

“She did it!”: Meaning-making in interaction between deaf and hearing siblings in Peru

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ABSTRACT

In this article, I argue that centering multimodal practices is important in the study of human communication and sociality, and becomes particularly relevant in the presence of asymmetries in language access. Using data collected as part of a two-year linguistic ethnography of deaf youth in Iquitos, Peru, I demonstrate how three siblings engage in extended dispute routines even in the face of sensory and communicative asymmetries. The microanalysis of video-recorded sibling interaction sheds light on their use of diverse multimodal resources to navigate the common interactional work of securing an interlocutor, coordinating attention, managing misunderstandings, and establishing shared references (Sidnell 2007, 2009). Not only do the siblings utilize multimodal resources to carry out the interactional project of making an accusation and building alliances, but they also ‘co-operatively’ engage in building a shared semiotic repertoire (C. Goodwin 2018). (Deaf, sign language, linguistic ethnography, multimodality, semiotic repertoire, Peru)*

INTRODUCTION

In Iquitos, Peru in 2015, siblings Gescania, Genco, and Gera¹ were doing many of the things one would expect of siblings—taking care of their homework, playing together, picking on one another, and bickering about household chores. What set this family apart was their interactions were carried out in a mix of Spanish and signs that had developed in the home due to Genco being born deaf. In this article, I argue for the importance of centering multimodal practices in the study of human communication and sociality, particularly in the presence of asymmetries in language access. A multimodal perspective makes available the diversity of communicative resources that the siblings utilize when interacting together and highlights Genco’s skill as a communicator. At the same time, detailed attention to multimodality in the siblings’ interactions makes evident when Genco is excluded from the participant framework of the interaction.

Around the world, there are large numbers of deaf individuals who are born into hearing families (Mitchell & Karchmer 2004), occasioning a likelihood that they



will face barriers in accessing the language(s) used in their homes (Humphries, Kushalnagar, Mathur, Napoli, Padden, Rathmann, & Smith 2016). If barriers to language access persist, deaf individuals may live with reduced access to the linguistic resources of named languages (i.e. conventionalized linguistic resources from spoken or signed languages) into childhood, adolescence, and even adulthood. Narratives of individuals in such a situation have portrayed them as having ‘no language’ (Moriarty Harrelson 2019), yet detailed attention to their communicative practices highlights their ‘communicative competence’ (Hymes 1972:53) and creative use of linguistic resources (e.g. Green 2017). This article builds on these findings by using the tools of linguistic ethnography to examine the communicative practices of a deaf individual with constrained access to linguistic resources. Focusing on the interactions of a family with one deaf and two hearing siblings in Iquitos, Peru, I highlight the deaf brother’s agency as he brings together diverse semiotic resources to skillfully participate in dispute routines with his sisters.

Sibling interactions provide an important site for language socialization (M. H. Goodwin & Kyratzis 2012). However, there has been limited research on sibling interactions in families with a deaf child. While siblings who share the experience of being deaf or hard of hearing have been found to have generally close sibling relationships (e.g. Eichengreen & Zaidman-Zait 2020; Woolfe & Smith 2001), deaf-hearing sibling relationships have been found to have more communicational difficulties (e.g. Berkowitz & Jonas 2014). Deaf-hearing sibling relationships are characterized by ‘sensorial asymmetries’ (i.e. participants have different experiences of being deaf and hearing; Kusters 2017:285). Moreover, in the case of deaf individuals who have not been able to acquire the linguistic resources of either a spoken or signed language (e.g. Spanish, American Sign Language), sibling relationships are also characterized by significant ‘communicative asymmetries’ (i.e. participants have different access to and knowledge of the linguistic resources of named languages; Adami & Swanwick 2019:2). Detailed attention to the sensory and communicative asymmetries in the sibling interactions highlights both the fluid communication among the siblings, as well as Genco’s exclusion from the participation framework.

Using data collected as part of a two-year linguistic ethnography of deaf youth in Iquitos, Peru, I demonstrate how Gescania (fifteen years old; hearing), Genco (thirteen years old; deaf), and Gera (nine years old; hearing) engage in extended dispute routines even in the face of sensory and communicative asymmetries. The microanalysis of video-recorded sibling interaction sheds light on their use of diverse multimodal resources to navigate the common interactional work of securing an interlocutor, coordinating attention, managing misunderstandings, and establishing shared references (Sidnell 2007, 2009). Not only do the siblings utilize multimodal resources to carry out the interactional project of making an accusation and building alliances, but they also ‘co-operatively’ engage in building a shared semiotic repertoire (C. Goodwin 2018). When the sisters do not engage in multimodal practices, however, Genco is cut off from being a full member of the

participation framework. The analysis of their interactions demonstrates how sibling dynamics can contribute to meaning-making in the face of sensory and communicative asymmetries.

RESEARCH WITH DEAF INDIVIDUALS
WITHOUT SUSTAINED ACCESS TO
LINGUISTIC RESOURCES

Historically, the communication of deaf individuals without sustained access to the linguistic resources of a named spoken or signed language has been referred to as ‘homesign’ (Goldin-Meadow 2003). The development of homesigns has captured the interest of researchers due to the unique language socialization and acquisition context under which the communication develops. Recently, however, a critical movement within Deaf Studies, led primarily by deaf scholars (e.g. Kusters, De Meulder, & O’Brien 2017; Friedner & Kusters 2020; Kusters & Hou 2020; Kusters & Lucas 2022), has resulted in a growing body of scholarship that adopts a linguistic ethnographic approach to the study of deaf individuals without sustained access to the resources of a named language. This new generation of scholarship has challenged the foundational studies of homesign regarding how deaf individuals and their communication are portrayed and how to define human ‘language’ (Goico & Horton 2023).

