Providence Island Sign Language in Interaction

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"Gratitude is a must" (Koffee, 2018).

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TABLE OF CONTENTS

LIST OF ABBREVIATIONS

ASL	American Sign Language
BSL	British Sign Language
CA	Constructed action
ID	Ian Dhanoolal
LSA	Lengua de Señas Argentina/Argentine Sign Language
LSFB	Langue des signes de Belgique francophone/French Belgian Sign Language
NTS	norsk tegnspråk/Norwegian Sign Language
NZSL	New Zealand Sign Language
OIR	Other-initiated repair
PISL	Providence Island Sign Language
RE	Referring expression
RI	Repair initiator
TTSL	Trinidad and Tobago Sign Language

GLOSSING CONVENTIONS

CA: text	Constructed action: description of action
IX	Point
IX-2	Point to interlocutor/second person (you)
IX_a	Point to location a
NS-A	Name sign for person A
“word”	Mouthing of “word”

SUMMARY

This dissertation examines sign language in interaction in a small Caribbean community. Providence Island Sign Language, used among deaf and hearing residents of in Providence, Colombia (Spanish: Providencia), has been initially described in the 1970s and 80s but has had very little follow up documentation or research. PISL has been characterised in the literature as lacking specific semiotic and interactional features that are today thought to be common across the world's signed and spoken languages. In this dissertation, I revisit the sign language used in Providence, performing a documentation project of PISL and using the resulting data to investigate how deaf signers use language in interaction.

The dissertation consists of three sub-projects. In Chapter 2, I present and reflect on the documentation project of PISL that formed the basis of my research, discussing challenges and successes in the data collection process. In Chapters 3 and 4, I use dyadic conversation to examine how PISL signers resolve two fundamental challenges of communication: initial reference to non-present third persons (Chapter 3) and other-initiated repair (Chapter 4). In Chapter 3, I identified instances in which a non-present third person was introduced into the discourse and analysed the strategies signers used to do this. I find that despite person reference being previously characterised as ambiguous in the literature, deaf PISL signers appear to craft concise referring expressions that are fit to their communicative needs, and the needs of their interlocutors. Furthermore, in contrast to what has been claimed previously, I find evidence that signers use name signs, that is signs dedicated to identifying specific individuals in the community. In Chapter 4, I examined conversations for instances of other-initiated repair,

that is instances in which one signer signals difficulty with seeing or understanding what their conversation partner has expressed. I examined the overall frequency of these cases, and analysed the types and frequencies of different strategies used by signers to perform other-initiated repair. Despite PISL conversation being previously described as lacking repair strategies in the literature, I find that other-initiated repair is highly common and makes use of strategies that are similar to other signed and spoken languages. Interestingly, while previous descriptions of PISL document use of a single general question sign, I also note the use of an additional question sign specialised for number/quantity being used among signers.

This dissertation contributes to the documentation and description of a small, understudied Caribbean sign language. In doing so, it helps to diversify our understanding of how language is used in interaction. Furthermore, by investigating core interactional challenges, I highlight incongruencies in how PISL has been described in the literature and how it is used today. These observations demonstrate the need for a nuanced approach to findings in the literature, taking into account the i) historic context of the relevant studies, and ii) acknowledging that different types of data may yield different findings. In sum, the findings of this dissertation have provided further evidence that while structural properties differ across the world's languages, how language is used in conversation may demonstrate considerable similarities. They also demonstrate the importance of re-evaluating and re-contextualising old claims about lesser studied languages, in light of new methods, theories and frameworks.

ZUSAMMENFASSUNG

Diese Doktorarbeit erforscht Gebärdensprache in Interaktion in einer kleinen Gemeinschaft in der Karibik. Providence Island Sign Language (PISL) wird von hörenden und tauben Einwohnern von Providence, Kolumbien (Spanisch: *Providencia*) verwendet und wurde erstmals in den 70er und 80er Jahren erforscht. Seither erfolgte aber sehr wenig zusätzliche Dokumentation oder Forschung. In der Literatur wurde beschrieben, dass PISL bestimmte semiotische und interaktionale Merkmale fehlen, die in den gesprochenen Sprachen und den Gebärdensprachen der Welt sonst sehr weit verbreitet sind. Diese Doktorarbeit greift die Erforschung von der Gebärdensprache die in Providence verwendet wird erneut auf; ich habe ein Dokumentationsprojekt ausgeführt und die daraus hervorgehenden Daten verwendet, um zu untersuchen wie taube Sprachnutzer die Sprache in Interaktion verwenden.

