations in language use and to gain the ability to adapt to these variations while interpreting.

Additional Observations

One observation related to the implication of language deprivation on many of the signers who were filmed as part of this project. As each provided information about their upbringing, diagnosis of their deafness, and early education, it was evident that many—if not most—had significant language deprivation during the early years of their lives. All but one of the individuals filmed was born into a family with parents who could hear and who had no prior experience with d/Deaf individuals. A high percent of the individuals were immigrants who either had limited to no formal education before coming to the United States. Most all who indicated they immigrated to the United States stated they did so as older adolescents or teenagers.

The literature about language deprivation in deaf children reinforces that if ASL is not acquired prior to the age of eleven, mastery of the complete syntax is likely not possible (Vicars, 2000).

One study states the following:

> Deaf children of hearing parents tend to miss out on the conversations that their hearing peers tend to have with their parents. Participation in conversation arranges children's synapses and enhances their intellect. He explains that the brains of young children are flexible and able to change—dendrites can develop new branches. When children reach puberty, their brains are less able to create new connections. Language deprivation can stunt the growth of the brain similar to the way vitamin deficiency can stunt the growth of the body (Bly, 2000).

This perspective is reinforced in a 2012 article by Humphries, et al.

> …because of brain plasticity changes during early childhood, children who have not acquired a first language in the early years might never be completely fluent in any language. If they miss this critical period for exposure to a natural language, their subsequent development of the cognitive activities that rely on a solid first language might be underdeveloped, such as literacy, memory organization, and number manipulation (p. 1).

The article goes on to illustrate the impact and harm to deaf individuals who experience language deprivation.

> Linguistic deprivation carries with it a spectrum of problems beyond strictly language pathologies. Cognitive activities that rely on a firm first language foundation such as

> mathematics (since symbol manipulation is involved) and the organization of memory are then disordered or disrupted. Linguistic deprivation also diminishes one's educational and career possibilities, since the cognitive factor that correlates best to literacy is a foundation in a first language—and without literacy one's professional opportunities are highly circumscribed. Additionally, linguistic deprivation leads to psychosocial problems due to the isolation and frustration one experiences from diminished linguistic and cognitive capability. This also results in the inability to express oneself fully, and to easily understand others completely. Clearly, linguistic deprivation constitutes a multi-faceted harm to the individual (p. 3).

One of the ways in which the consequence of language deprivation was observed in some of the samples generated by the d/Deaf and DeafBlind individuals taped for this project are in their limited socialization. For example, one of the individuals who had a fairly competent use of English-influenced signing for basic communication described a lack of social interactions. He indicated he attended public school with interpreters who had fair to weak skills and works in an environment where he is the only person who is d/Deaf. When asked if he socialized with other d/Deaf individuals, he indicated he did not. Instead, he discussed a routine that involved going to work each week day and spending weekend mornings getting coffee from Dunkin' Donuts, followed by hours of TV watching the rest of the weekend. Is it possible that he uses avoidance as a life strategy because social interactions are not meaningful or beneficial due to his communication limitations? Another example came from a signer from the Philippines who indicated she had been taken out of school at the age of five and just spent her days "playing and hanging out," but not knowing much of what was going on—she felt extremely isolated. Another individual discussed many hours spent playing cards with hearing individuals in an assisted living center to pass her time. These are just some of the examples of how the lack of language competence impacted the socialization skills of many of the individuals who were filmed and, consequently, impacted their quality of life.

Another observation related to the lack of acquisition of Theory of Mind in some of the individuals who were filmed. Theory of Mind is the ability to interpret one's own and other people's mental and emotional states, understanding that each person has unique motives, perspectives, etc. It is defined in the following way:

> **Theory of the Mind** (ToM) refers to the ability humans have to recognize and attribute mental states not only in themselves but in other people, and to understand that feelings and beliefs we have may be different than others.
> https://www.alleydog.com/glossary/definition.php?term=Theory+Of+Mind+%28ToM%29

One of the females who was filmed demonstrated a lack of Theory of Mind when asked to talk about her family and her upbringing. She was discussing her family and asked the interviewer to open his laptop and show her pictures of her family. She had never met the interviewer before, nor did he know her family. But, she assumed his laptop would have the same information on it as her laptop, indicating a lack of appreciation for their distinct identities and preferences.

