

## Article

# Metalinguistic Discourse in an Emerging Sign Language

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**Abstract:** In this paper, I explore metalinguistic discourse in Zinacantec Family Homesign ('Z sign'), an emergent sign language developed by three deaf siblings and their hearing family members. In particular, I examine how metalinguistic discourse unfolds between a hearing Z signer and various members of her family—including her deaf siblings, her elderly hearing father, and her young hearing son. I do so via a close examination of several snippets of conversation in which the Z signers talk about the "right" way to sign, paying close attention to how they mobilize various semiotic devices, including manual signs, eye gaze, facial expressions, and speech. I aim to understand not only the formal components of metalinguistic discourse in Z sign but also how it functions as a form of social action in this small linguistic community. How do members of this family position themselves and others as (in)competent, (non-)authoritative signers in light of existing social divisions among them? How do they reinforce or challenge those social divisions through metalinguistic discourse? How might metalinguistic discourse contribute to the propagation of emergent linguistic norms throughout the family? I find that a recurrent device for enacting metalinguistic critique among the Z signers is the partial re-production and transformation of others' utterances and other visible actions, manifested in a way that exploits the availability of multiple, semi-independent manual and non-manual articulators in the visual modality.

**Keywords:** homesign; language emergence; metalinguistic discourse; multimodality; language ideology



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## 1. Introduction

On the fourteenth of July 2022, I was working through a lexical elicitation task with Terry and Rita<sup>1</sup> in the well-lit kitchen of their family home in Zinacantán, a predominantly Tsotsil (Mayan)-speaking community in the highlands of Chiapas, the southernmost state of Mexico. Terry and Rita are the hearing sister and niece, respectively, of three deaf siblings who have created their own sign language, dubbed Zinacantec Family Homesign or 'Z sign' for short, over the past five decades (Haviland 2020a). Having grown up with their deaf family members as their caregivers and peers, Terry and Rita are fluent signers of Z sign as well as speakers of Tsotsil. I have been working with this family since 2017 to document the structure of their sign language, paying special attention to the distribution of lexical and grammatical variation (German 2023a, 2023b). Given the nature of this work, the Z signers often engaged in discussions about the "right" way to sign and, importantly, *who* knew the right way to sign.

When I flashed Rita an image of a mango on my laptop, she produced the sign shown in Figure 1: her hand is configured with the four fingers extended and bent at the base knuckle then tapped several times on her lips. Rita also produced a 'chewing' motion by opening and shutting her mouth in time with the taps of her hand against her lips. Terry recognized the sign immediately and provided the appropriate spoken Tsotsil gloss, *manko* ('mango'). When I asked why 'mango' was signed in that way, I received two different responses. Terry responded first, stating matter of factly, "porque ja' yech chalik li [Frank], [Will], me'el" ('Because that's how Frank, Will, and the old lady say it'), referring to her deaf brothers by name and her deaf sister Jane by an age-based epithet. Rita then chimed in to say that the sign represents the way one sucks the flesh off of the fruit.



**Figure 1.** Rita produces the sign MANGO<sup>2</sup> to Terry as part of a lexical elicitation task.

Although Rita’s explanation of the iconicity underlying the sign was what I was actually asking for at the time, Terry’s response encapsulates two important themes that will recur throughout this paper. The first of these is the inherently dialogic nature of language (Bakhtin [1934] 1981; Voloshinov [1929] 1973; Linell 2009; Du Bois 2014). Terry’s attribution of the sign MANGO to her deaf siblings harkens back to Bakhtin’s observation that “the word in language is half someone else’s” (Bakhtin [1934] 1981, p. 293). One aim of this article is to document and describe the semiotically complex ways that the Z signers have developed for quoting and talking about the previous language use of other individuals; I will argue that metalinguistic critique is a powerful tool for propagating emergent linguistic norms among members of this family.

The second theme is how metalinguistic discourse among the Z signers reveals their thinking about their language: how it came to be what it is, how it “should” be, and who has the power to impose upon others their ideas about how it should be. Here, Terry seemingly assigns to her deaf siblings the responsibility of creating signs, suggesting that for her, Z sign in some sense belongs to Jane, Frank, and Will. But despite Terry’s apparent deference to her siblings in this instance, she is undoubtedly a central figure in the Z sign community (which is virtually co-extensive with her immediate family). As the first bimodal bilingual in the family, Terry has throughout her life served as a linguistic bridge between her deaf siblings and hearing Tsotsil speakers who lack proficiency in Z sign, including other members of her family, such as her parents and older sisters (Haviland 2011).

In this paper, I explore how metalinguistic discourse unfolds between Terry and various members of her family, including her deaf siblings, her elderly hearing father, and her young hearing son. I do so via a close examination of several snippets of conversation in which the Z signers talk about the “right” way to sign, paying close attention to how they mobilize the various components of their semiotic repertoires (Kusters et al. 2017), including manual signs, eye gaze, facial expressions, and speech. I aim to understand not only the formal components of metalinguistic discourse in Z sign but also how it functions as a form of social action in this small linguistic community. How do members of this family position themselves and others as (in)competent, (non-)authoritative signers in light of existing social divisions among them (see Haviland 2013b, 2016)? How do they reinforce or challenge those social divisions through metalinguistic discourse? How might metalinguistic discourse contribute to the propagation of emergent linguistic norms throughout the family? I find that a recurrent device for enacting metalinguistic critique among the Z signers is the *re-use with transformation* (Goodwin 2018) of other signers’ utterances and other visible actions, manifested in a way that exploits the availability of multiple, semi-independent manual and non-manual articulators in the visual modality (Dudis 2004; Sandler 2012).

This article proceeds as follows. First, I provide some background on relevant research on emerging sign languages from both psycholinguistic and ethnographic perspectives. I then introduce the Z signers and describe some of the social dynamics of this group that

are relevant to this article. Next, I present several conversations in which the Z signers engage in metalinguistic critique of each other, followed by a conclusion.

## 2. Sign Language Emergence: Psycholinguistic and Ethnographic Perspectives

While virtually all hearing children are exposed to one or more spoken languages from birth, less than five percent of deaf children receive equivalent exposure to a signed language (see [Mitchell and Karchmer 2004](#) for US-based statistics and [Ramsey and Quinto-Pozos 2010](#) on Latin America). Deaf individuals who cannot hear spoken language and who have not been exposed to a conventional sign language due to isolation from an existing community of signers often create their own sign systems to communicate with those around them, usually referred to as *homesign systems* ([Goldin-Meadow and Feldman 1977](#)). Homesign systems exhibit many of the structural properties of conventional languages, including stable lexicons ([Goldin-Meadow et al. 1994](#)), hierarchical structure at the levels of the word ([Goldin-Meadow et al. 1995](#)) and sentence ([Goldin-Meadow 1982](#)), and strategies for negation and question formation ([Franklin et al. 2011](#)). Crucially, the structural properties of homesign systems are not present in the gestures produced by the hearing caregivers of deaf children ([Goldin-Meadow and Mylander 1983](#); [Flaherty et al. 2021](#)). These findings have been interpreted to indicate that the language-like properties of homesign systems are generated by the deaf children themselves. Because these properties develop even in the absence of linguistic input, they have been termed “resilient” properties of language ([Goldin-Meadow 1982, 2005](#)) that may reflect potentially innate features of the language capacity (see [Goico and Horton 2023](#) for a discussion of contested issues in homesign research).

When a critical mass of deaf individuals who do not share a conventional language are brought together, a sign language will likely develop ([Meir et al. 2010](#); [Brentari and Goldin-Meadow 2017](#); [Le Guen et al. 2020](#)). Many scholars categorize sign languages according to the sociolinguistic context in which they develop (e.g., geographical context, population size, ratio of deaf signers to hearing signers, etc.). For instance, [Meir et al. \(2010\)](#) distinguished ‘deaf community’ sign languages ([Meir et al. 2010](#)) and ‘village’ sign languages. Deaf community sign languages emerge in urban contexts, often in connection with the establishment of a school for the deaf where deaf children are brought together. Village sign languages arise in rural communities in which a high incidence of hereditary deafness has resulted in a higher-than-average population of deaf individuals. Other dichotomies that have been proposed include ‘rural’ versus ‘urban’ sign languages ([De Vos and Pfau 2015](#)) and ‘macrocommunity’ versus ‘microcommunity’ sign languages ([Fenlon and Wilkinson 2015](#)), among many others (see [Reed 2022](#); [Moriarty and Hou 2023](#) for in-depth discussions of proposed categorization schemes).

But as researchers have begun to work with an increasingly diverse range of signing communities in recent years, it has become clear that discrete categories like ‘homesign’, ‘village sign language’, or ‘deaf community sign language’ do not adequately capture the full range of deaf people’s communicative practices across different sociocultural contexts ([Nyst et al. 2012](#); [Reed 2022](#); [Moriarty and Hou 2023](#)). Furthermore, linguistic ethnographers have pointed out the ideologically and politically loaded nature of these terminological choices ([Hou and de Vos 2022](#); [Moriarty and Hou 2023](#)). For instance, different signing practices are sometimes placed on an evolutionary cline in which the gestures of non-signing hearing individuals represent non-language, urban/deaf community sign languages represent fully developed languages, and other kinds of sign languages (homesign, village sign languages, etc.) represent intermediate stages between ‘language’ and ‘not-language’ ([Meir et al. 2010](#); cf. [Goldin-Meadow and Brentari 2017](#)). As noted by [Kusters et al. \(2020b, p. 12\)](#), these categories “are infused with ideas about what they are, what they can do, and where, how, and by whom they are used.” As a result, this evolutionary view sometimes leads to a devaluation of many deaf people’s communicative practices ([Nyst et al. 2012](#); [Moriarty Harrelson 2019](#); [Hou and de Vos 2022](#)).

In response to these issues, ethnographic work on deaf individuals' communicative practices has paid close attention to how deaf and hearing individuals navigate communicative interactions in everyday contexts (Green 2014; Kusters 2014; Hou 2020; Goico 2020; Horton et al. 2023; Goico and Horton 2023). The spontaneous interactions that form the primary data in linguistic ethnography lend themselves to the examination of two aspects of communication that are often overlooked in linguistic studies focused on grammatical form, namely, the multimodal and multilingual semiotic repertoires of deaf individuals and their hearing interlocutors (Kusters et al. 2017) and the ideologies that these individuals hold about different forms of communication (Kusters et al. 2020a).

In studies of multimodal communication (e.g., Kusters et al. 2017; M. Goodwin and Cekaite 2018; C. Goodwin 2018; Mondada 2019), careful attention is paid to how individuals deploy different semiotic resources in a simultaneous and sequential fashion, such as speech and gesture. Simultaneity is also recognized as a hallmark of sign language structure (Vermeerbergen et al. 2007; Loos et al. 2022): besides the hands, signers have at their disposal a variety of non-manual articulators, i.e., actions of the head, face, eyes, and torso, which play a variety of functions at all levels of linguistic structure (Crasborn 2006), and even the sub-lexical units of sign languages are realized simultaneously (Brentari 2011). But to focus only on those aspects of communication that are analyzable as part of the grammatical system of a signed language obscures the full range of resources that deaf people have at their disposal as part of their broader semiotic repertoire (Kusters et al. 2017). This repertoire can include, but is not limited to, multiple languages (signed, spoken, tactile, and/or written); gestures; vocalizations; touch; objects in the material surround; and the bodies of other co-present individuals. Deaf and hearing individuals strategically deploy semiotic devices according to the exigencies and affordances of different contexts, often in ways that blur and transcend boundaries between languages and modalities (Green 2014, 2017; Kusters and Sahasrabudhe 2018; Hou 2020; Goico 2020; Horton 2020). By attending to “the elusive but more nuanced and complex elements of spontaneous language use [...] that arises among signers and their interactants in daily life” (Hou and de Vos 2022, p. 121), linguistic ethnographers have been able to showcase the communicative competence—even virtuosity (Green 2017)—of deaf people who have not acquired a conventional sign language.<sup>3</sup>