Diese Doktorarbeit besteht aus drei Teilprojekten. In Kapitel 2 präsentiere und reflektiere ich über das PISL-Dokumentationsprojekt, welches die Basis für meine Studien bildet. Ich erörtere vor allem die Herausforderungen und Erfolge während des Datenerhebungsprozesses. In Kapitel 3 und Kapitel 4 untersuche zwei fundamentale Herausforderung von Kommunikation mithilfe von dialogischem Videomaterial von PISL-Nurtzern: initial reference, d.h. die erstmalige Erwähnung einer dritten Person die nicht präsent ist (Kapitel 3) und other-initiated repair, d.h. wenn der Gesprächspartner Verständnisprobleme in einer Unterhaltung signalisiert (Kapitel 4). In Kapitel 3 habe ich zunächst alle Vorkommen identifiziert in denen eine dritte, nicht-präsente Person in das Gespräch eingeführt wird und dann die Strategie analysiert, die der Gebärdende dafür verwendet. Obwohl initial reference in der Literatur als zweideutig oder ungenau

beschrieben wurde, zeigen meine Ergebnisse, dass taube PISL-Nutzer sehr präzise in der Wahl ihrer Strategie vorzugehen scheinen und Strategien wählen, die ihren kommunikativen Bedürfnissen sowie denen ihrer Gesprächspartner entsprechen. Im Gegensatz dazu, was in der Literatur beschrieben wird, habe ich Beweise gefunden, dass PISL-Nutzer Gebärdennamen nutzen, d.h. Gebärden die dafür genutzt werden bestimmte Personen in der Gemeinschaft zu identifizieren. In Kapitel 4 habe ich die Unterhaltungen im Hinblick of other-initiated repair untersucht, d.h. wenn der Gesprächspartner signalisiert, dass er Schwierigkeiten hat, etwas im Gespräch zu sehen oder zu verstehen. Ich habe die Frequenz dieses Phänomens untersucht und dann die verschiedenen Typen und Vorkommen von unterschiedlichen Strategien die die Gebärdenden verwendet haben analysiert. Obwohl die Literatur beschreibt, dass in PISL Konversationen keine repair Strategien verwendet werden, habe ich herausgefunden, dass other-initiated repair sehr oft vorkommt. Außerdem ähneln die Strategien, die in PISL verwendet werden, denen in anderen Gebärdensprachen und gesprochenen Sprachen. Des Weiteren habe ich in dieser Studie gefunden, dass es in PISL, obwohl die Literatur besagt, dass es in PISL nur eine einzige Fragewortgebärde gibt, eine zusätzliche Fragewortgebärde gefunden, die speziell für Fragen nach der Anzahl von etwas verwendet wird.

Durch die Dokumentation und Beschreibung einer kleinen Gebärdensprache in der Karibik, trägt diese Doktorarbeit zur Diversifizierung unseres Verständnisses davon bei, wie Sprache in Interaktion verwendet wird. Außerdem hebt die Erforschung von zentralen Herausforderungen von Interaktion hervor wo PISL wie es heute verwendet wird von Beschreibungen in der Literatur abweicht. Diese Beobachtungen demonstrieren, dass es unabdinglich ist, nuanciert an die Forschungsresultate in der Literatur

heranzugehen und dass man sowohl i) den historischen Kontext von relevanten Studien berücksichtigen sollte, als auch ii) anerkennen muss, dass unterschiedliche Datentypen unterschiedliche Ergebnisse liefern können. Die Ergebnisse dieser Doktorarbeit liefern neue Beweise, dass verschiedene Sprachen neben großen strukturellen Unterschieden, zugleich große Ähnlichkeiten im Sprachgebrauch in Unterhaltungen aufweisen können. Außerdem heben die Ergebnisse dieser Doktorarbeit hervor, dass es äußerst wichtig ist, Behauptungen über weniger erforschte Sprachen in veralteter Literatur im Licht neuer Methodologie und Theorien erneut zu beleuchten und zu kontextualiseren.