Early studies of homesign took place in the United States before the advent of advanced hearing technologies among children whose families had adopted an ‘oral’ language and educational philosophy (Goldin-Meadow & Feldman 1977; Feldman, Goldin-Meadow, & Gleitman 1978). Under the oralist philosophy, families chose to only use spoken language with their deaf children, actively avoiding the use of a sign language. Due to the inaccessibility of spoken linguistic resources, some children in this situation began to develop manual communication systems. Early studies with this population were carried out primarily through the lens of developmental psycholinguistics and generative linguistics (e.g. Goldin-Meadow 2003; Coppola & Newport 2005), and this approach has continued to be popular today (e.g. Coppola & Brentari 2014; Carrigan & Coppola 2017; Rissman & Goldin-Meadow 2017; Abner, Namboodiripad, Spaepen, & Goldin-Meadow 2021; Flaherty, Hunsicker, & Goldin-Meadow 2021). Within this paradigm, homesign systems provide a case study to examine the role of language input in language acquisition. This research has been based on the notion of ‘full’ linguistic input—the deaf children are not exposed to a sign language and are unable to acquire a spoken language—without considering the partial access to linguistic resources that these children might have (Koulidobrova & Chen Pichler 2021).

While there were some early ethnographic studies of deaf individuals with constrained access to linguistic resources (e.g. Kuschel 1973; Kendon 1980a,b,c; Jepson 1991), a new ethnographic turn has emerged in recent scholarship using a linguistic ethnographic approach (Hou & Kusters 2020; Kusters & Hou 2020; Hodge & Goico 2022). Linguistic ethnography is an umbrella term that

encompasses the work of interdisciplinary scholars who bring together ethnographic and linguistic methodologies to examine language use in its socially situated context (Creese 2008; Tusting 2020). Ethnography is used to ‘open up’ the everyday communicative practices of individuals and linguistics to ‘tie down’ those ethnographic insights with granular linguistic analyses (Rampton, Tusting, Maybin, Barwell, Creese, & Lytra 2004).

Using this approach, the new generation of scholarship has highlighted the social lives of deaf individuals with constrained access to linguistic resources through sustained ethnographic fieldwork. This research has included the documentation of deaf individuals actively involved in community activities (Neveu 2019; Goico 2020; Horton 2020), incorporating cultural practices into their signing (Haviland 2013; Green 2014, 2022), moving across various communities (Moriarty Harrelson 2019), and maintaining relationships with hearing (Fusellier-Souza 2006; Reed 2020) and deaf individuals (Haviland 2016; Hou 2016; Horton 2020). In addition, this approach has called into question how ‘language’ is defined and delineated, challenging the notion of bounded ‘full’ languages. Linguistic ethnographic scholarship has drawn attention to how deaf individuals without sustained access to linguistic resources utilize an array of semiotic resources (e.g. gestures, eye gaze, facial expressions, bodily orientation, use of objects) that emerge from the social and interactional context (Green 2017; Kusters, Spotti, Swanwick, & Tapio 2017; Adami & Swanwick 2019; Safar 2019; Goico 2021). There has also been a proliferation of terms to describe the communication of individuals with constrained access to named linguistic resources, as scholars move away from the term *homesign* and develop naming conventions particular to the signing environment that they study (Goico & Horton 2023).

This article builds on linguistic ethnographic scholarship with deaf individuals to examine meaning-making among deaf and hearing siblings. I demonstrate how multimodal practices make possible sibling engagement in complex dispute routines even in the face of sensory and communicative asymmetries. In the analysis below, these dispute routines also provide an ‘architecture of intersubjectivity’ upon which diverse communicative resources can be collectively built (C. Goodwin 2004:160).

SIBLING DISPUTES AS A SITE FOR LANGUAGE SOCIALIZATION

Language socialization research focusing on hearing children has demonstrated that peers (both friends and kin) play an important role in socializing one another and building distinct social worlds from those of adults (M. H. Goodwin & Kyratzis 2012). This research has documented how peer socialization occurs through the creative use of cultural and linguistic resources within everyday interactional routines (e.g. de León 2007; Reynolds 2007, 2010; Minks 2010). The significance

of peer socialization has also been found in the sign language literature. Due to the high rates of deaf children who are born to hearing parents (Mitchell & Karchmer 2004)—and thus the lack of parent-child sign language socialization—schools and, importantly, peer interaction have been found to be crucial for socialization into a sign language (e.g. Padden & Humphries 1988; Reilly & Reilly 2005). However, much less research has been conducted on the role of hearing siblings in language socialization in families with deaf children.

Researchers directly investigating deaf-hearing siblings have often focused on the sibling relationship and the emotional impact of having siblings of different hearing statuses (e.g. Woolfe & Smith 2001; Tattersall & Young 2003; Berkowitz & Jonas 2014), with much less research addressing the theme of sibling language socialization. Nevertheless, language socialization among siblings is implicit in much of the recent linguistic ethnography research focusing on the lives of deaf individuals around the world. For example, in families with multiple deaf siblings, sibling interactions can provide the context for the emergence of a new sign language, as is the case in Zinacantec Family Homesign (ZFHS) (Haviland 2016). The impact of having deaf siblings as signing role models can be seen in the increasing language complexity in the signing of younger siblings (Haviland 2013) and in the different socialization experiences of younger and older deaf siblings (Hou 2020).

In the case of deaf children with constrained access to linguistic resources, hearing siblings have an important role in the language socialization of the deaf sibling. Hearing siblings may be some of the primary individuals communicating with the deaf child. Some researchers report that hearing family members, including hearing siblings, use manual communication without speech when communicating directly to the deaf individual (Hou 2016; Horton 2018; Goico 2019b). Others have noted that the hearing siblings closest in age to the deaf individual have the highest levels of comprehension in the manual modality (Carrigan & Coppola 2017). Nevertheless, in family units that have both deaf and hearing members, deaf members can be excluded from interactions in which they are not the focal point of the interaction. It is often reported in local sign contexts that hearing individuals will sign when communicating with the deaf individual but not when communicating with other hearing individuals (Green 2014; Kusters 2015; Reed 2021), thereby cutting off the deaf individual from observing others signing around them.