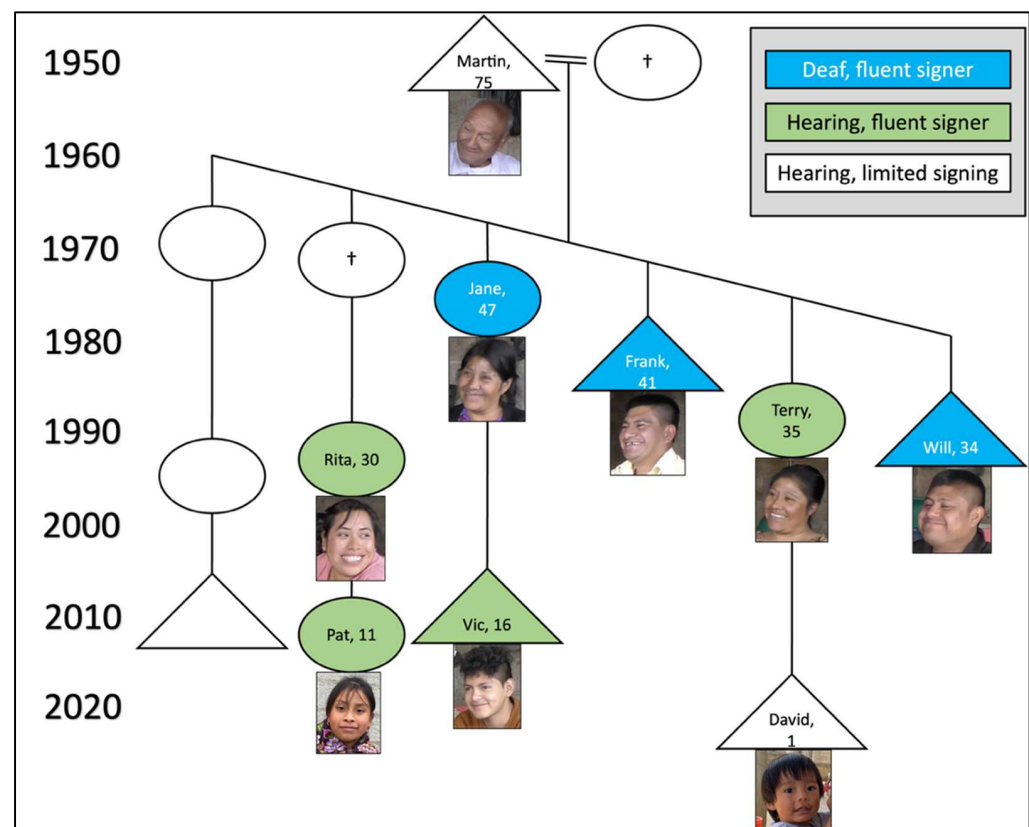
Besides documenting the flexible communicative practices of signers and speakers, linguistic ethnographers have analyzed the language ideologies of deaf and hearing people about different forms of communication in everyday life and the social and political consequences thereof (Kusters et al. 2020a). As so aptly put by Gal and Irvine (2019, p. 1), “Statements about language are never only about language—and they are never only statements”. Ideological statements about language are a key form of metalinguistic discourse through which individuals position themselves and others in their social worlds; they reflect and create social differentiations among language users (Gal and Irvine 2000, 2019). Work on deaf communicative practices has examined ideologies about the value of different sign languages or different styles of signing (Kisch 2008; Kusters 2014, 2020; Green 2014); differences between sign and gesture (Kusters and Sahasrabudhe 2018); differences between signed and spoken language (Kusters 2014; Pfister 2020); the relationship between knowledge of sign language and perceived social, communicative, or intellectual competence (Hoffmann-Dilloway 2011; Haviland 2013b, 2016; Pfister 2020); and the social factors that influence judgments about who is a signer (Hou 2020). Understanding how deaf and hearing people think about sign language and other forms of communication is an essential part of the endeavor to understand the social contexts that give rise to the emergence, persistence, and disappearance of sign languages.

### 3. Z Sign

Zinacantec Family Homesign (‘Z sign’) is a sign language developed by a single extended family from Zinacantán, a Tsotsil (Mayan)-speaking community of the highlands of Chiapas, Mexico (Haviland 2020b). A skewed kinship diagram for the family is given



in Figure 2. Each member is identified by a pseudonym, his or her age as of 2023, and a rough indication of his or her signing ability. Furthermore, each signer is positioned to align with his or her year of birth as indicated along the vertical timeline on the left side of the diagram. The advantage of a skewed kinship diagram, compared to a conventional “flat” diagram, is that it provides a visual representation of age-based cohorts of signers (Kisch 2012). This can help to illustrate the history of Z sign by showing when each signer was born. From this information, one can also roughly infer what the language-learning environment of each signer in the family looked like (e.g., the number of older signers and peers he or she had access to from birth).



**Figure 2.** A skewed kinship diagram displaying the members of the Z sign family, identified by hearing status, signing proficiency, and age as of 2023. Each individual’s year of birth is indicated by his or her vertical position along the timeline on the left side of the image.

Z sign originated with the first deaf individual in the family, Jane, born in 1976 (Haviland 2011). Unable to hear the spoken Tsotsil of the household, Jane began to develop homesigns to communicate with those around her. The second deaf sibling, Frank, was born in 1982. Six years later, a hearing sister, Terry, was born, who reportedly began to sign before she began to speak (Haviland 2011). The final deaf sibling, Will, was born in 1988, thirteen years after Jane. Four other hearing members of the family have grown up, or are growing up, with Z sign as a home language. Rita is a niece of the four signing siblings and acquired Z sign from early infancy. The next hearing signer is Jane’s son, Vic, who acquired Z sign from birth.<sup>4</sup> Rita’s daughter Pat has also grown up with the deaf signers as caregivers and has become a proficient signer. Most recently, in early 2022, Terry gave birth to a hearing boy who may also become a fluent signer: by age one and a half, he had already begun to sign but not yet to speak, save for some simple vocalizations. The older members of the family, such as the deaf siblings’ father Martin and their older sisters, are not proficient signers, and they struggle to understand what the fluent signers say to each other (Haviland 2020b).

It is important to note how Z sign differs from the “prototypical” homesign systems developed by single deaf individuals. The latter are often framed as the sole creation of those individuals, for two reasons. First, the structure of homesign systems is absent from the gestures of the deaf individuals’ hearing caregivers (Goldin-Meadow and Mylander 1983; Flaherty et al. 2021). Second, the hearing caregivers of homesigners may exhibit poor comprehension of their signing (Carrigan and Coppola 2017). Because homesigners may not have any interlocutors with whom they can engage in fluid conversation, they are producers of their system but not receivers of it (Morford 2002). The lack of reciprocity in their communicative interactions may be a significant constraint on the development of their homesign systems (Morford and Hänel-Faulhaber 2011). This would have been Jane’s situation for the first six years of her life. By contrast, Frank had the benefit of reciprocal communication with Jane from birth. Will had access to Jane and Frank as signing models, as well as his hearing sister Terry as a signing peer. These differences in early language experience likely contribute to grammatical differences in their sign systems (German 2023a, Forthcoming).

It is also significant that there are several fluent hearing signers who have been exposed to Z sign from infancy. This increases the number of communication partners with whom the deaf siblings can engage in fluid conversation. It is thus highly likely that the hearing signers have also contributed to the development of Z sign (cf. Reed 2022 on the role of hearing signers in the emergence of “nucleated sign networks” in Papua New Guinea). Given the importance of reciprocal communicative interaction in language emergence, I view Z sign in its present form as the joint creation of the deaf and hearing signers.

Research on Z sign was initiated by John Haviland in 2008. Haviland’s research has shed light on some of the emergent grammatical properties of Z sign, including morphological and syntactic means of distinguishing nouns from verbs (Haviland 2011, 2013c); spatial language (Haviland 2013a); the grammaticalization of gestures and facial expressions drawn from the hearing community (Haviland 2015, 2019); and the role of eye gaze in turn-taking (Haviland 2020a).

Haviland has also examined the Z signers’ ideologies toward linguistic variation and how these relate to social divisions within the family. The Z signers have strong beliefs about what constitutes correct signing and who in the family has the authority to enforce norms of sign usage (Haviland 2013b, 2016). Jane’s relatives call her a *chich me’el*—a “foolish (or linguistically incoherent) old lady” (Haviland 2013b, p. 188)—who neither expresses herself clearly nor understands what others say.<sup>5</sup> By contrast, her youngest deaf brother Will is considered a skilled signer (as I will show below), and he is regarded as *p’ij* ‘clever’ (though also *pukuj* ‘ill-tempered’; Haviland 2013b, p. 162). Thus, in this family, as in other signing communities, ideologies about linguistic competence are linked to ideologies about intelligence.

It is not only her hearing family members who hold this view of Jane: a similar pejorative epithet also exists in Z sign. It is identical to a gesture that in some cultures is recognized as meaning ‘crazy’ (including much of Latin America; Meo Zilio and Mejía 1980). As illustrated in Figure 3, the sign is produced by tracing circles around the temple with the index finger. The two tokens of the sign shown in Figure 3 come from a spontaneous conversation in which Rita and Frank simultaneously produced this sign after a miscommunication with Jane. When I later reviewed the video recording with Rita and asked her what this sign meant, she provided me with several Tsotsil and Spanish glosses: *mu xul ta sjol* ‘she doesn’t remember; she can’t bring it to mind’ (lit. ‘it doesn’t arrive to her head’), *loco* ‘crazy’, *no sabe* ‘she doesn’t know’, *borracho* ‘drunk’, and *chich* ‘foolish’. The Z signers also apply this sign to themselves, for instance, when they realize they have misreported the details of an event, suggesting that another potential gloss might be ‘confused’. Other deaf and hearing members of the family are also sometimes called *chich* or CRAZY in specific instances, but it is only Jane who is framed as characteristically *chich*.



**Figure 3.** Rita and Frank simultaneously call Jane CRAZY ‘crazy, confused, foolish’.

During my fieldwork in the summer of 2023, Rita provided me with her evaluation of the signing skills of different members of the family. This was prompted by Rita’s inability to understand the signing of her daughter Pat during an elicitation task. When I finally revealed that Pat was trying to convey ‘squirrel’, Rita told Pat that she did not sign it correctly. Terry then walked into the room, and Rita turned to Terry and described how Pat signed ‘squirrel’. Terry asked Pat where she learned to sign ‘squirrel’ in that manner, and Pat said she learned it from Jane. Terry then scolded Pat in Tsotsil for learning to sign from Jane. Since I have only an elementary command of Tsotsil, I asked Rita to confirm, in Spanish, my understanding of what had just happened. She recounted the discussion as follows, providing some additional commentary:

Es que le estoy diciendo a mi tía que no me explica como debe de ser. Y le pregunta de dónde aprendió así. Y ella dice que de Me’el. Entonces, Me’el, casi no entendemos a veces la forma como se comunica porque lo dice muy diferente. Por eso a veces cuando nos pone a platicar con nosotros, le digo “sí, sí, sí” pero no le entendí nada. Porque lo dice a su manera. Pero ahí nosotros hemos aprendido de los dos tíos. Igual nosotros así nos comunicamos. Sí, tal vez inventemos ciertas cosas, pero sí nos entendemos de que se trata. . Igual mis tíos, te digo, entre ellos mis tíos dos, también lo manejan de la cara, los ojos. Entonces ya saben de que se trata. A veces también se comunican con nosotros, pero a veces yo no lo entiendo [here, Rita signs WHAT? WHAT?]. Pero [Jane] es el único diferente de la familia que no entendemos. Pero ella aprendió de ahí y por eso yo no le estoy entendiendo.

I’m saying to my aunt [Terry] that [Pat] isn’t explaining it to me the way it should be. And [Terry] asks [Pat] where she learned [to sign] like that. And she says, “from Me’el” [‘Old Lady’, i.e., Jane]. So, Me’el, sometimes we almost can’t understand the way that she communicates because she says things very differently. So sometimes when she starts chatting with us, I tell her “Yeah, yeah, yeah” but I don’t understand her at all, because she says things in a different way, in her manner. But we [Rita and Terry] have learned from the two uncles [Frank and Will], so that’s how we communicate. Sure, sometimes we might make certain things up, but we understand what it’s about. . Likewise my uncles, I mean, between my two uncles, they manage it [communication] with their face, their eyes. Then they know what it’s about. Sometimes they communicate with us, but sometimes I don’t understand it [here, Rita signs WHAT? WHAT?]. But

[Jane] is the only different one in the family that we don't understand. But she [Pat] learned from there [Jane] and for that reason, I'm not understanding her.

Rita's evaluation of her own and her family members' signing skills reveals an "ideological assemblage" (Kroskrity 2018; Kusters 2020), or a set of interlinked ideologies, that frame language use in the family. First, Rita positions Jane's signing as unintelligible due to its idiosyncrasy. This implies that Frank, Terry, Will, and Rita share the same way of signing, which enables them to understand each other even when they have to "make certain things up", i.e., innovate ways to discuss concepts for which there are no conventional Z signs. These ideologies of signing skills are related to views about the deaf siblings' overall intelligence mentioned above (cf. Pfister 2020).