Delays in Theory of Mind are attributed to other areas of development as well, and may have implications for the d/Deaf and DeafBlind target audience for this project.

> There are several domains of development where Theory of Mind skills may be a prerequisite or foundation for later development. First, it is very likely that Theory of Mind skills play a central

> role in children's understanding and production of narratives. Bruner distinguishes between the "landscape of action" and the "landscape of consciousness," both essential to narration. The fact that many deaf children appear to be delayed in their development of Theory of Mind skills may contribute to impoverished understanding of stories and so to their widely-reported delays in reading skills (Schick, et al, 2002, p. 3).

This may give insight into why several of the signers who participated in the filming had difficulty generating intelligible narratives and/or projected their own life experiences into the scenarios when asked to provide a retelling. For example, in the scenario where the two individuals come into the kitchen at different times to do different things, two of the female signers retold the scenario as if they were in it and detailed how they would prepare a breakfast or meal for the male who was in the scenario. In retelling the scenario about the young male and female who meet while in the park, two of the males talked about how they struggle in communicating with women, or would not know what to say to the woman. Another male used the invitation to retell the scenario to discuss his relationship with a woman and the problems that had been encountered. Or, the developmental implications associated with Theory of Mind may give insight into why many of the signers who reside in group homes described the furnished living room from the perspective of themselves sitting and watching TV—something they do regularly in the group home setting.

Closing Considerations

One of the considerations that emerged from the group process was a realization that the fields of interpreting and interpreter education must rethink expectations of interpreters—expectations are high, particularly for Deaf interpreters who are pressured to make sometimes impossible situations 'work.' How can interpreters be given permission to manage settings and consumers with atypical language in a responsible and appropriate way? So many are afraid of violating neutrality and confidentiality by expressing limitations—professional decisions are often governed by fear versus what is right or makes sense. In working with the population addressed by CALI, decision-making becomes complex because it is layered—which factor or characteristic is of greater importance than another; how are the factors inter-related? At what point does the interpreter need to ask for assistance—such as inclusion of a Deaf interpreter? These types of questions must be considered when developing the module on decision-making.

There is also the reality of supply and demand. If all seniors in Interpreter Education Programs graduated and were certified tomorrow, it would not be enough to replace all those working interpreters who will soon be retiring. As well, those retiring are typically those with the most experience and expertise—particularly in working with specialized populations. Considering the gap in competence between novice and expert interpreters, preparation of a workforce equipped to address the needs of the target consumer audience of CALI must be innovative. Certainly, ensuring a strong experiential component—where working interpreters receive frequent immersion with members of the target consumer audience—will enhance the likelihood of deeper learning and mastery. However, the LAT emphasized that the years of experience and language backgrounds of the team members may result in an over-estimation of the comprehensibility of the signing samples. These materials may be much more difficult for novice interpreters to comprehend due to their limited work experience and exposure to diverse consumers. This reality must be accommodated within the learning process.

As well, historically, the interpreting field has thought about populations of Deaf-plus and DeafBlind individuals as if they were discrete groups—rather than thinking about d/Deaf and DeafBlind people and the range of circumstances/conditions they can face and the implications of language deprivation when those circumstances or conditions exist. For example, if most d/Deaf children experience language deprivation, how might an individual being DeafBlind further impact language deprivation, acquisition, and use? How is the condition or circumstance further complicated by age, cognitive challenges, educational background, social isolation, etc.? This is a much more dynamic way to think about the complexities that interpreters will encounter. Immigrants can be viewed as a subset of the d/Deaf population, or as a circumstance or condition that d/Deaf individuals might face.

There are several things that will be of great importance to those interpreters who engage in a Program of Study as part of CALI. Practitioners will need the ability to recognize the various 'flags' that mark atypical language use and to possess a range of strategies for eliciting sufficient evidence to determine how to address the linguistic needs that exist. Practitioners will also need a range of decision options to respond to the demands of working with the target consumer audience in a responsible and ethical manner—one that ultimately meets the needs of the d/Deaf and DeafBlind individuals within their unique circumstances. CALI has an ambitious agenda to address, but it is a project that is long overdue and greatly needed.

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