In this article, I home in on the deaf-hearing sibling interactions in a family that has a deaf child without sustained access to the linguistic resources of either Spanish or Peruvian Sign Language. In the close relationship between these siblings, disputes are a common interactional routine. Although disputes are often associated negatively with conflict, in her article on Jewish Americans in Philadelphia, Deborah Schiffrin (1984:332) discusses the ‘sociability of arguments’. Schiffrin (1984:331) notes that the arguments that she documented were ‘exchanges with the form of argument, but without the serious substance of argument’. She found

that the activity of inverting the polarizing speech of disagreement strengthened bonds of solidarity between the individuals with whom she worked. Additional research by Tannen & Kakavá (1992) and Georgakopoulou (2001) found that disagreement does not necessarily threaten relationships and can even have the potential to promote intimacy.

Moreover, interactional and ethnographic research with children has demonstrated the crucial role of dispute in peer interactions. ‘Dispute for children provides a way for playing with language, asserting one’s position, for displaying affective stance and, consequently, character, sanctioning violators, and rearranging the social order’ (M. H. Goodwin 2006:33). In evaluating another child, through actions such as insults, accusations, evaluations, assessments, and complaints, children display their stance vis-à-vis another child (M. H. Goodwin 1990, 2006; Evaldsson 2007). Crucial to the effectiveness of such evaluative stances is recruiting the support or alignment of peers, and thus using these practices to construct and maintain the peer social order (M. H. Goodwin 2002, 2006). In this article, I examine an interactional extract in which the three siblings launch accusations against one another and seek to recruit the alignment of another to support their stance against the third sibling. This interactional work becomes possible through the use of diverse multimodal resources. Moreover, dispute routines become the site for the development of shared semiotic resources. As discussed in Goico (2021), similar assemblages ‘of people, semiotic resources and objects’ (Pennycook 2017:280) that come together routinely, such as friends getting together to play bingo or a family sitting to eat a meal together, provide the occasion for building shared semiotic resources specific to the reoccurring activity.

METHODS AND ANALYSIS

The interactions analyzed in this article come from data that was recorded as part of the Social Lives of Deaf Youth Project, a linguistic ethnographic study on the social and educational lives of deaf youth in Iquitos, Peru that took place from 2013–2015. Iquitos is located in the Peruvian Amazon and is the capital of the Loreto Region. It is the sixth largest city in Peru with a population of approximately 500,000 people. My research suggests that as many as 99% of deaf children in Iquitos are born to hearing parents. There is no system of hearing screening in hospitals, and therefore families often do not identify their child is deaf until after one year of age. Even after identification, there are limited resources to diagnose a child’s hearing levels or provide access to linguistic resources (Goico 2019a). There is no access to hearing assistive technology in the city and exposure to Peruvian Sign Language (*Lengua de Señas Peruana* – LSP) tends to be through informal means. In the past, deaf children typically met other deaf individuals and first gained access to the linguistic resources of LSP in special education schools. However, since the local school districts began to implement the Peruvian policy of *educación*

inclusiva, deaf children are mainstreamed into general education classrooms, where they are typically the only deaf child in the school and receive no support services to access the language of the classroom (Goico 2019a).

I am a hearing, white, Latina researcher, who has been conducting research in Iquitos since 2010. My analysis is informed by the extended amount of time I have spent in Iquitos. While working in Iquitos, I have been involved not only in research activities, but also in improving educational opportunities for deaf youth through the formation of a parents' association and the first public deaf education program in the city (Goico, Villacorta Ayllon, Lizama Monsalve, Torres Vargas, Cerron Bardales, & Santamaria Hernandez 2021). The Social Lives of Deaf Youth Project brought together linguistic and ethnographic methods to document the social and communicative lives of ten Iquitos deaf youth who had constrained access to the linguistic resources of both Spanish and LSP. I conducted participant observation, semistructured interviews, and video recordings of everyday interactions in the homes and schools of the deaf youth, as well as recorded field notes of my activities. During the 2014 school year, I conducted weekly recordings in the classroom of each deaf student. Then, in 2015, I conducted ten to twelve visits to each student's home, typically recording for four to six hours at a time with two cameras.

The analysis presented in this article comes from the household of one deaf youth, Genco, who was thirteen years old at the time of the recording. Genco is the only deaf individual in his family. He is profoundly deaf, as well as blind in one eye. In 2015, Genco had only attended three total years of schooling and was not enrolled in school. He had acquired some basic linguistic resources from LSP, including the LSP numbers and alphabet, while enrolled in a special education school in Lima for six months. He had no additional exposure to the linguistic resources of LSP, and I never witnessed him speak or lipread Spanish words.

From the twelve days of recording conducted in Genco's home, I selected five days at random for coding and analysis. Video recordings were first prepared in the program ELAN (2018), an annotation tool for audio and video recordings. I used the program to create time linked annotations by identifying moments in the recordings where Genco was engaged in interaction, and then labeled the ongoing activity, the individuals involved, and the nature of the interactional project. This first level of coding was then used to explore ethnographic themes and build collections across the data. The interactional extracts presented here were selected as representative of the disputes I frequently witnessed among the three siblings.