Rita links her assessment of her deaf relatives' signing skills to an account of how different hearing members of the family came to be signers. She and Terry learned to sign from Frank and Will, while Pat learned from Jane. She explicitly states that the variation in signing ability observed among the deaf siblings carries over to the hearing members of the family. Accordingly, Terry and Rita sign like the deaf brothers (intelligibly), while Pat signs like Jane (unintelligibly). From Rita's account, one might posit a hierarchy within the family based on signing skill: Frank and Will > Terry and Rita > Jane and Pat.

Another important observation must be made about how Rita frames and responds to non-understanding. Rita claims that she sometimes does not understand Jane because her signing is "different". But she also notes that she cannot always understand Frank and Will, specifically when they communicate "with their faces, their eyes." This refers to a secretive style of signing that relies primarily on facial expressions with minimal use of manual signing; Terry similarly describes it as *chk'opoj ta sat no'ox* 'speaking with the face alone' (Haviland 2020a, p. 21).<sup>6</sup> Rita does not express a negative view of this way of signing. On the contrary, she appears to view it as a more sophisticated code to which she does not have access. What is more, Rita's statement that "I just tell [Jane], 'Yeah, yeah, yeah'", suggests that Rita is not interested in understanding Jane. By contrast, she reports that she does try to understand Frank and Will's 'face talk': while she said, "sometimes I don't understand it", she furrowed her brow, lifted her chin, and signed WHAT? WHAT?, perhaps a simulation of how she would ask her uncles to clarify what they are signing. Thus, the perceived idiosyncrasy of Jane's signing is perhaps not the only reason (or even the primary reason) that Rita does not understand her aunt. As pointed out by Green (2014, p. 2), "the production of deaf people as intelligible signers requires willing addressees". Because Jane's addressees are frequently unwilling to understand her signing, she is vulnerable to being rendered unintelligible (cf. Green 2022).

These ideologies likely interact with other factors like gender, audiological status, and communicative asymmetries. First, gender roles influence who interacts with whom, how frequently they do so, and the domains of life in which they have the opportunity to use Z sign. Although in Zinacantán men and women are conceived of as playing complementary social roles, the reality is that "men's interests, autonomy, and life prospects enjoy greater scope than do women's" (Devereaux 1987, p. 89). For instance, men have greater opportunities to work outside of the home, and they can participate in the ritual cargo system (though they require the assistance of their wives to be able to participate), which is a source of prestige (Cancian 1965).<sup>7</sup> The deaf brothers work together outside of the home, sometimes locally and sometimes traveling long distances for extended periods of time (e.g., to the state capital Tuxtla Gutiérrez to sell flowers). They thus have extensive experience using Z sign in a wider range of contexts to discuss a more diverse array of topics. Frank is quite outgoing, and he has completed a rather prestigious cargo. As a result, he has an extensive network of hearing contacts outside the family, some of whom he chats with remotely via video calls on his mobile phone. The two brothers have a very close relationship, and the vast common ground that they share surely supports their ability to obscure their conversations from other members of the family by "talking with the face alone" (Haviland 2020a, p. 21), as described above.



By contrast, women are expected to maintain the home, although the production of textiles and food represents two increasingly common means of economic participation for women (López Gómez 2022), including the women of the focal family of this article.<sup>8</sup> Thus, Jane, Terry, and Rita spend most days maintaining the home together. Terry and Rita chat continually in Tsotsil about any number of topics, conversation that is inaccessible to Jane. Most of the signed communication they direct to Jane consists of directives related to domestic tasks—“light a fire”, “make coffee”, and “bring the pot that is this big” —or other need-to-know information. The subordination of women in Zinacantán, combined with Jane’s lack of access to Tsotsil, positions her at the intersection of two axes of oppression.

At least as important as the gender distinction are the communicative asymmetries between the deaf and hearing signers. The deaf siblings do not have access to the languages of wider communication, namely, Tsotsil in Zinacantán and Spanish in Mexican society more broadly. Terry and Rita do have access to those languages (Rita has greater access to Spanish than Terry, in part due to her formal schooling), which provides them with a considerable degree of power in that they act as gatekeepers of what information the deaf siblings can receive, choosing when to intervene in the deaf siblings’ interactions with hearing non-signers, and when they do so, what information to convey.

Thus, even within a group as tight-knit as these five individuals, there are clear divisions among them in terms of social experience and sensory access that are linked to differences in communicative repertoire. The tensions that arise from these power dynamics serve as the backdrop for the vignettes we examine below in which Terry is either the target or instigator of metalinguistic critique.

#### 4. Terry’s MANGO: Enforcing Norms of Articulation via Re-Use with Transformation

Let us revisit the sign MANGO, with which we became acquainted in the introduction to this paper. On 17 July 2022, it was Terry’s turn to describe the same image of a mango to Frank (note that this is just three days after Terry told me that this sign is simply “how Frank, Will, and the old lady say it”). After viewing the image on my laptop screen, Terry made eye contact with Frank and then produced the sign MANGO. However, her articulation of the sign on this occasion diverged from the more typical form demonstrated by Rita above in Figure 1. Terry began with her hand at her mouth (Figure 4a). Her first three fingers were bent at the base joint as expected, but unexpectedly, her little finger was slightly raised. She then produced a single movement of the hand outward from the mouth (Figure 4b), rather than the usual multiple movements of the hand toward and making contact with the mouth. Finishing her response, Terry folded her arms confidently (Figure 4c).<sup>9</sup> Frank, though smiling and maintaining eye contact with his sister, remained completely immobile (Figure 4d), a posture which has been dubbed the “freeze look” (Manrique and Enfield 2015, a form of other-initiated repair that signals non-comprehension. Terry raised her eyebrows and nodded once to check Frank’s comprehension (Figure 5a) and then repeated the sign MANGO exactly as she had the first time (Figure 5b,c). Frank responded by squinting his eyes and nodding repeatedly to indicate that he now understood (Figure 5d).



**Figure 4.** (a,b) Terry signs MANGO in an idiosyncratic manner then (c) crosses her arms. (d) Frank remains completely motionless, signaling non-comprehension.



**Figure 5.** (a) Terry checks Frank’s comprehension by raising her eyebrows and nodding once before (b,c) repeating her unconventional version of MANGO. (d) Frank squints and nods in apparent comprehension.

However, when I presented Frank with the matching array, he selected the image of a banana, rather than that of the mango. I then pointed to the image of the banana with raised eyebrows to indicate my own surprise at his response and to ask Frank if he really intended to point to that image.<sup>10</sup> When he nodded in confirmation, I indicated that this was not the correct image with a wagging index finger NO. Terry clarified by signing MANGO once more, this time with the more conventional articulation (Figure 6a). She closed her turn at talk by tilting her head back and furrowing her brows at Frank (Figure 6b), a facial expression that Haviland (2019) describes as conveying uncertainty, doubt, or non-comprehension. In this case, this expression seems to convey Terry’s confusion and frustration about why Frank did not understand her. Frank, having realized what his sister had really intended to convey, screwed his eyes shut, opened his mouth, tilted his head back, and produced a sign that resembles scratching one’s temple (Figure 6c). This sign is similar to the sign CRAZY (Figure 3) in that it seems to depict a “scrambling” of one’s thoughts; thus, one might tentatively translate it as “I got mixed up”.<sup>11</sup> Terry responded by lowering her jaw and directing a playful sidelong glance (Haviland 2019) at her brother (Figure 6c). I again presented Frank with the matching array, and this time he correctly pointed to the image of the mango.



**Figure 6.** (a) Terry produces MANGO for a third time, now with the conventional articulation, before (b) launching a frustrated, interrogative facial expression at Frank. (c) Frank closes his eyes tightly, smiles, and produces a sign that resembles scratching his temple (perhaps meaning “I got confused”). (d) Terry responds with a playful sidelong glance.

Though Frank seemed to acknowledge that he had some part in the misunderstanding (based on the “scratching temple” sign in Figure 6c), he was unwilling to take all the blame. Re-establishing eye contact with Terry, he mocked the way she signed MANGO. He did so first by raising his eyebrows, tensing his cheeks, and baring his teeth (Figure 7a). Then, maintaining this facial expression, he broke eye contact, shifted his eye gaze to the left, and imitated Terry’s initial, non-normative production of the sign MANGO, i.e., with a single outward movement and lips pressed together (but without the raised little finger; Figure 7b). Next, without changing the configuration of his signing hand or its position in space, Frank again made eye contact with his sister (Figure 7c). The facial expression he produced in Figure 7a–c seems to encode his stance toward the manual sign—namely, that he deemed it mock-worthy. He then produced what he considered to be the correct way to sign MANGO, which in this case includes not only a chewing motion synchronized

with the taps of the hand against the mouth but also a “scrunched” facial expression that demonstrates how one might react to the often-sour taste of the fruit (Figure 7d). Finishing the sign, he dropped his hand, relaxed the “sour” face into an affectionate smile, and re-established eye contact with this sister (Figure 7e). Altogether, Frank’s performance might be roughly translated as, “What a ridiculous way you signed ‘mango’! *This* is how it is signed!”. I finally revealed to Terry that Frank thought she had signed ‘banana’, to which she quickly responded NO, produced with another sideways glance at her brother.



**Figure 7.** (a–c) Frank mocks Terry’s idiosyncratic rendition of MANGO, then (d) demonstrates the correct form, and (e) smiles while returning his hand to rest position.

Although this exchange unfolded over the course of only 17 s, it reveals a considerable degree of semiotic complexity that is not apparent if we consider only the information conveyed by the hands, which includes only three distinct signs or sign types: MANGO (four tokens, counting both Terry’s and Frank’s variants); NO (two tokens); and pointing gestures directed toward images displayed on my laptop (three tokens). However, a closer examination reveals that the face and eyes are doing as much, if not more, communicative work than the hands, challenging the common misconception that sign languages are primarily manual languages (cf. Pfau and Quer 2010, who make a similar point).

Haviland (2019) catalogs a number of distinct facial expressions in Z sign that signal affective or epistemic stance, and we see several of these at play here too. Consider how Terry and Frank use their faces to track each other’s understanding. In Figure 5, after Terry first signs MANGO, she asks Frank if he understands by raising her eyebrows and producing a single, short nod. Frank signals his non-comprehension via a freeze look (Manrique and Enfield 2015). After Terry repeats MANGO, Frank indicates his comprehension by squinting, smiling, and producing several small nods. When it was revealed that Frank had actually *not* understood, Terry expressed her perplexity by tilting her head backward and furrowing her eyebrows at Frank. Here, the two signers manage the interaction through facial expressions produced in the absence of any concurrent manual signing (although they are interspersed between manual signs), much as in other signed and spoken languages (Lutzenberger et al. 2024).

Facial expressions can also work in tandem with simultaneously articulated manual signs. This is apparent in Frank’s parody of Terry’s rendition of MANGO, which he produces with a facial expression that indicates his own negative opinion of her sign (namely, that he considered it to merit ridicule; Figure 7a–c). In this case, there is a transformative relationship between the non-manual and manual components of the message: the former is used as a means of commenting upon the latter. Here, Frank has partitioned his body (Dudis 2004) into two communicative channels: one that animates (Goffman 1979) the manual component of a previous utterance by Terry and a second that non-manually expresses Frank’s stance towards the quoted material.

The way that Frank partitions his body here evokes a ‘blend’ of the physical signing space with a virtual narrated space (Fauconnier and Turner 1998; Dudis 2004; cf. Haviland 2020a). When Frank imitates Terry’s variant of MANGO, he partially blends his own body with a protagonist (Terry) in a narrated space. However, the facial expression with which Frank evaluates Terry’s sign is produced from his own perspective in the “real” signing space, outside of the blend with narrated space in which his hand partakes. Note that when Frank subsequently demonstrates his variant of the sign MANGO, the ‘sour’ expression he



produces appears to be a lexically specified (but often elided) component of the sign itself, rather than an independent facial expression with a metalinguistic function. Thus, how the body is partitioned shifts continuously throughout discourse, and signers must keep track of this in order to successfully interpret signed utterances. For this, eye gaze is crucial.

The role of eye gaze in Z sign is strikingly similar to what has been described for other signed languages (Baker 1976, 1977; Bahan and Supalla 1995; Bahan 2008; Kaneko and Mesch 2013). A conversational turn in Z sign generally begins and ends with eye contact, since signers first need to establish mutual attention and finally check that their message has been apprehended; this seems to be equivalent to what Bahan and Supalla (1995) describe as ‘narrator gaze’ in ASL: “gaze to the audience. . .has a specific function, that is, to mark the signer’s role as narrator” (p. 178). In between these periods of eye contact, signers shift their gaze to different points in the signing space. This includes the use of eye gaze as a device for pointing to physically present individuals or entities, as well as what Haviland (2020a) calls ‘gazing to nowhere’. This refers to a period in which a signer gazes at an empty point in space when recounting narrated or imagined events and is reminiscent of the ‘character gaze’ that Bahan and Supalla (1995) describe for ASL: “a storyteller might gaze away from the audience and assume a character’s gaze while signing” (p. 178). It is to ‘nowhere’ that Frank gazes when he re-enacts Terry’s production of MANGO. He thereby signals that he is shifting into a narrated space in which he has assumed the role of a character, namely, Terry, rather than producing the sign MANGO simply to refer to mangoes. After this re-enactment, he briefly makes eye contact with Terry again (Figure 7c) before demonstrating how MANGO *should*, in his opinion, be articulated (Figure 7d; Frank shuts or nearly shuts his eyes as part of the “sour” face that accompanies his version of this sign, so the direction of his gaze cannot be determined). After this demonstration, he makes eye contact once again.

Haviland observes that turn-taking in Z conversation “arises in part from patterns of alternating attention in the interaction” (Haviland 2020a, p. 63). Based on this brief exchange, and others we will examine below, I would extend this observation to turn-internal structure as well: gaze shifts aid in parsing turns into smaller “gesture-units” that make up utterances (Kendon 2004, 2015; Haviland 2014). In Frank’s correction of Terry’s signing, there are three periods of eye contact: one at the beginning, one between his imitation of her production and his demonstration of the ‘correct’ form, and one at the end. Thus, his utterance can be divided into two phrases corresponding to the imitation and subsequent demonstration, bound and separated by periods of eye contact. These shifts in eye gaze align with manual and non-manual prosodic cues that are known to mark phrase boundaries in other sign languages (Nespor and Sandler 1999; Brentari and Crossley 2002; Sandler 2010). For instance, the ‘mocking’ facial expression (Figure 7a–c) aligns rather neatly with the onset and offset of both the eye-gaze shifts and the manual sign. Additionally, Frank maintains the location and configuration of his signing hand throughout the second period of eye contact between the re-enactment of Terry’s variant of MANGO and the demonstration of his own version—an instance of phrase-final lengthening.

The fact that the Z signers partition their bodies is striking, as it demonstrates that the functions of non-manual signals are much more complex in Z sign than has been reported in studies of simultaneity in emerging sign languages (Sandler et al. 2011; Sandler 2012; Dachkovsky et al. 2018, 2023; Dachkovsky 2022). For instance, Sandler (2012) states that the oldest signers of Al-Sayyid Bedouin Sign Language (i.e., the four deaf siblings who created the initial homesign system) do not use non-manual signals for grammatical functions. Rather, they encode linguistic information entirely through manual signs, interspersed between stretches of what Sandler calls “pantomime”, defined as “an expression in which the hands represent the hands and the body represents a body in an event being depicted” (Sandler 2012, p. 293).<sup>12</sup> The three deaf Z signers resemble the oldest ABSL signers in that they are also a group of siblings who created a family sign language. But to describe the Z signers’ use of the body as “pantomime” obscures the semiotic complexity of how they deploy their manual and non-manual articulators. When Frank critiques Terry’s MANGO,



he does indeed use his hand to represent a hand, but he does not use his face to represent a face. Rather, he uses his face to produce a metalinguistic evaluation of the manual sign. This is not an exceptional or idiosyncratic use of facial expression. As I will show, other signers produce metalinguistic critiques in the same way, both in the context of elicitation (see Figure 17 below) and in spontaneous conversation (Figure 27 below). Thus, the Z signers partition their bodies in ways similar to signers of larger and more established languages (Dudis 2004), treating different bodily articulators as distinct semiotic channels that conspire to convey a complex message.

Frank's parody of Terry's MANGO is a clear example of re-use with transformation (Goodwin 2018), whereby an individual appropriates semiotic material produced by others and re-purposes it for new social ends. Frank reproduced and recontextualized Terry's sign in order to contrast it with the "correct" way of articulating the sign. Frank thus positioned himself as a linguistic authority, someone who could assert his ideas about standards of form in Z sign; he simultaneously positioned Terry as someone whose signing he could correct.

This basic means of metalinguistic comment—a partial reproduction of another's previous utterance overlaid with an affective or stance-taking facial expression—will recur throughout the conversational exchanges examined in this article. Next, we will examine a more complex series of exchanges, spread out over the course of more than one year, that shows how metalinguistic critique can serve as a vehicle through which a sign used by one individual, but not yet shared by all signers, can be propagated throughout the community.

### 5. Frank's ARMADILLO: The Propagation of a Sign

The previous example featured a sign that was already more or less conventionalized among the Z signers. Now, we will examine the propagation of a sign that not all of the Z signers shared at the time of elicitation. On 16 July 2022, Frank and Terry were participating in another lexical elicitation task, with Frank as the describer and Terry as the matcher. When I showed Frank an image of an armadillo, Frank responded with a sequence of signs describing the anatomy of the animal, plus a sign that depicts their typical burrowing action (Figure 8). This is the key sign for this discussion, and I will gloss it as ARMADILLO.<sup>13</sup> It involves moving the hand downward, and sometimes slightly forward, to represent an animal entering an underground burrow; the signer's eye gaze tracks the path of the hand. Frank produced this sign twice, as the first and last of the sequence. When I asked Terry to identify the corresponding image on my laptop screen, she correctly pointed to the image of the armadillo.



**Figure 8.** Frank signs ARMADILLO as part of a description of an armadillo.

For the next day's elicitation session (17 July), Terry and Frank had switched roles again. When it came time for Terry to describe the same image of an armadillo, she

also referred to the animal's characteristic anatomical attributes. However, she did not produce the sign ARMADILLO that Frank had used the day before. When I presented Frank with the matching array, he pointed to the image of the armadillo without hesitation. Nonetheless, he admonished Terry to sign ARMADILLO. Beginning by casting his sister an irritated grimace (Figure 9a), he signed ARMADILLO (Figure 9b) and then pointed through the side door toward the ground outside to indicate where the animal might be found (Figure 9c).<sup>14</sup> As he dropped his hand, he glanced sideways at his sister, still maintaining a facial expression of frustration (Figure 9d). Terry responded by producing the sign ARMADILLO with a furrowed brow (Figure 9e), a query which might be interpreted two ways (I have unfortunately not had the opportunity to ask Terry to translate this utterance). First, she might have been asking whether this was indeed the right sign for 'armadillo'. Alternatively, she might have been questioning whether it was true that armadillos burrow underground. Terry has presumably had less experience with armadillos than her brothers, who have had some experience with farming. Zinacantec farmers use armadillo shells as containers for corn kernels (as do farmers in other indigenous Mexican communities; Starr 1908).<sup>15</sup> Thus, while armadillos are not uncommon animals in Zinacantán, Frank might have had more opportunities to observe armadillos than Terry (who could not recall the Tsotsil name for the animal, *kapon chon*, when I asked her about it).<sup>16</sup> In either case, Frank nodded affirmatively and explained that one can observe armadillos outside (Figure 10a–c: SEE point:outside ARMADILLO); he also added that some people eat them (Figure 10d: EAT-MEAT). Terry averted her gaze and replied DISGUSTING (Figure 10e).



**Figure 9.** (a) Frank grimaces, before telling Terry that she should have mentioned that armadillos are seen burrowing outdoors. He signs (b) ARMADILLO, (c) point:outside. (d) Then, he launches a critical sideward glance at her. (e) Terry queries Frank's sign by repeating the sign ARMADILLO with furrowed brows.



**Figure 10.** Frank says that armadillos can be observed burrowing into the ground outside: (a) SEE, (b) point:outside, (c) ARMADILLO. (d) He adds that they can also be eaten (EAT-MEAT). (e) Terry signs DISGUSTING.



This exchange illustrates how the Z signers deploy facial expressions to convey the pragmatic force of their utterances. In Figures 9 and 10, we see the sign ARMADILLO produced twice by Frank and once by Terry, each time with a distinct facial expression. Frank first produced the sign (and indeed the entire utterance in which the sign was embedded) with an aggravated grimace, which signals that his utterance is not a mere statement about what armadillos do but a metalinguistic command that Terry should have used the sign Frank demonstrates. In response, Terry repeated the very same sign with a furrowed brow, resulting in a question about the appropriateness of the sign (or perhaps whether it represents what armadillos actually do). Frank confirmed that his sign was appropriate by repeating it with a neutral facial expression.

We can also see here that Frank once again asserted the authority to tell Terry how to sign. While Terry did question whether Frank's sign was appropriate, she did not contest his authority to tell her how to sign. However, in an interesting twist, we will see in the following series of exchanges that Terry not only adopts this sign but takes it upon herself to spread it to other members of the family.

The next day, 18 July, I asked Martin to describe the same image of the armadillo to his deaf daughter Jane.<sup>17</sup> Note that Terry was standing behind me, observing the elicitation session. Martin described it by depicting the animal's size and pointy ears. However, Jane incorrectly indicated 'turtle' on the matching array. Terry stepped in to rectify the misunderstanding. She first scolded Jane for not understanding, telling her in Z sign that the correct answer was SHELL DIG ARMADILLO "the one with a round shell that digs and burrows underground" (Figure 11a–c), followed by a wide-eyed sideward gaze, perhaps indicating playful criticism (Figure 11d). Jane's initial response was to smile abashedly and avoid Terry's gaze by shifting her own gaze in various directions (Figure 12). Then, Jane signed ROUND-OBJECT (Figure 13a) while gazing at her father and pointed at him, which is perhaps a remark that he should have mentioned the shape of the animal (Figure 13b).



**Figure 11.** Terry tells Jane that the correct answer was 'armadillo'. (a) SHELL (b) DIG (c) ARMADILLO ("the one with a round shell that digs and burrows underground"). (d) Terry then gazes at Jane sideways.



**Figure 12.** Jane shifts her gaze to and fro to avoid Terry's playful, yet critical, gaze.



**Figure 13.** (a) Jane signs ROUND-OBJECT and then (b) points at Martin.

Martin was gazing at Jane when she signed this, but Jane had already withdrawn her gaze, thereby precluding a response from her father. Moreover, Terry had also begun to admonish him in spoken Tsotsil, “Chavak’be yiluk uke: Ja’ li xi ch’och xi ta yut balamile, chavut!” (‘You should show it to her like this, too: it’s the one that goes underground like this, you should say!’). As she produced the underlined portion of the spoken utterance, she repeated the signs DIG and ARMADILLO, producing a code-blend (the simultaneous production of spoken and sign languages; Emmorey et al. 2005). The word *xi* ‘this way; like this’ (which appears before and after the verb *ch’och*, meaning ‘enter’ or ‘go into’) serves to link her spoken words with her manual signs; that is, the signs DIG ARMADILLO show how the animal “goes into” (*ch’och*) its underground burrow. There is also a striking temporal synchrony between the two modalities: the first *xi* co-occurs with the sign DIG and the second with the sign ARMADILLO.

Martin laughed and confirmed that “Ja’ li ‘oy xch’en ta yut balamile” (‘It’s the one that has its cave underground’), while producing a two-handed version of the sign ARMADILLO in which he moves both of his hands forward along a linear path (Figure 14). Terry responded by demonstrating again the correct, one-handed version of the sign, along with another spoken admonition that *this* is how he should produce the sign: “Xi ch’och xi to une!” (‘It goes in like this!’) (Figure 15). Notably, she began this demonstration with her gaze directed toward Martin (Figure 15a), but she ended it by gazing at Jane, thereby including her sister as an additional recipient of this second admonishment (Figure 15c).<sup>18</sup>



**Figure 14.** Martin produces a two-handed representation of how armadillos crawl into their burrows.





**Figure 15.** (a) Terry gazes at her father, (b) demonstrates the sign ARMADILLO, and then (c) gazes at Jane.

It is here that we see Terry powerfully assert her authority as a signer. She assigns responsibility to both Jane and Martin for their roles in the miscommunication: the former for not understanding, and the latter for not adequately describing the elicitation stimulus. Terry's performance reflects her position as an interpreter for her hearing and deaf family members. As the only participant in this exchange with fluency in both Z sign and Tsotsil, she is well-positioned to explain to Martin and Jane why their attempt at communicating about armadillos failed. Martin is not a fluent signer, so it is not surprising that Terry feels confident in correcting him. But what of Jane, who, as a deaf signer, might in theory be able to claim more authority as a signer than Terry? Because Jane is perceived by her siblings to be communicatively incompetent, she lacks the power to defend herself against their attacks, let alone assert herself as an authority over them (Haviland 2013b, 2016). However, Jane does critique her father's signing.<sup>19</sup> She may have felt able to do so, because he has limited signing skills. Furthermore, she and her father have a rather jovial relationship, so he is unlikely to respond to her critique with irritation.