The interactional extracts are presented as a transcript that is meant to be read in a comic strip fashion. The transcripts rely heavily on screenshots taken from the video recordings and make visible the variety of semiotic resources that are employed in the interaction. Whenever possible, I selected a still image from the start of the sign or gesture stroke (Kita, van Gijn, & van der Hulst 1998). Time stamps are displayed

above each image with a reference number. A textual transcript is aligned below the images with sign glosses in capital letters, descriptions of additional bodily information in parentheses, and vocal utterances in italics. A forward slash (/) represents when parts of the body are used simultaneously within an utterance. The image reference number above each image is also listed in the textual transcript surrounded by angle brackets (<#>) to indicate where in relation to the transcript the image occurred. Due to the siblings' names all starting with the letter G, I have labeled their utterances in the textual transcript as Genco (GCO), Gescania (NIA), and Gera (ERA). Interpretive translations are provided in the textual transcript. I have calculated timing between turns according to the stroke-to-stroke timing method described in Casillas, De Vos, Crasborn, & Levinson (2015).²

SIBLING ARGUMENTATION IN GENCO'S HOUSEHOLD

In 2015, Genco's household consisted of his father Julio, his older sister Gescania, and his younger sister Gera. Since Genco was not attending school in 2015, I would visit the family in the mornings, usually arriving around 8:00am and staying until the two sisters had to leave for school around 1:00pm. Most of my recordings focused on the three siblings, as Julio was typically working as a *motocarro* 'motorcycle taxi' driver. While Julio was out, the three siblings were responsible for taking care of the chores around the house, including cooking, fetching water, washing dishes, and washing and folding clothes, and the sisters were responsible for finishing their homework.

Disputes were a ubiquitous part of the siblings' lives as they negotiated these various responsibilities. As the oldest, Gescania often tried to take on the role of an authority figure but was regularly challenged by her brother. One of the reoccurring battles was over fetching water from the well two houses down. Their house had no running water nor its own well. Depicted in extract (1) is an example of one conversation between Gescania and Genco as they negotiated how many buckets of water Genco would bring from the well. The negotiation started when off-camera Gescania could be heard from the backroom telling Gera that Genco should bring the water. Although this conversation was picked up on the camera, it was not available to Genco. Gera is then seen on the camera running into the front room and signing to Genco to carry the water. Genco's response, however, was to lift up his palm to tell her to wait. Gera ran back into the backroom to report to Gescania. Again, this was a conversation that was not available to Genco, although he likely could imagine from Gera's actions that she was reporting on what had occurred to Gescania. Extract (1) picks up when Genco has gone to the backroom to argue with Gescania over the number of buckets of water he has to carry.

MEANING-MAKING IN INTERACTION BETWEEN DEAF

(1) Dispute over carrying water (GCO: Genco; NIA: Gescania)

image 1 00:00.065



image 2 00:00.560



image 3 00:00.880



image 4 00:01.276



1 GCO: THREE

'It's three buckets.'

2 NIA: LPOINT.2<1> FOUR<2> POINT.1<3> GERA<4>

'You carry four buckets of water. Gera and I do schoolwork.'

image 5 00:01.860



image 6 00:03.106



image 7 00:04.040



3 WRITE<5>

4 GCO: THREE/(bounces hand emphatically then extends hand toward outside<6> /angered expression)

'It's three buckets!'

5 NIA: (head flick) THREE<7>

'Oh yea, three.'

image 8 00:05.100



image 9 00:06.140



image 10 00:06.710



6 GCO: THINK/(headshake)<8> POINT.2

'You don't think.'

7 NIA:

THINK/(headshake)<9>

'I didn't think.'

8 GCO:

FOUR/(head nod/open mouth/eye roll)<10>

'Four, unbelievable.'

As seen in this brief exchange, Genco is able to skillfully argue with his sister to ensure that he only carries three buckets of water. He displays his strong affective

stance as he argues through his facial expressions and emphatic gestures (M. H. Goodwin & Cekaite 2018). Genco scrunches up his eyebrows in anger, rolls his eyes in disdain, and produces his THREE in line 4 with staccato movements and a final emphatic point toward the outside (image 6). He also openly makes negative assessments of Gescania, accusing her of ‘not thinking’ (line 6), an utterance which he produces by pointing with his index finger to his head as he shakes it and then pointing to Gescania (image 8). Characteristic of these disputes, however, is their fleeting nature. Despite Genco’s strong affective stance during the dispute, moments later he was goofing around with Gera as they collect their allotted buckets of water. These sibling disputes would open and close without any serious ramifications, similar to Schiffrin’s (1984:331) description of sociable argumentation as ‘exchanges with the form of argument, but without the serious substance of argument’.

Crucial to negotiating a winner of these disputes was the ability to build alliances. As M. H. Goodwin (2002, 2006) describes in the context of girls’ friendship groups, building momentary coalitions or alliances are crucial to navigating social relationships within a group. In the context of doing chores, Gescania would often invoke an alliance with the clearest authority in the household—their father. While arguing with Genco over which chores he should be doing, she would eventually resort to saying, ‘I’m going to tell dad’—which was enough to get Genco to do his chores. Extract (2) provides an example of how Gescania establishes her own authority by invoking their father when trying to get Genco to wash the dishes. On this morning, Genco was lying down on the bed in the backroom playing on the cell phone. Gescania dropped down on the bed and told him to wash the dishes. When Genco told her to wait (lines 11, 13; images 12, 15) and made no movement to get out of bed, she eventually signed DAD (produced with the index finger touching the chin) and pointed at Genco (line 15; images 16–17). After initially failing to get Genco out of bed, this statement finally worked. I include the initial request in text only, including images in the second half of the transcript.