It is important to note that Terry formulates her critique using a sign that Frank had admonished her to use just one day earlier, although here, she does not acknowledge the source of the sign. But we will see in the following exchange that Terry formulates her metalinguistic attacks in a rather different manner when targeting an individual who is a more authoritative signer than herself: her younger deaf brother Will.

Nearly three weeks later, on the fifth of August 2022, I asked Will to describe the image of the armadillo to Terry. Will described the animal's long ears and pointy snout and mentioned that they dig. To my surprise, Terry glossed Will's description to me as *pato* 'duck', perhaps having misinterpreted the sign DIG (Figure 16) as depicting the waddling of a duck. I indicated that her guess was wrong and told Will that Terry had thought he meant 'duck'. After some additional negotiation with Will, Terry finally recognized that Will was describing an armadillo.

Terry then launched into a forceful critique of how Will signed 'armadillo' (Figures 17 and 18). With her eyes widened and her jaw lowered, she pointed towards the bathroom where Frank was bathing (Figure 17a), produced his sign name (Figure 17b), and then pointed once more to the bathroom while simultaneously nodding once (Figure 17c)—apparently establishing 'Frank' as the topic of her utterance. She then cast her gaze downward and re-produced Frank's sign ARMADILLO (Figure 17d,e): "As for Frank over there, he signed ARMADILLO!".



**Figure 16.** Will signs DIG as part of a description of armadillos.



**Figure 17.** Terry tells Will about Frank's sign for 'armadillo'. (a) point:Frank, (b) FRANK, (c) point:Frank, (d,e) ARMADILLO.



**Figure 18.** (a) Terry points to Will with a mocking or critical facial expression. (b) Terry imitates Will's sign DIG, maintaining the mocking expression. (c) Terry points again to Will, now with a furrowed brow indicating her confusion.

Returning her gaze to Will, she lowered her jaw and turned the corners of her mouth down. Maintaining this facial expression, which seems to convey an attitude of mocking, she pointed to Will (Figure 18a) and imitated the way he signed DIG while also gazing down at her signing hands (Figure 18b). She then re-established eye contact with Will, knit her brows as if she were confused, and then pointed to him once more (Figure 18c). Note that this is the same way that Frank critiqued Terry's idiosyncratic rendition of MANGO (Figure 7). That is, Terry partitioned her body (Dudis 2004) into distinct semiotic channels, corresponding to two distinct conceptual spaces (Fauconnier and Turner 1998; Haviland



2013b): in “narrated space”, she used her hands to re-enact Will’s sign, while in “real” space, she produced a metalinguistic evaluation of the sign via the mocking facial expression.

Will defended his use of the sign DIG by explaining that armadillos first have to dig in order to go underground. He began by glancing sideways at Terry (Figure 19a). Then, directing his eye gaze downward, he signed DIG twice, first in mid-air (Figure 19b) and then on the floor (Figure 19c). He concluded with ARMADILLO (Figure 19d).



**Figure 19.** (a) Will gazes at Terry sideways. He then signs (b) DIG, (c) DIG-ground, and (d) ARMADILLO.

But Terry dismissed Will’s defense and insisted on Frank’s way of signing ‘armadillo’. She pointed to the bathroom where Frank was, this time emphasizing the manual point with a noticeable turn of the head in the same direction (Figure 20a), signed ARMADILLO (Figure 20b), nodded with her eyes closed (Figure 20c), and pointed once more to the bathroom while making eye contact with Will (Figure 20d). The nod with closed eyes could be interpreted in three ways. First, Terry could be enacting Frank’s emphatic nodding in confirmation that ARMADILLO is the right sign, in which case the utterance might be interpreted as “Frank said ‘ARMADILLO, yes!’”. Second, Terry could be emphasizing that Frank did indeed say ARMADILLO: “Frank said ARMADILLO, indeed he did!” Third, Terry could be enacting her own comprehension of Frank’s sign: “Frank said ARMADILLO and I nodded in comprehension”.



**Figure 20.** Terry expresses approval of Frank’s way of signing ‘armadillo’ by signing (a) point:Frank, (b) ARMADILLO, (c) nods, (d) point:Frank.

Terry continued by pointing to herself (Figure 21a), signing UNDERSTAND<sup>20</sup>, and briefly dropping her hand to rest position: “I understood (when Frank said ARMADILLO)”. She then signed ARMADILLO while smiling, followed by another series of small nods (Figure 21b,c), stating conclusively that ARMADILLO was the appropriate sign for ‘armadillo’. She then gazed to one side with her eyelids lowered, but not totally closed—perhaps signaling that she was not receptive to another rebuttal attempt by Will (Figure 21d).

Will's only response was to look away from Terry while shaking his head in disapproval before then bringing his hand up to head height and shaking it at her in exasperation.



**Figure 21.** Terry signs (a) point:self, (b) UNDERSTAND, followed by a return to rest position: “I understood”. Smiling, she then signs (c) ARMADILLO before (d) nodding: “ARMADILLO is the right sign”.

Here, as in the exchange with Jane and Martin, Terry asserts herself as someone with the authority to critique other peoples' signing. But there is an important difference between how she critiques Will as opposed to Jane and Martin. In the latter case, Terry directly asserted that ARMADILLO is the proper sign for 'armadillo'. However, when addressing Will, she repeatedly acknowledged the fact that she was relying on someone else's words—namely, those of Frank, with whom this sign originated. Why did Terry feel it necessary to cite Frank when critiquing her younger brother Will but not when critiquing her older sister Jane? We might again appeal to the sociolinguistic divisions within the family already documented by Haviland (2013b, 2016). Jane is reckoned to lack communicative competence, whereas Frank and Will are acknowledged as the most fluent signers in the family. Terry is also considered a skilled signer, but one who occupies an ambiguous position as a hearing individual whose primary engagement with the world is through speech. Thus, in order to back up her evaluation of Will's signing, Terry perhaps felt the need to cite Frank, who is also deaf and deemed a competent signer (Will would probably consider himself a better signer than Frank, however). The strength of her evaluation draws on a juxtaposition of Will's version of 'armadillo' with that of Frank, with the former framed as unintelligible and the latter intelligible. Thus, Terry productively appropriates both of her brothers' words to construct her own linguistic authority.

To round out the saga of exchanges involving ARMADILLO, we will flash forward over a year later to 27 August 2023, when I asked Terry and Frank to complete the same elicitation task once more. When Terry described the armadillo, she included the sign ARMADILLO. Frank broke eye contact with Terry and nodded, demonstrating his comprehension. However, when presented with the matching array, Frank indicated that he understood Terry to be describing a turtle.<sup>21</sup> When I waved my finger NO, Frank immediately realized his mistake: making eye contact with Terry, he tilted his head backward and produced an open-mouthed smile (Figure 22a) before repeating the sign ARMADILLO (Figure 22b,c).

Terry did not let Frank's momentary lapse in memory pass without comment. With her eyebrows furrowed, she reminded Frank that ARMADILLO was in fact the sign that he told her to use. She signed ARMADILLO (Figure 23a), pointed at Frank (Figure 23b), and then repeated the first sign, now with her furrowed brows relaxing into a sidelong glance accompanied by a half-smile (Figure 23c), followed by a headshake produced with squinted eyes (Figure 23d). Frank, still smiling, admitted that Terry was right by wagging his index finger, oriented toward his sister, in a vertical, up-and-down fashion (Figure 23e).





**Figure 22.** (a) Frank suddenly understands. (b,c) He produces the sign ARMADILLO.



**Figure 23.** Terry tells Frank that he himself showed her the sign ARMADILLO. (a) GO-UNDRGROUND, (b) point:Frank, (c) ARMADILLO, (d) Terry squints and shakes her head. (e) Frank admits that Terry is correct.

But Terry was still not yet ready to absolve Frank of his misdemeanor. She proceeded to mock the facial expression that her brother produced when he suddenly remembered what the sign ARMADILLO meant. Terry began by signing ARMADILLO (Figure 24a)—quoting herself, from just a moment earlier—and then re-enacted Frank’s facial expression (Figure 24b), with a final point directed at her brother to reinforce that it is indeed him who she is mocking (Figure 24c). Frank continued to smile (Figure 24d) and then finally pointed to the image of the armadillo when I flashed him the matching array.

This final performance by Terry demonstrates that signers can transform any visible action, including presumably non-linguistic actions such as the facial expression Frank produced with his sudden recognition of the sign, into a communicative device in its own right, which can then be embedded into signed utterances alongside (partially) conventionalized lexical items. As Goodwin (2018, p. 1) observes, an essential feature of human cognitive and social life is that we “inhabit each other’s actions”. In other words, we perform new actions (communicative or otherwise) by building upon the actions of others. Young sign languages like Z sign demonstrate how bodily actions might serve as the raw material for language creation. Indeed, bodily enactment remains an indispensable device in the grammar of older sign languages, such as American Sign Language, as well (Winston 1996; Cormier et al. 2015; Quinto-Pozos 2007a, 2007b; Quinto-Pozos et al. 2022).



**Figure 24.** Terry mocks Frank’s delayed recognition by (a) quoting her own production of the sign ARMADILLO, (b) imitating Frank’s sudden recollection, and (c) pointing at Frank. (d) Frank laughs at Terry’s performance.

This lengthy series of exchanges illustrates how a sign that was favored by one signer can be circulated throughout the community by another, thereby pushing the sign forward along the path of conventionalization. Crucially, the unfolding of this process is shaped by local social relations and language ideologies about linguistic competence and authority. To conclude, we turn to the role of metalinguistic discourse in the transmission of linguistic norms to children.

## 6. Metalinguistic Critique of a Child Signer

A brief final example illustrates the role that metalinguistic critique may play in the transmission of Z sign to Terry’s one-and-a-half-year-old hearing son David. From infancy, David has been raised by both deaf and hearing caregivers and was thus constantly immersed in Z sign as well as Tsotsil. What is more, he observed most of the elicitation sessions I conducted with the adult signers in the summers of 2022 and 2023—first as a passive onlooker held in the arms or swaddled on the back of one of the main participants, then eventually as an independently mobile and engaged participant who would actively attend to the elicitation materials and occasionally volunteer signs himself. During this period, David was signing so much that on one occasion, Rita affectionately dubbed him *k’ox uma’*, literally ‘little mute’, using the usual word that describes non-speaking deaf people in Zinacantán.

The following exchange occurred on 4 September 2023. I was setting up for an elicitation session with Jane, Terry, and David, who were waiting quietly in their chairs while I fiddled with the cameras. David suddenly broke the silence. He began by waving HEY (Haviland 2015, 2022) to his aunt Jane, but as she was looking in the other direction at me, she did not notice her nephew’s bid for attention (Figure 25).

David looked to his mother and produced a small vocalization while pointing at Jane (Figure 26). Terry responded “K’usi? Buy?” (“What? Where is it?”), and then realizing that David had a message for Jane, she issued a command, “Albo che’e!” (“Tell her then!”). David complied with his mother’s directive by gazing back at his aunt and waving again (Figure 27a). This time, having successfully attracted Jane’s attention, he proceeded to deliver his message: a single sign formed with the index finger and thumb pressed together in a “pinching” configuration, waved side-to-side several times (Figure 27b). It is not clear to me what this sign means.<sup>22</sup> Jane’s response was simply to nod at her nephew and adjust his clothing.





**Figure 25.** David silently waves to Jane, but she does not notice.



**Figure 26.** David recruits the help of his mother by making eye contact with her, vocalizing, and pointing to Jane. Terry asks him what he wants and then directs him to tell Jane himself.



**Figure 27.** (a) David waves to Jane—this time successfully securing her visual attention—and then (b) produces a sign, the meaning of which is unclear.

Upon finishing this short utterance, David looked back to his mother, apparently seeking approval for his performance. Terry made eye contact with her son and laughed (Figure 28a). She then shifted her gaze to Jane, waved to her (Figure 28b), and then imitated David's sign, accompanied by the same "mocking" facial expression described in previous examples (Figure 28c).



**Figure 28.** (a) Terry laughs affectionately at David's performance. (b) She then waves to Jane and then (c) produces a parody of the sign that her son produced.