(2) Dispute over washing dishes (GCO: Genco; NIA: Gescania)

- 1 NIA: WASH.DISHES POINT.thumb.dishes
‘Go wash the dishes.’
- 2 GCO: (drops the phone on his chest and rubs his eye)
- 3 NIA: WHAT (takes the phone) POINT.thumb.dishes
‘What? Go.’
- 4 GCO: (head nod/puts his palm out toward Gescania)
‘Give it to me.’
- 5 NIA: POINT.2 POINT.dishes
‘You go.’
- 6 GCO: (rubs his eyes and stretches)

MEANING-MAKING IN INTERACTION BETWEEN DEAF

7 (22.0)
image 11 00:32.070



image 12 00:33.080



8 NIA: (head nod)
'Yeah.'

9 GCO: (raises eyebrows)
'What?'

10 NIA: (head nod)/POINT.thumb.dishes<11>
'Go.'

11 GCO: WAIT<12>
'Wait.'

image 13 00:34.480



image 14 00:36.420



image 15 00:37.330



12 NIA: (rolls eyes/scratches chin)<13> POINT.thumb.dishes/(serious expression)
<14>
'Seriously go.'

13 GCO: WAIT<15>
'Wait.'

image 16 00:38.640



image 17 00:39.150



14 (1.0)

15 NIA: DAD/(raises eyebrows)<16> POINT.2/(head nod)<17> (walks away)
'I'm telling dad about you.'

Invoking their father's authority was not the only resource for alliance building. The sibling organization as a group of three provided a fortuitous dynamic for alliance building within their disputes. As early sociologists discussed, there is a tendency within triads for two group members to align against a third (Simmel 1902; Vinacke & Arkoff 1957; Caplow 1968). In the following section, I describe Genco's agency and communicative competency in successfully recruiting his older sister Gescania into an alliance against Gera in a dispute regarding a lost protractor. Genco skillfully draws on a diversity of multimodal resources to launch an accusation against his sister. The extract also provides evidence of how dispute routines can become a context for building shared semiotic resources.

Disputes and alliances: The lost protractor

In the following analysis, I describe one instance of argumentation between the siblings surrounding a lost protractor. The argument took place at the table in the front room, a space that was the hub of social activity in the home. It was where the family would congregate for meals, to do homework, to talk, and to play together. On this particular morning, all three siblings were sitting together; Gescania and Gera were working on homework and Genco was looking through a notebook (see [Figure 1](#) below). Prior to where extract (3) picks up, the siblings had engaged in brief two-party conversations about Gescania's need for a ruler. First, Gescania, who was drawing boxes for an outline, asked Genco where the ruler was, but he did not know. A minute later, in speech, Gescania made an offhand comment to Gera (not accessible to Genco) that she did not have a ruler to make her outline and then continued with her work. This prompted Gera to ask Genco where the ruler was, and once again he said that he did not know. Extract (3) begins a few moments later with Genco attempting to get Gescania's support in accusing Gera of losing the protractor. The siblings use both the straight edge of a ruler and a protractor to draw straight lines. Therefore, in the preceding conversations Gescania is searching for a ruler, but it becomes relevant to Genco to specify that the lost item at the center of his accusation is a protractor. To accomplish the accusation, Genco employs a diversity of multimodal resources to secure Gescania as an interlocutor, coordinate attention, manage misunderstandings, and establish shared references (Sidnell 2007, 2009).

Securing an interlocutor and coordinating attention

The dispute begins with Genco launching the accusation that Gera has lost the protractor. Genco designs his utterance to not only accuse Gera but also to build an alliance with Gescania. Rather than accusing Gera directly, Genco calls to Gescania and makes the accusation against Gera to his older sister. In this way, although Gera is the target of the accusation, she occupies the role of a side participant and Gescania the role of addressee (Clark & Carlson 1982; Haviland 1986). In designing



FIGURE 1. The siblings working at the front table in the lost protractor conversation.

this participation framework, Genco strategically configures the participant roles to simultaneously initiate a dispute and build an alliance.

To design this participation framework, Genco must first secure Gescania as an interlocutor and then coordinate attention among the three siblings. As shown below, Genco initially secures Gescania's attention but encounters difficulty in coordinating attention among all three participants. As a result, in his first attempt at launching the accusation, Genco does not successfully recruit Gescania into an alliance. Crucial to understanding the work that goes into Genco securing and coordinating attention is the interplay of eye gaze. In the transcript images, I combine my two camera angles and add gaze arrows, so as to emphasize the gaze of all three siblings.

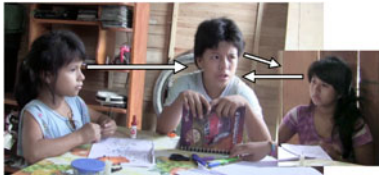
- (3) Dispute over the lost protractor, part 1 (GCO: Genco; NIA: Gescania; ERA: Gera)
 image 18 10:06.934 image 19 10:07.904



- 1 GCO: *vocalization*/(gaze Gescania)<18>
‘Hey.’
- 2 NIA: (gaze Genco/head flick)
‘What?’
- 3 GCO: *POINT.hand.3*/(head nod/gaze Gera/scrunched eyebrows)<19>
‘She did it.’

image 20 10:08.778

image 21 10:10.051



- 4 (turns gaze back to Gescania)<20>
- 5 ERA: L(turns to gaze at Gescania)
- 6 NIA: L(turns to gaze at Gera)
- 7 (1.4)
- 8 NIA: (head flick)
‘What?’
- 9 GCO: L(gaze Gera)
- 10 ERA: *L¿qué?/POINT.3*/(headshake) *loco está/CRAZY*<21>
‘What? He’s crazy.’

image 22 10:11.448



image 23 10:12.285



- 11 NIA: (gaze Genco/head flick)<22> (1.0) (gazes down at her work)
'Huh?'
- 12 ERA: (gaze down)
- 13 GCO: L(head nod/raise eyebrows/lean toward Gera)<23>
'Yeah?'

image 24 10:12.713



image 25 10:13.127



- 14 ERA: (gaze Genco)
- 15 GCO: LPOINT.2<24>
'It was you.'
- 16 ERA: L(gaze down)<25>

At the start of extract (3), Gescania is looking down at her work and Gera is looking toward Gescania and laughing, having just laughed at a comment Gescania made only in Spanish to the table (but was not accessible to Genco) about the person sneezing next door. Genco's first utterance is a vocal summons to Gescania, produced by gazing at Gescania and making a noise (line 1, image 18). Even though Gescania is looking down and not aware of Genco's gaze direction, her response displays an understanding that the summons was directed at her; she looks up at Genco and produces a head flick to ask, "what?" (line 2). Once Genco has Gescania's gaze and she asks her question, he launches his accusation against Gera (line 3, image 19). This accusation is formed through the combination of multi-modal resources (C. Goodwin 2000; Kusters et al. 2017). It includes an open palm point at Gera, scrunched eyebrows that express the seriousness of what he is saying, and the indexical function of gaze. Genco looks away from Gescania and toward Gera as he points to her, and then turns back to Gescania to see her response (image 20). Genco's skilled gaze shifting communicates that the target of his accusation is Gera, but his addressee is Gescania. Although the open palm point was regularly used in the family to make accusations, Genco does not provide additional information about what he is accusing Gera of doing.