It is clear from this exchange not only that David understands the essential mechanics of visual attention management and turn-taking but also that Terry recognizes her son as a pragmatically competent signer. When she directs David to simply "tell" Jane, she does not explain that he must first secure his aunt's visual attention or even that he has to sign with her. At the same time, Terry also indicates where David's linguistic capabilities are lacking by parodying his sign in the same way that the adult signers parody one another. In this way, she exposes David to the metalinguistic practices of the family that we have examined throughout this article, demonstrating to him that Z sign is subject to norms of usage and, furthermore, that his signing may be evaluated against those norms and that his mother is someone who can carry out such an evaluation.<sup>23</sup>

From this very brief exchange, we can see that the complex combinations of different semiotic resources we have observed throughout this article are not limited to interactions among adults. From a young age, children in this family are exposed to multiple kinds of coexpressivity, including alternations between sign and speech, combinations of manual and non-manual elements in sign, and crucially, the embedding of previous individuals' signing into new utterances. In addition, metalinguistic critique plays a role in the propagation and maintenance of linguistic norms among the adult signers, but it also may contribute to the transmission of norms to the next generation of signers.

## 7. Conclusions

Few studies have examined metalinguistic discourse in sign languages, let alone emerging sign languages (Green 2014, 2017, 2022; Haviland 2013b, 2016; Hoffmann-Dilloway 2011, 2016; Pfister 2020; Kusters 2014, 2020). To help fill this gap, I have presented a series of conversational exchanges in which the Z signers reflect upon their own and others' language use, focusing on the form and function of metalinguistic critiques.

One way that the Z signers talk about their language is by using manual and non-manual articulators to represent distinct "voices" simultaneously—that of the individual whose language is being quoted and that of the individual commenting upon it. This depends on the ability to partition the body into distinct communicative channels (Dudis 2004) and to distinguish between "narrated" space and "real" space (Fauconnier and Turner 1998). This is a semiotically complex structure that has been overlooked in previous studies of the interaction between manual and non-manual signals in emerging sign languages.



Such an observation demonstrates the need for more work on emerging sign languages that pays close attention to how different communicative devices are employed in the course of conversation.

Through metalinguistic discourse, the Z signers position themselves and others as (in)competent or (non-)authoritative signers in order to reinforce or challenge existing social asymmetries. At the same time, how it is performed is shaped by those same asymmetries. Thus, Terry was able to critique Jane's and Martin's signing directly and unproblematically, since these individuals are ranked lower than her on the hierarchy of signing skills. By contrast, when she challenged Will (a signer considered to be more skilled than herself), she did so by citing Frank (another more authoritative signer), and even then, Will resisted her critique. There is thus a reciprocal relationship between metalinguistic discourse and social asymmetries.

I have emphasized that metalinguistic behavior involves reference to the previous language use of others (including past incarnations of oneself). This fact points to the inherently *co-operative* (Goodwin 2018) nature of linguistic interactions: signers productively build upon meaning-making resources created by other individuals. When signers embed another individual's previous utterances into a new one, they produce "structural coupling that...creates a new, higher-order linguistic structure. Within this structure, the coupled components recontextualize each other, generating new affordances for meaning." (Du Bois 2014, p. 360). This is an important source of structural complexity, even in a young language like Z sign.

This brings us to Goodwin's account of how co-operative action scaffolds the emergence of symbols—signs (in the sense of Peirce 1955) imbued with meaning through social convention. Goodwin argues that interlocutors create symbols in response to the inherent referential indeterminacy of non-conventionalized iconic and indexical signs: each time one produces such a sign, its meaning must be clarified by her interlocutors. Green (2022, p. 25) similarly observes that iconic and indexical signs require work "by signer *and* addressee to actualize relationships that could remain latent" (emphasis in original). This process of clarification interrupts the advancement of the interaction, thereby motivating the parties involved to establish agreements about what signs mean. Thus, "the co-operative organization of action creates an environment that systematically promotes and then sustains the development of signs that can be recognized rapidly and unproblematically through agreement and convention" (Goodwin 2018, p. 332). This is a particularly pressing issue for individuals who may rely on non-conventionalized icons and indexes as their primary mode of communication, such as deaf individuals who do not know a conventional sign language, since it leaves them vulnerable to being rendered unintelligible by interlocutors who refuse to do the work of disambiguation (Green 2022).

The series of exchanges about how to sign 'armadillo' is an excellent example of how the indeterminacy of non-conventionalized iconic and indexical signs drives signers to establish conventional symbols. All of the Z signers in their initial attempts at describing armadillos produced lengthy descriptions, mostly referring to various characteristic anatomical features. Eventually, Frank told Terry that 'armadillo' should be signed ARMADILLO, where the iconic motivation of the sign is the animal's burrowing underground. She in turn made its propagation her own responsibility. When Martin failed to convey the concept of 'armadillo' to Jane, Terry intervened to show them the sign ARMADILLO. Later, when Terry understood Will's sign DIG to mean 'duck' rather than 'armadillo', she attributed her misinterpretation to the ambiguity of Will's sign and contrasted it with Frank's ARMADILLO, which she explicitly characterized as a more intelligible alternative. Thus, when Frank and Terry asserted that ARMADILLO should be the sign for 'armadillo', they were attempting to establish a conventional form–meaning pairing; that is, they were trying to create a symbol. Importantly, the iconic properties of ARMADILLO do not preclude it from being a symbol, since a sign may simultaneously be an icon, an index, and a symbol (Peirce 1955; Clark 1996; Ferrara and Hodge 2018). Through the process of operating on the

actions of other individuals, partially reproducing and modifying them, icons and indexes can become conventionalized.

In the examples presented here, we have seen that through the open discussion of the “right” way to sign, the Z signers propagate and enforce emergent linguistic norms—at least in a few specific cases. More broadly, however, the extent to which metalinguistic discourse can substantially shape the lexicon and grammar of a language is a matter of debate. It has long been recognized that language users are generally unaware of many of the grammatical patterns that underly language use (Boas [1911] 1966; Saussure [1915] 1966; Sapir [1927] 1949; Jakobson 1980; Silverstein 1981; Lucy 1992). Similarly, Labov writes that the “part of language behavior that is subject to conscious control. . .is not a major part of the language faculty, and it has relatively little influence on the long-range development of language structure” (Labov 1994, p. 598). I do not necessarily disagree with the latter claim (but see Thomason 2007; Dorleijn 2019). However, the former claim is striking in light of the extensive body of literature in which the reflexive nature of language is held to be one of its unique features that underlies its expressive power (Hockett 1963; Silverstein 1976; Lyons 1977; Lucy 1993). The data presented in this article suggest that the conscious manipulation of signs is indeed a fundamental semiotic act, especially among members of a group of individuals who are still developing a shared lexicon. Without drawing premature conclusions about how metalinguistic discourse has impacted or will impact the structure of Z sign in the long term, it is clear that the Z signers are reflecting on their use of language, selectively propagating certain linguistic forms and not others, and mobilizing these forms in the construction of their social worlds.

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**Informed Consent Statement:** Informed consent or parental assent was obtained from all subjects involved in the study. Since most of the participants are non-literate, the consent process was carried out orally; written consent was not obtained from the study subjects. The Institutional Review Board of the University of Texas at Austin approved a waiver of documentation of informed consent for this study.

**Data Availability Statement:** The data presented in this study are available on request from the corresponding author to protect the privacy of participants.

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## Notes

<sup>1</sup> All research participants’ names in this article are pseudonyms.

<sup>2</sup> As is conventional in sign language linguistics, I transcribe signs with an approximate English gloss of their meaning, written in capital letters (Johnston 2010). However, this practice is doubly problematic. First, it may (falsely) imply that a sign is equivalent in meaning to the English word used to gloss it. Second, this paper deals with the process of conventionalization in which signers are actively negotiating the forms and meanings of signs; in this context, to assign a determinate gloss misrepresents the degree of conventionalization of the sign. Nonetheless, glosses are useful for representing signs in text.

<sup>3</sup> As a reviewer points out, these points apply not only to deaf signers but also to hearing speakers (cf. M. Goodwin and Cekaite 2018; C. Goodwin 2018; Mondada 2019).

- 4 Vic's acquisition of Z sign was intentionally, but temporarily, disrupted when his grandmother (who felt that exposure to sign would halt his spoken language development) removed him from the care of his mother just before age 2 and sent him to live with a hearing aunt. He was returned to his mother after about 10 months (Haviland 2016).
- 5 Though word *chich* can refer to foolishness in general, it usually refers to linguistic incoherence or loquacity. This, as John Haviland points out to me, is an implicit recognition that Jane's signing is a kind of "speech" or language. I am also dubbed *chich* by members of this family for my odd habits, cheesy jokes, and clumsy Tsotsil, but this usage seems to me to be more humorous than insulting. By contrast, when applied to Jane, it is often meant in its fully pejorative sense—at least this is how I understand it; Haviland suggests that it is "almost always a vaguely affectionate insult" (p.c.).
- 6 This involves affective facial expressions, pointing with the eyes and/or face, and lexical signs that involve a significant non-manual component and permit the manual components (if any) to be dropped, such as OLD, SLEEP, EAT, among many others. See Haviland (2020a) for an extended example.
- 7 A cargo is a year-long, unpaid position in which the cargo holder is responsible for hosting, at his own expense, various celebrations for Catholic saints. Cargos are arranged in a hierarchy of four increasingly prestigious tiers, and the prestige of a given cargo is linked to the cost of serving it (Cancian 1965).
- 8 As of 2019, all three women wove. By 2022, however, Rita was the only one who continued to do so. Jane switched to embroidery as well as tortilla production for a local business, and Terry stopped working to care for her newborn son.
- 9 In this frame, it appears as if Terry is pouting, which could be interpreted as a meaningful signal. However, she is actually just chewing a piece of fruit.
- 10 Frank's confusion is striking, since every member of the family represented banana with a sequence of signs depicting the peeling and then biting of a banana, in that order, at least on my lexical elicitation task. It is not clear to me why Frank interpreted Terry's version of MANGO to mean 'banana'.
- 11 Another potential gloss is "Now I understand what you/I got wrong". This is another demonstration of the dubiousness of glosses. I thank John Haviland for pointing this out to me.
- 12 Sandler (2012) notes that there is only one short videotape of the Stratum I ABSL signers, and from the video stills shown in that paper, it is not a high-quality film. If these signers produce similarly complex simultaneous constructions of the kind that I present in this article, they might not be clearly visible in the film.
- 13 The gloss ARMADILLO implies that this is "the" sign for 'armadillo'. This is problematic, because Frank is the only one of the deaf siblings who produced this sign, suggesting that it is not shared across all members of the family (contrast this with MANGO, which all fluent signers *did* produce on the elicitation task). I use the gloss ARMADILLO since, as will be shown, Frank insists that this *should* be the sign for 'armadillo', and at least one member of the family, Terry, takes up this suggestion. It is not clear whether this is a neologism that Frank coined during this task, or if it is a sign he has used for some time.
- 14 Manual points are transcribed 'point:', with the referent indicated after the colon.
- 15 Will referred to the use of armadillo shells as containers for corn kernels the second time that he completed the elicitation task (in 2023) but not the first time (in 2022, the response analyzed in this article).
- 16 I thank John Haviland for drawing my attention to these points, as well as an anonymous reviewer for pointing out the ambiguity of Terry's query.
- 17 Martin, unlike Terry, *did* recall the Tsotsil word for 'armadillo' (*kapon chon*) when I asked him about it.
- 18 A reviewer suggests that by gazing at Jane, Terry is appealing to Jane for support against their father in order to challenge the power asymmetries between parents and children and between men and women. I acknowledge this as a possibility, but I find this interpretation to be unlikely given that (1) Terry generally treats Jane as a subordinate, and (2) Martin often relies on Terry to translate what his deaf children sign (Haviland 2016), which shifts the power dynamic in Terry's favor, at least with regard to signing skills. She thus does not need to recruit Jane to critique his signing.
- 19 Jane has corrected her father on other occasions (e.g., he did not know the conventional sign AVOCADO), and though he sometimes tried to defend his way of signing, he ultimately accepted her corrections with laughter.
- 20 The sign here glossed as UNDERSTAND could alternatively be glossed THINK, KNOW, or REMEMBER, based on my observations of how this sign is used. I have chosen to interpret the sign as 'understand' given the context (i.e., Terry failed to understand Will and then contrasted how Will signed 'armadillo' with how Frank did). However, a reviewer points out that if Terry meant 'know' (or even 'remember'), then Terry's remark must be interpreted differently, for instance, "Frank said ARMADILLO, indeed he did! I know/remember (because I witnessed him produce that sign)".
- 21 As with the sign MANGO, Frank may not have recognized Terry's articulation of ARMADILLO, because she produced it in a lax manner, with a very small movement that did not reach as far down to the ground as Frank articulates it. This kind of lax articulation seems to me to be typical of Terry's signed idiolect (cf. Figure 21c); John Haviland suggests that this is part of Terry's version of signed "whispering" (cf. Terry's surreptitious signing described by Haviland 2020b).
- 22 When I asked Terry what David said, she replied "Ja' li luse" (*It's the light*). I am not sure whether she meant that his sign means 'light', or that his sign describes something about a light (e.g., turning a light on by flipping a light switch).



- <sup>23</sup> It is worth noting that while the earlier exchanges about the signs for ‘mango’ and ‘armadillo’ occurred as a direct result of a lexical elicitation task, the present exchange was totally spontaneous. Thus, the Z signers engage in metalinguistic critique in “natural” conversation, too, and not only when there is an artificially heightened focus on language as in elicitation.

## References

- Bahan, Benjamin J. 2008. Upon the formation of a visual variety of the human race. In *Open Your Eyes: Deaf Studies Talking*. Edited by H-Dirksen L. Bauman. Minneapolis: University of Minnesota Press, pp. 83–99.
- Bahan, Benjamin J., and Samuel J. Supalla. 1995. Line segmentation and narrative structure: A study of eyegaze behavior in American Sign Language. In *Language, Gesture, and Space*. Edited by Karen Emmorey and Judy S. Reilly. London: Psychology Press, pp. 171–91.
- Baker, Charlotte. 1976. Eye-Openers in ASL. Paper presented at the California Linguistics Association Conference Proceedings, San Diego State University, San Diego, CA, USA, April 30–May 1.
- Baker, Charlotte. 1977. Regulators and turn-taking in American Sign Language discourse. In *On the Other Hand: New Perspectives on American Sign Language*. Edited by Lynn Friedman. New York: Academic Press.
- Bakhtin, Mikhail M. 1981. *The Dialogic Imagination: Four Essays by M. M. Bakhtin*. Austin: University of Texas Press. First published 1934.
- Boas, Franz. 1966. Introduction. In *Handbook of American Indian Languages*. Reprinted by Preston Holder. Lincoln: University of Nebraska Press. First published 1911.
- Brentari, Diane. 2011. Sign language phonology. In *The Handbook of Phonological Theory*. New York: Wiley, pp. 691–721.
- Brentari, Diane, and Laurinda Crossley. 2002. Prosody on the hands and face: Evidence from American Sign Language. *Sign Language & Linguistics* 5: 105–30.
- Brentari, Diane, and Susan Goldin-Meadow. 2017. Language emergence. *Annual Review of Linguistics* 3: 363–88. [\[CrossRef\]](#)
- Cancian, Frank. 1965. *Economics and Prestige in a Maya Community: The Religious Cargo System in Zinacantan*. Stanford: Stanford University Press.
- Carrigan, Emily M., and Marie Coppola. 2017. Successful communication does not drive language development: Evidence from adult homesign. *Cognition* 158: 10–27. [\[CrossRef\]](#)
- Clark, Herbert H. 1996. *Using Language*. Cambridge, MA: Cambridge University Press.
- Cormier, Kearsy, Sandra Smith, and Zed Sevcikova-Sehyr. 2015. Rethinking constructed action. *Sign Language & Linguistics* 18: 167–204.
- Crasborn, Onno A. 2006. Nonmanual structures in sign language. In *Encyclopedia of Language & Linguistics*, 2nd ed. Edited by Keith Brown. Amsterdam: Elsevier Science, pp. 668–72.
- Dachkovsky, Svetlana. 2022. Emergence of a subordinate construction in a sign language: Intonation ploughs the field for morphosyntax. *Glossa: A Journal of General Linguistics* 7.
- Dachkovsky, Svetlana, Rose Stamp, and Wendy Sandler. 2018. Constructing complexity in a young sign language. *Frontiers in Psychology* 9: 2202. [\[CrossRef\]](#)
- Dachkovsky, Svetlana, Rose Stamp, and Wendy Sandler. 2023. Mapping the body to the discourse hierarchy in sign language emergence. *Language and Cognition* 15: 53–85. [\[CrossRef\]](#)
- De Vos, Connie, and Roland Pfau. 2015. Sign language typology: The contribution of rural sign languages. *Annual Review of Linguistics* 1: 265–88. [\[CrossRef\]](#)
- Devereaux, Leslie. 1987. Gender difference and the relations of inequality in Zinacantan. In *Dealing with Inequality: Analysing Gender Relations in Melanesia and Beyond*. Edited by Marilyn Strather. Cambridge: Cambridge University Press, pp. 89–111.
- Dorleijn, Margreet. 2019. Metalinguistic comments as a tool for bottom-up language policy. *Language Dynamics and Change* 9: 192–219. [\[CrossRef\]](#)
- Du Bois, John W. 2014. Towards a dialogic syntax. *Cognitive Linguistics* 25: 359–410. [\[CrossRef\]](#)
- Dudis, Paul G. 2004. Body partitioning and real-space blends. *Cognitive Linguistics* 15: 223–38. [\[CrossRef\]](#)
- Emmorey, Karen, Helsa B. Borinstein, and Robin Thompson. 2005. Bimodal bilingualism: Code-blending between spoken English and American Sign Language. In *Proceedings of the 4th International Symposium on Bilingualism*. Edited by J. Cohen, K. T. McAlister, K. Rolstad and J. MacSwan. Somerville: Cascadia Press.
- Fauconnier, Gilles, and Mark Turner. 1998. Conceptual integration networks. *Cognitive Science* 22: 133–87. [\[CrossRef\]](#)
- Fenlon, Jordan, and Erin Wilkinson. 2015. Sign languages in the world. *Sociolinguistics and Deaf Communities* 1: 5–28.
- Ferrara, Lindsay, and Gabrielle Hodge. 2018. Language as description, indication, and depiction. *Frontiers in Psychology* 9: 329842. [\[CrossRef\]](#) [\[PubMed\]](#)
- Flaherty, Molly, Dea Hunsicker, and Susan Goldin-Meadow. 2021. Structural biases that children bring to language learning: A cross-cultural look at gestural input to homesign. *Cognition* 211: 104608. [\[CrossRef\]](#) [\[PubMed\]](#)
- Franklin, Amy, Anastasia Giannakidou, and Susan Goldin-Meadow. 2011. Negation, questions, and structure building in a homesign system. *Cognition* 118: 398–416. [\[CrossRef\]](#) [\[PubMed\]](#)
- Gal, Susan, and Judith T. Irvine. 2000. Language ideology and linguistic differentiation. In *Regimes of Language: Ideologies, Politics, and Identities*. Edited by Paul Kroskrity. Santa Fe: School of American Research Press, pp. 35–84.
- Gal, Susan, and Judith T. Irvine. 2019. *Signs of Difference: Language and Ideology in Social Life*. Cambridge: Cambridge University Press.

- German, Austin. 2023a. Abrupt grammatical reorganization of an emergent sign language: The expression of motion in Zinacantec Family Homesign. *Diachronica*, Online first article.
- German, Austin. 2023b. Convencionalización léxica en una lengua de señas emergente de Zinacantán. Paper presented at the Tenth Conference on Indigenous Languages of Latin America (CILLA-X), Austin TX, USA, November 9–11.
- German, Austin. Forthcoming. Birth order effects on argument structure devices in Zinacantec Family Homesign. Paper presented at the SIGN10. University of the West Indies, St Augustine Campus, Trinidad & Tobago, December 9–12.
- Goffman, Erving. 1979. Footing. *Semiotica* 25: 1–30. [\[CrossRef\]](#)
- Goico, Sara A. 2020. A linguistic ethnography approach to the study of deaf youth and local signs in Iquitos, Peru. *Sign Language Studies* 20: 619–43. [\[CrossRef\]](#)
- Goico, Sara A., and Laura Horton. 2023. Homesign: Contested Issues. *Annual Review of Linguistics* 9: 377–98. [\[CrossRef\]](#)
- Goldin-Meadow, Susan. 1982. The resilience of recursion: A study of a communication system developed without a conventional language model. In *Language Acquisition: The state of the Art*. Edited by Eric Wanner and Lila R. Gleitman. New York: Cambridge University Press.
- Goldin-Meadow, Susan. 2005. *The Resilience of Language: What Gesture Creation in Deaf Children Can Tell Us About How All Children Learn Language*. New York: Psychology Press.
- Goldin-Meadow, Susan, and Carolyn Mylander. 1983. Gestural communication in deaf children: Noneffect of parental input on language development. *Science* 221: 372–74. [\[CrossRef\]](#)
- Goldin-Meadow, Susan, and Diane Brentari. 2017. Gesture, sign, and language: The coming of age of sign language and gesture studies. *Behavioral and Brain Sciences* 40: e46. [\[CrossRef\]](#)
- Goldin-Meadow, Susan, and Heidi Feldman. 1977. The development of language-like communication without a language model. *Science* 197: 401–3. [\[CrossRef\]](#)
- Goldin-Meadow, Susan, Carolyn Mylander, and Cynthia Butcher. 1995. The resilience of combinatorial structure at the word level: Morphology in self-styled gesture systems. *Cognition* 56: 195–262. [\[CrossRef\]](#) [\[PubMed\]](#)
- Goldin-Meadow, Susan, Cynthia Butcher, Carolyn Mylander, and Mark Dodge. 1994. Nouns and verbs in a self-styled gesture system: What's in a name? *Cognitive Psychology* 27: 259–319. [\[CrossRef\]](#) [\[PubMed\]](#)
- Goodwin, Charles. 2018. *Co-Operative Action*. Cambridge, MA: Cambridge University Press.
- Goodwin, Marjorie, and Asta Cekaite. 2018. *Embodied Family Choreography: Practices of Control, Care, and Mundane Creativity*. London: Routledge.
- Green, Elizabeth Mara. 2022. The eye and the other: Language and ethics in deaf Nepal. *American Anthropologist* 124: 21–38. [\[CrossRef\]](#)
- Green, Elizabeth Mara. 2014. The Nature of Signs: Nepal's Deaf Society, Local Sign, and the Production of Communicative Sociality. Unpublished Doctoral dissertation, University of California, Berkeley, Berkeley, CA, USA.
- Green, Elizabeth Mara. 2017. Performing Gesture: The Pragmatic Functions of Pantomimic and Lexical Repertoires in a Natural Sign Narrative. *Gesture* 16: 328–62. [\[CrossRef\]](#)
- Haviland, John B. 2011. Nouns, verbs, and constituents in an emerging 'Tzotzil' sign language. In *Representing Language: Essays in Honor of Judith Aissen*. Edited by Gutierrez-Bravo, L. Mikkelsen and E. Potsdam. California: eScholarship, University of California, pp. 157–71.
- Haviland, John B. 2013a. Xi to vi: "Over that way, look!" (Meta) spatial representation in an emerging (Mayan?) sign language. In *Space in Language and Linguistics: Geographical, Interactional, and Cognitive Perspectives*. Edited by Peter Auer, Martin Hilpert, Anja Stukenbrock and Benendikt Szrmecsanyi. Berlin and Boston: De Gruyter, pp. 334–400. [\[CrossRef\]](#)
- Haviland, John B. 2013b. (Mis)understanding and obtuseness: "Ethnolinguistic borders" in a minuscule speech community. *Journal of Linguistic Anthropology* 23: 160–91. [\[CrossRef\]](#)
- Haviland, John B. 2013c. The emerging grammar of nouns in a first generation sign language: Specification, iconicity, and syntax. *Gesture* 13: 309–53. [\[CrossRef\]](#)
- Haviland, John B. 2014. *Different Strokes. From Gesture in Conversation to Visible Action as Utterance: Essays in Honor of Adam Kendon*. Amsterdam: John Benjamins Publishing Company, p. 245.
- Haviland, John B. 2015. Hey! *Topics in Cognitive Science* 7: 124–49. [\[CrossRef\]](#)
- Haviland, John B. 2016. "But you said 'four sheep'...!": (sign) language, ideology, and self (esteem) across generations in a Mayan family. *Language & Communication* 46: 62–94.
- Haviland, John B. 2019. *Grammaticalizing the Face (as Well as the Hands) in a First Generation Sign Language: The Case of Zinacantec Family Homesign*. ICHL22. Edited by Michela Cennamo and Claudia Fabrizio. Amsterdam: John Benjamins, pp. 521–62.
- Haviland, John B. 2020a. Signs, interaction, coordination, and gaze: Interactive foundations of Z—An emerging (sign) language from Chiapas, Mexico. In *Emerging Sign Languages of the Americas*. Sign Language Typology Series, 9. Edited by Olivier Le Guen, Josefina Safar and Marie Coppola. Berlin: Mouton de Gruyter, pp. 35–96.
- Haviland, John B. 2020b. Zinacantec family homesign (or "Z"). In *Emerging Sign Languages of the Americas*. Sign Language Typology Series, 9. Edited by Olivier Le Guen, Josefina Safar and Marie Coppola. Berlin: Mouton de Gruyter, pp. 393–400.
- Haviland, John B. 2022. How and when to sign "Hey!" Socialization into grammar in Z, a 1st generation family sign language from Mexico. *Languages* 7: 80. [\[CrossRef\]](#)
- Hockett, Charles F. 1963. The problem of universals in language. In *Universals in Language*. Joseph Harold Greenberg. Cambridge, MA: MIT Press, pp. 1–29.