Following Genco's accusation, Gescania turns her gaze to Gera and asks her "What?" (line 8). Although Gera is a side participant, she is actively watching the unfolding accusation. Thus, in response, Gera defends herself, launching her own accusation against Genco. Gera says "¿Qué? Loco está." 'What? He's crazy' in speech while shaking her head, pointing to Genco, and signing CRAZY (line 10, image 21). Unlike Genco, Gera gazes at Gescania the entire time she makes the accusation. Nevertheless, she produces a multimodal utterance that Genco can access, thus indicating her own construction of the participation framework with Gescania as the addressee and Genco as the oversee-er.

Next, Gescania turns back to Genco and lifts her eyebrows to ask, "Huh?" (line 11, image 22). Here, we see the difficulty that Genco encounters as a deaf individual with hearing siblings. Gescania does not ensure that she has Genco's eye gaze when asking the question, and thus Genco is unaware that the question has occurred. When Gescania does not receive a response to her question, she returns to look down at her work (image 23). Genco proceeds to respond to Gera by leaning toward her, raising his eyebrows, and nodding his head (line 13, image 23). When Gera looks up, Genco bounces his finger up and down as he points to her (lines 14–15, image 24). Gera, however, avoids engaging with Genco's direct accusation by looking down at the bottle of glue in her hand (line 16, image 25). Thus, at the end of Genco's first accusation attempt, the nature of Genco's accusation has not come to light (at least for Gescania) and Genco has not secured Gescania's support.

Establishing shared references and managing misunderstandings

Extract (4) displays Genco's second attempt to accuse Gera and build an alliance with Gescania after having not achieved the desired response on his first attempt. In this second attempt, Genco starts by trying to clarify the nature of his accusation. He turns to Gescania and again uses a vocalization to call for her attention (line 18, image 26). Genco then picks up a pen and begins drawing (line 19, image 27). Genco and Gescania work to establish the referent of the drawing in an extended repair sequence, in which she moves from a general to a specific other-initiated repair (Dingemanse, Roberts, Baranova, Blythe, Drew, Floyd, Gisladottir, Kendrick, Levinson, Manrique, Rossi, & Enfield 2015). Figure 2, below the extract, indicates the new elements that Genco adds to each iteration of his drawing of the protractor.

- (4) Dispute over the lost protractor, part 2
image 26 10:15.100



- image 27 10:17.790



MEANING-MAKING IN INTERACTION BETWEEN DEAF

- 17 (1.0)
 18 GCO: (gaze Gescania) (headshake) *vocalization* <26>
 'Not right. Hey.'
 19 GCO: (begins drawing) <27>
 20 NIA: L (gaze Genco)
 21 ERA: L (gaze Genco)
 image 28 10:21.640



image 29 10:22.790



- 22 GCO: POINT.drawing/(gazes Gescania) <28>
 'This.'
 23 (1.1)
 24 NIA: POINT.pinky.paper/(gazes Gera/scrunches eyebrows) <29>
 'Huh?'
 image 30 10:23.06



image 31 10:28.690



- 25 NIA: (gazes Genco)
 26 GCO: L (draws again) <30> POINT.drawing/(raises eyebrows) <31>
 'This.'
 image 32 10:29.480



image 33 10:30.930



- 27 (0.8)
 28 NIA: POINT.drawing BACKPACK/(eyebrow raise) <32>
 'A backpack?'
 29 GCO: (headshake) (enacts drawing a line with a ruler) <33>
 'No, it's used for making lines.'
 image 34 10:31.960

image 35 10:34.316



- 30 (draws again)<34>
 31 NIA: L(head nod) *ya regla*
 ‘Ahhh, ruler’
 32 GCO: (gaze Gescania) POINT.thumb.3/(gaze Gera/*vocalization*)<35>
 ‘She did it.’

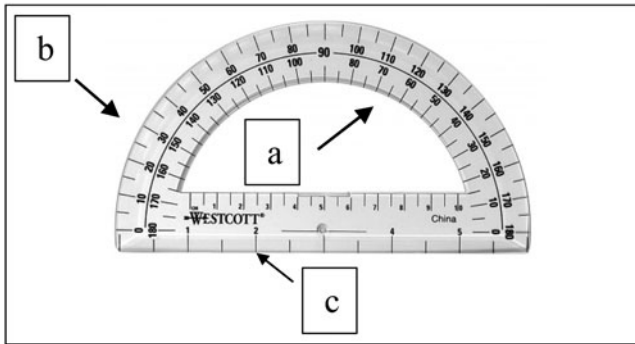


FIGURE 2. The letters indicate the three portions of the protractor that Genco draws during the extended repair sequence.

After calling for Gescania’s attention, Genco looks down to pick up his pen and begins drawing without waiting to see if Gescania will look at him. This move points to Genco’s confidence in her as an interlocutor. Green (2014, 2022), in her discussion of the ethics of interaction, discusses how choosing to provide eye gaze (or not) to a deaf individual is a moral decision that frames hearing interlocutors as willing or unwilling participants. In this case, Gescania’s prompt responses to Genco’s vocal summonses displays her willingness as an interlocutor.