- Hoffmann-Dilloway, Erika. 2011. Lending a Hand: Competence through Cooperation in Nepal's Deaf Associations. *Language in Society* 40: 285–306. [\[CrossRef\]](#)
- Hoffmann-Dilloway, Erika. 2016. *Signing and Belonging in Nepal*. Washington, DC: Gallaudet University Press.
- Horton, Laura. 2020. Seeing Signs. *Sign Language Studies* 20: 644–63. [\[CrossRef\]](#)
- Horton, Laura, Lynn Hou, Austin German, and Jenny Singleton. 2023. Sign language socialization and participant frameworks in three indigenous Mesoamerican communities. *Research on Children and Social Interaction* 7: 288–319. [\[CrossRef\]](#)
- Hou, Lynn. 2020. Who signs? Language ideologies about deaf and hearing child signers in one family in Mexico. *Sign Language Studies* 20: 664–90. [\[CrossRef\]](#)
- Hou, Lynn, and Connie de Vos. 2022. Classifications and typologies: Labeling sign languages and signing communities. *Journal of Sociolinguistics* 26: 118–25. [\[CrossRef\]](#)
- Jakobson, Roman. 1980. On the linguistic approach to the problem of consciousness and the unconscious. In *The Framework of Language (Michigan Studies in the Humanities)*. Ann Arbor: Horace H. Rackham School of Graduate Studies, pp. 113–32.
- Johnston, Trevor. 2010. From archive to corpus: Transcription and annotation in the creation of signed language corpora. *International Journal of Corpus Linguistics* 15: 106–31. [\[CrossRef\]](#)
- Kaneko, Michiko, and Johanna Mesch. 2013. Eye gaze in creative sign language. *Sign Language Studies* 13: 372–400. [\[CrossRef\]](#)
- Kendon, Adam. 2004. *Gesture: Visible Action as Utterance*. Cambridge, MA: Cambridge University Press.
- Kendon, Adam. 2015. Gesture and sign: Utterance uses of visible bodily action. In *The Routledge Handbook of Linguistics*. London: Routledge, pp. 33–46.
- Kisch, Shifra. 2008. “Deaf discourse”: The social construction of deafness in a Bedouin community. *Medical Anthropology* 27: 283–313. [\[CrossRef\]](#)
- Kisch, Shifra. 2012. Demarcating Generations of Signers in the Dynamic Sociolinguistic Landscape of a Shared Sign Language: The Case of the Al-Sayyid Bedouin. In *Sign Languages in Village Communities*. Sign Language Typology Series, 4. Edited by Ulrike Zeshan and Connie de Vos. Berlin: Mouton de Gruyter, pp. 87–126.
- Kroskrity, Paul V. 2018. On Recognizing Persistence in the Indigenous Language Ideologies of Multilingualism in Two Native American Communities. *Language & Communication* 62: 133–44.
- Kusters, Annelies. 2014. Language Ideologies in the Shared Signing Community of Adamorobe. *Language in Society* 43: 139–58. [\[CrossRef\]](#)
- Kusters, Annelies. 2020. One Village, Two Sign Languages: Qualia, Intergenerational Relationships and the Language Ideological Assemblage in Adamorobe, Ghana. *Journal of Linguistic Anthropology* 30: 48–67. [\[CrossRef\]](#)
- Kusters, Annelies, and Sujit Sahasrabudhe. 2018. Language ideologies on the difference between gesture and sign. *Language & Communication* 60: 44–63.
- Kusters, Annelies, Mara Green, Erin Moriarty, and Kristin Snoddon. 2020a. *Sign Language Ideologies in Practice*. Berlin and Boston: De Gruyter Mouton. [\[CrossRef\]](#)
- Kusters, Annelies, Mara Green, Erin Moriarty, and Kristin Snoddon, eds. 2020b. Sign language ideologies: Practices and politics. In *Sign Language Ideologies in Practice*. Berlin and Boston: De Gruyter Mouton, pp. 3–22. [\[CrossRef\]](#)
- Kusters, Annelies, Massimiliano Spotti, Ruth Swanwick, and Elina Tapio. 2017. Beyond languages, beyond modalities: Transforming the study of semiotic repertoires. *International Journal of Multilingualism* 14: 219–32. [\[CrossRef\]](#)
- Labov, William. 1994. *Principles of Linguistic Change*. Internal Factors. Hoboken: Wiley-Blackwell, vol. 1.
- Le Guen, Olivier, Josefina Safar, and Marie Coppola, eds. 2020. *Emerging Sign Languages of the Americas*. Sign Language Typology Series, 9. Berlin: Mouton de Gruyter.
- Linell, Per. 2009. *Rethinking Language, Mind, and World Dialogically: Interactional and Contextual Theories of Human Sense-making*. Charlotte: Information Age.
- Loos, Cornelia, Austin German, and Richard P. Meier. 2022. Simultaneous structures in sign languages: Acquisition and emergence. *Frontiers in Psychology* 13: 992589. [\[CrossRef\]](#) [\[PubMed\]](#)
- López Gómez, Patricia. 2022. Mujeres, Economía Local y Territorio: La Participación de las Mujeres en las Dinámicas Productivas en Zinacantán, Chiapas. Unpublished Master's thesis, Universidad Autónoma de Chiapas, Tuxtla Gutiérrez, Mexico.
- Lucy, John A. 1992. *Grammatical Categories and Cognition: A Case Study of the Linguistic Relativity Hypothesis*. Cambridge: Cambridge University Press.
- Lucy, John A., ed. 1993. *Reflexive Language: Reported Speech and Metapragmatics*. Cambridge, MA: Cambridge University Press.
- Lutzenberger, Hannah, Lierin de Wael, Rehana Omardeen, and Mark Dingemanse. 2024. Interactional Infrastructure across Modalities: A Comparison of Repair Initiators and Continuers in British Sign Language and British English. *Sign Language Studies* 24: 548–81. [\[CrossRef\]](#)
- Lyons, John. 1977. *Semantics: Volume I*. New York: Cambridge University Press.
- Manrique, Elizabeth, and Nick J. Enfield. 2015. Suspending the next turn as a form of repair initiation: Evidence from Argentine Sign Language. *Frontiers in Psychology* 6: 1–21. [\[CrossRef\]](#)
- Meir, Irit, Wendy Sandler, Carol Padden, and Mark Aronoff. 2010. Emerging sign languages. *Oxford Handbook of Deaf Studies, Language, and Education* 2: 267–80.
- Meo Zilio, Giovanni, and Silvia Mejía. 1980. *Diccionario de Gestos de España e Hispanoamérica*. Bogotá: Instituto Caro y Cuervo.



- Mitchell, Ross E., and Michaela Karchmer. 2004. Chasing the mythical ten percent: Parental hearing status of deaf and hard of hearing students in the United States. *Sign Language Studies* 4: 138–63. [\[CrossRef\]](#)
- Mondada, Lorenza. 2019. Contemporary issues in conversation analysis: Embodiment and materiality, multimodality and multisensoriality in social interaction. *Journal of Pragmatics* 145: 47–62. [\[CrossRef\]](#)
- Morford, Jill P. 2002. Why does exposure to language matter? *The Evolution of Language out of Pre-Language* 53: 329–41.
- Morford, Jill P., and Barbara Hänel-Faulhaber. 2011. Homesigners as late learners: Connecting the dots from delayed acquisition in childhood to sign language processing in adulthood. *Language and Linguistics Compass* 5: 525–37. [\[CrossRef\]](#)
- Moriarty, Erin, and Lynn Hou. 2023. Deaf Communities: Constellations, Entanglements, and Defying Classifications. In *A New Companion to Linguistic Anthropology*. Edited by Alessandro Duranti, Rachel George and Robin Conley Riner. Hoboken: John Wiley & Sons, pp. 122–38.
- Moriarty Harrelson, Erin. 2019. Deaf People with ‘No Language’: Mobility and Flexible Accumulation in Language Practices of Deaf People in Cambodia. *Applied Linguistics Review* 10: 55–72. [\[CrossRef\]](#)
- Nespor, Marina, and Wendy Sandler. 1999. Prosody in Israeli sign language. *Language and Speech* 42: 143–76. [\[CrossRef\]](#)
- Nyst, Victoria, Kara Sylla, and Moustapha Magassouba. 2012. Deaf signers in Douentza, a rural area in Mali. In *Sign Languages in Village Communities: Anthropological and Linguistic Insights*. Sign Language Typology Series, 4. Edited by Ulrike Zeshan and Connie De Vos. Berlin: Mouton de Gruyter, pp. 251–76.
- Peirce, Charles S. 1955. *Philosophical Writings of Peirce*. New York: Dover Publications.
- Pfau, Roland, and Josep Quer. 2010. *Nonmanuals: Their Grammatical and Prosodic Roles*. Sign Languages (Cambridge Language Surveys). Edited by Diane Brentari. Cambridge: Cambridge University Press, pp. 381–402.
- Pfister, Anne E. 2020. Bla, bla, bla: Understanding inaccessibility through Mexican sign language expressions. In *Sign Language Ideologies in Practice*. Edited by Kusters Annelies, Mara Green, Erin Moriarty and Kristin Snoddon. Berlin: De Gruyter Mouton, pp. 43–58.
- Quinto-Pozos, David. 2007a. Can constructed action be considered obligatory? *Lingua* 117: 1285–314. [\[CrossRef\]](#)
- Quinto-Pozos, David. 2007b. Why does constructed action seem obligatory? An analysis of “classifiers” and the lack of articulator-referent correspondence. *Sign Language Studies* 7: 458–506. [\[CrossRef\]](#)
- Quinto-Pozos, David, Fey Parrill, and Caitie Coons. 2022. The interface between grammar and bodily enactment in ASL and English. *Languages in Contrast* 22: 195–226. [\[CrossRef\]](#)
- Ramsey, Claire, and David Quinto-Pozos. 2010. Transmission of sign languages in Latin America. In *Sign Languages*. Edited by Diane Brentari. Cambridge, MA: Cambridge University Press.
- Reed, Lauren W. 2022. Sign networks: Nucleated network sign languages and rural homesign in Papua New Guinea. *Language in Society* 51: 627–61. [\[CrossRef\]](#)
- Sandler, Wendy. 2010. Prosody and syntax in sign languages. *Transactions of the Philological Society* 108: 298–328. [\[CrossRef\]](#) [\[PubMed\]](#)
- Sandler, Wendy. 2012. Dedicated gestures and the emergence of sign language. *Gesture* 12: 265–307. [\[CrossRef\]](#)
- Sandler, Wendy, Irit Meir, Svetlana Dachkovsky, Carol Padden, and Mark Aronoff. 2011. The emergence of complexity in prosody and syntax. *Lingua* 121: 2014–33. [\[CrossRef\]](#) [\[PubMed\]](#)
- Sapir, Edward. 1949. The unconscious patterning of behavior in society. In *Selected Writings of Edward Sapir in Language, Culture, and Personality*. Edited by David Mandelbaum. Berkeley: University of California Press, pp. 544–59. First published 1927.
- Saussure, Ferdinand. 1966. *Course in General Linguistics*. Translated by W. Baskin. New York: McGraw-Hill. First published 1915.
- Silverstein, Michael. 1976. Shifters, linguistic categories, and cultural description. In *Meaning in Anthropology*. Edited by Keith H. Basso and Henry A. Selby. Albuquerque: University of New Mexico Press, pp. 11–55.
- Silverstein, Michael. 1981. *The Limits of Awareness*. Sociolinguistic Working Paper No. 84. Austin: Southwest Educational Development Laboratory.
- Starr, Frederick. 1908. In *Indian Mexico: A Narrative of Travel and Labor*. Chicago: Forbes and Company.
- Thomason, Sarah. 2007. Language contact and deliberate change. *Journal of Language Contact* 1: 41–62. [\[CrossRef\]](#)
- Vermeebergen, Myriam, Lorraine Leeson, and Onno Crasborn. 2007. Simultaneity in signed languages: A string of sequentially organised issues. *Amsterdam Studies in the Theory and History of Linguistic Science Series* 4: 1.
- Voloshinov, Valentin Nikolaevich. 1973. *Marxism and the Philosophy of Language*. New York: Seminar Press. First published 1929.
- Winston, Elizabeth A. 1996. Spatial mapping in ASL discourse. Paper presented at the CIT 11th National Convention, Chicago, IL, USA, August 26–29.

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