Genco first draws a straight line and then a semicircle connecting the two ends of the line (line 19, image 27; Figure 2, portion a). Gescania’s initial repair directed first to Gera and then to Genco is an open request “Huh?”, produced by scrunching her eyebrows (line 24, images 29–30). Genco responds by drawing another straight line and semicircle around the first one, to create the outline of the protractor (line 26, image 30; Figure 2, portion b). In her next repair, Gescania becomes more specific, using a restricted offer to propose that his drawing is a backpack by moving her hand down the front of her shoulder and lifting her eyebrows to indicate a question (line 28, image 32). Gescania probably guesses a backpack because she is imagining two half-moons inside of each other as a drawing of a backpack strap.

Genco shakes his head and mimics holding down a ruler and drawing a straight line. Then he begins drawing for a third time to add hash marks to his drawing (lines 29–30, images 33–34; [Figure 2](#), portion c). This time, Gescania nods in understanding and names the object to herself (line 31, image 34). Having established the object, Genco resumes his accusation, pointing with his thumb to Gera while looking toward her (line 32, image 35), and then back to Gescania (extract (5); line 33, image 36). It is noteworthy that Genco does not specify what action happened to the protractor; he specifies the object (protractor) and the person (Gera), but not the verb. Yet, as seen in extract (5), this does not impact Gescania’s uptake. The ability to elide information without impacting mutual understanding is likely due to the wealth of information that is shared among the siblings ([Haviland 2013:163](#)).

(5) Dispute over the lost protractor, part 3
image 36 10:35.492



image 37 10:36.780



- 33 GCO: (gazes back at Gescania)
 34 NIA: (gazes at Gera) (headshake)<36>
 ‘Ridiculous’
 35 ERA: L(headnod) WHAT<37>
 ‘Yeah and what?’

image 38 10:38.272



image 39 10:38.622



36 GCO: POINT.hand.2<38>
 ‘Where did you put it?’

WHERE<39> POINT.hand.2

image 40 10:39.842



image 41 10:40.242



- 37 ERA: ¿Qué?/(raises eyebrows/opens mouth) POINT.2<40> POINT.1 <41>
‘What? You.’

image 42 10:41.442



image 43 10:41.752



- 38 POINT.shelves<42>
‘I put it on the shelves.’

- 39 NIA: L(headshake) (gaze Genco/emphatically taps Genco’s arm)<43>
‘Hey!’

image 44 10:42.262



image 45 10:43.632



- 40 POINT.hand.3 POINT.hand.shelves<44> (stares down Gera)
‘Sure she put it on the shelves. Ridiculous.’

- 41 GCO: L(gazes down at his notebook)<45>

In extract (5), Gescania aligns with Genco, turning to gaze at Gera and shaking her head (line 34, image 36). Again, Gera tries to defend herself. She looks at Genco, nods her head, and signs WHAT (line 35, image 37). Genco looks in front of him as he uses an open palm point to Gera, signs WHERE, and ends with another emphatic open palm point to Gera while gazing at her (line 36, images 38–39). Gera appears shocked by the accusation, her eyebrows pop up and her mouth opens as she says, “¿qué?” and then points to Genco (line 37, image 40). Gera then continues to defend herself pointing to her chest and then the shelves to indicate where she left the protractor (line 37–38, images 41–43). As Gera attempts to defend herself, Gescania emphatically taps Genco on the arm to call his attention and then, using an open palm angrily points to Gera and then to the shelves to say “sure she put it on the shelves” (line 40, images 43–44). Gescania then turns to look at Gera and stares her down (line 40, image 45). Genco is apparently satisfied with this response and returns his attention to the notebook in which he had been drawing (line 41, image 45). When Genco

looks away, removing his role in the participant framework, the sisters switch to using Spanish. Gescania continues to reprimand Gera in a spoken back-and-forth disagreement in which she asks Gera, “if you left it there, why isn’t it there?”. Their verbal dispute lasts for another twenty-eight seconds before petering out. Four seconds after it ends, Gera asks Gescania to share her colored pencils and they continue working on their homework unphased.

DISCUSSION

The dispute surrounding the lost protractor provides a clear example of Genco’s agency and communicative competency. Genco is able to combine a variety of multimodal resources in order to successfully recruit Gescania into an alliance against Gera. In doing so, Genco is able to navigate the primary tasks underlying interaction—securing an interlocutor, coordinating attention, managing misunderstandings, and establishing shared references (Sidnell 2007, 2009). In this discussion, I describe the variety of multimodal resources that Genco and his sisters used.

One of the multimodal resources that Genco employed was a set of signs that has been conventionalized within the family. One of the most common signs was pointing. The indexicality of these signs make them highly productive linguistic features. In addition, the considerable shared context—access to a shared space and shared history within that space (Haviland 2013)—allows pointing to be an even more productive resource because the family can capitalize on their ‘common ground’ (Clark 1992). In extracts (3)–(5), points were made to the first person, second person, and third person, to locations, and to objects. In addition, points employed a variety of forms, including the index finger, the palm, the thumb, and the pinky. An important form in the context of this dispute was the open palm point, which has become a stable part of the family’s semiotic repertoire for making accusations within disputes and complaints. Primarily, points were used to refer to a referent at a distance; however, pointing while touching was also used when Genco was drawing. In addition to points, the siblings used their shared signs for questions, including the raised eyebrows, both with and without the open palms and head tilt to mean ‘what?’ or ‘huh?’. In addition, Genco used their sign for *WHERE*, which combines the open palm found in *WHAT* with a back-and-forth hand movement and a searching gaze. While the use of the open palm and head tilt were ubiquitous among the children I observed in Iquitos, Genco’s family was the only one I found to develop distinct conventionalized question words. This was one example of the more elaborate signing I found in his home in comparison with the other homes I observed.

As noted in the context of the sign *WHERE*, gaze is another crucial semiotic resource that is employed throughout the interaction. Gaze is used as an element of a sign, as an index, to specify an addressee, to convey displeasure, to provide attention, and to avoid providing attention (e.g. when Gera looks down at the glue in her

hands rather than at Genco who is launching an accusation at her). While gaze is crucial in interactions involving hearing individuals (C. Goodwin 1980), it plays an even more important role in interactions with deaf individuals who communicate using primarily visual resources (Bauman 2008). In this interaction, Gescania displays her willingness to provide Genco with her gaze, promptly attending both times he makes vocal calls for her attention despite being engaged in another activity.

Although Genco primarily uses visual resources, he uses some aural resources. He uses vocalizations to call for attention and for emphasis. Gescania and Gera, by contrast, regularly mix spoken Spanish resources into their utterances. Nevertheless, they combine their spoken resources with visual resources when Genco is a participant in the interaction. It is important to note, however, that they do not make their spoken utterances visually available when Genco is not part of the participation framework. Thus, Genco becomes the focal point for visual interactions but does not typically have the opportunity to view others signing around him (Green 2014; Kusters 2015; Reed 2021).

The head and face also provide the context for additional semiotic resources. Genco and his sisters employ the eyebrows as a resource. An upward eyebrow movement is used as a general open question, as well as the downward eyebrow movement. However, the downward movement also conveys confusion and uncertainty. In addition, scrunching the eyebrows is used to convey an upset or serious affect. The head is used for headshakes, head nods, and head tilts. The head tilt makes up part of the question sign to mean ‘what?’ or ‘huh?’.

An additional resource that the siblings utilize is touch. The use of touch can be seen in extract (5), when Gescania taps Genco’s arm to get his attention. Taps on the body are a typical attention getting device that have been described in sign languages (Baker 1977). Gescania’s tap in line 39, however, does more than only call for attention. I have noted in the transcript that Gescania produces an emphatic tap on Genco’s arm, which might be better described as a slap. In this way, Gescania is able to convey an urgency in needing his attention. This example demonstrates how the siblings can use the production of the tap (its force and quickness) to provide additional context above and beyond needing the attention of the other.

A final important resource in these extracts was drawing (see Kusters 2020 for a discussion of writing practices in interactions with deaf and deafblind interlocutors). Across the five days of recordings that I analyzed, I found three contexts in which Genco used drawings to specify a particular object. Although this was a less common resource across the recordings, it was used when there was not a shared sign for a particular object that Genco wanted to specify. This can be seen clearly in extract (4), where Genco did not want to say ‘ruler’—the object that Gescania was looking for—but wanted to specify ‘protractor’, another object that is used to make straight lines. In addition, drawing points to the human ability to utilize physical objects in the environment and recruit them into semiotic resources (C. Goodwin 2018).

In the lost protractor extracts, Genco and his sisters draw on this extensive set of semiotic resources to allow for complex meaning-making as they engage in launching accusations, defending themselves, and building alliances. The diversity of multimodal resources utilized to accomplish this social work is the norm rather than the exception. By opening up our analysis of LANGUAGE to include the communication of individuals with distinct sensory and communicative experiences in the world, our attention is drawn to semiotic resources that are often sidelined in many research studies.

CONCLUSION

In this article, I argue that centering multimodal resources is crucial for understanding contexts characterized by sensory and communicative asymmetries. A multimodal perspective draws attention to Genco's agency and communicative competence, as well as his exclusion from the interactions around him. As seen in the interactions between the siblings, diverse multimodal resources are utilized throughout their interactions. Although Genco has not had access to the linguistic resources of either Spanish or LSP, his family has developed conventionalized local signs in the home. They are also able to capitalize on a variety of bodily and physical resources when communicating with one another. As seen from the excerpts, the siblings use these resources to engage fluently in interactions and accomplish the variety of social projects that are crucial to life at home—negotiating chores, exerting authority, and picking on one another. A focus on multimodality in the interactions of deaf individuals with constrained access to linguistic resources provides a richer understanding of their agency as communicators and of their social lives (e.g. Green 2014, 2022; Moriarty Harrelson 2019; Goico 2019b, 2020, 2021).

Concurrently, this approach highlights the inherent tension in the lives of Genco and other deaf individuals who experience sensory and communicative asymmetries. In focusing on the multimodal nature of interaction, it becomes apparent when choices in communication limit Genco's access to the conversations around him. As mentioned above, the sisters primarily switch to Spanish when communicating directly with one another. Thus, even in moments when Genco is present and an important member of the unfolding social project, he is often cut off from the participation framework and turned into an observer with limited access to the conversation around him. The exclusion of deaf individuals from conversations carried out primarily in an oral/aural modality does not only occur in contexts where deaf individuals have constrained access to the linguistic resources of named languages. Such practices are pervasive in interactions when deaf and hearing individuals are co-present and provide a clear example of 'audism' (discrimination and bias against those who are deaf or hard of hearing) in society (Humphries 1975).

A multimodal perspective is crucial not only to a better understanding of the lives and interactions of deaf individuals, but to our understanding of interaction

and communication more broadly. The focus on multimodality draws attention to the distributed nature of communication across modalities (C. Goodwin 2018). While the focus on deaf-hearing interactions may understandably increase attention to gaze and the manual modality, it also serves to reinforce how embodied interaction stands at the very core of all human interaction (Streeck, Goodwin, & LeBaron 2011). Thus, as researchers, it is critical to our understanding of human language and communication that we broaden our perspective on what counts as relevant to the interaction.

APPENDIX: TRANSCRIPTION CONVENTIONS

CAPS	sign/gesture produced on the hands
<i>italics</i>	spoken or oral production
(description)	describes an action
<#>	where the image with the matching number occurs in the textual transcript
L	utterance produced in overlap with the utterance above
/	two actions are produced simultaneously
POINT.desc	Following a point is a description of what is pointed to. Numbers indicate person reference (e.g. 1 = first person singular; 2 = second person singular)
(#. #)	length of time in seconds between turns

NOTES

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¹The three siblings have elected to use their real names in publications.

²Transcription conventions are given in the appendix.

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