Chapter One

Introduction

1 Introduction

Interaction has been described by many to be the natural home of language (see, e.g. Goodwin & Heritage 1990; Kendrick et al. 2020). Despite the fact that the very roots of language appear to be linked to social interaction (Levinson 2006; Holler & Levinson 2019), the field of linguistics has generally focused on more structural properties of language and neglected studies of language in interaction. Today however, there is a growing interest in returning to language in its natural habitat and studying situated language practices such as conversation (Floyd 2021). This research has both given a new depth to our understanding of individual languages and given us new dimensions to explore similarities and differences in cross-linguistic research. Like mainstream linguistics, the field of sign language linguistics has also long focused on the structural properties of language, however interactional perspectives are beginning to be adopted (Lepeut & Shaw 2022). Nevertheless, when it comes to the study of non-institutionalised sign languages used in small, non-Western communities, interactional perspectives on language use are rarely applied. These languages have been examined mostly for their structural properties (Braithwaite 2020b), with little attention to the interactional context in which they arise, are learned and are used.

In this dissertation, I examine how language is used in conversation among deaf people in a small signing community. In doing so, I bring together various fields, including documentary linguistics, corpus linguistics, conversation analysis/interactional linguistics, sign language typology and pragmatics. In the following chapter, I provide a brief background in each domain: I first introduce key aspects of pragmatics that are relevant for this dissertation; then I turn to what we know about how these aspects manifest in sign languages; next, I address sign language documentation, focusing on the growing

research on small signing communities and the perspectives taken; last, I discuss corpus methods as they have been applied in documenting and describing sign languages. After this background, I outline the major problems that motivate the research questions in this dissertation, and discuss the theoretical framework underlying this research. I end with some reflections on fieldwork and positionality.

2 Language in interaction

2.1 The pragmatics of everyday conversation

Conversation, that is, the structured exchange of communicative turns in sequence, is a cross-culturally universal format of communication found in societies around the world (Floyd 2021). Despite being one of the most commonplace types of interaction, conversation is no simple task. It involves complex inference about states of knowledge, adherence to cultural and communicative norms, and production and perception of a range of communicative signals. These feats of communication can be observed in any simple conversational exchange. Consider, for example, the following extract presented by Sidnell (2005: 291–292) from a conversation among Erti and Peter, two residents of the Caribbean island of Bequia.

Extract 1-1: bqv – BBQ1b: 48:40 (slightly adapted from Sidnell 2005)[1]

[1] Transcription notations in this extract are in line with common conventions in Conversation Analysis (Jefferson 2004): [marks the start of overlapping speech, :: mark the extension of preceding sound, ((marks descriptive content, and pauses are indicated by their length in millisecond in parentheses. While the original source uses a closer phonetic transcription of the extract alongside English glossing, here I reproduce the English glosses only.

1	Erti:	(but) Trudy has already received her package though.
2	Peter:	huh?
3	Erti:	Trudy.
4	Peter:	Trudy?
5	Erti:	yeah but I [don't think
6	Peter:	[who is she
7	Erti:	but I don't think that she has sent it back yet.
8	Peter:	who's that.
9		(pause 0.2s)
10	Erti:	uhm::
11		(pause 0.6s)
12		you know Cohen?
13	Peter:	Okay
14		Cohen Mount Pleasan- up in Level, ((gaze point))
15	Erti:	yeah::

During the course of their conversation, Erti introduces a reference to Trudy, another Bequian (line 3). Erti uses her first name (Trudy), assuming Peter would be able to identify the referent from the name. Unfortunately, the name alone is not sufficient for Peter. Peter flags this with many strategies: he says "huh", he repeats the name with rising intonation ("Trudy?", line 4), and he asks "who's that?" (line 8). As the conversation progresses, Erti and Peter try to settle on the correct referent, each drawing on other culturally common ways of performing person reference in Bequia. Erti tries to identify Trudy by who she is related to (her father, Cohen, line 12) and Peter adds to this by

suggesting where Trudy's relative lives ("Mount Pleasant", line 14), using his eyes to gaze towards the location. Eventually, the reference is resolved and both people know who they are talking about.

Through the simple act of resolving person reference, this example illustrates several critical aspects of conversation. First, basic communicative acts such as reference are grounded in social, cultural and linguistic context (Stivers, Enfield & Levinson 2007; Enfield 2012). For example, our two Bequians use shared conventions for determining person reference via kinship, and shared spatial awareness for referring to places. To deploy the right context requires they take into account what they believe their interlocutor to already know, as it almost always requires selection from a set of alternative possibilities of varying specificity (Sacks & Schegloff 2007). Ertri carefully selects the name Trudy from a wide range of possibilities – including nicknames, full names, kinship relations, definite descriptions, pronouns – but choses one that he thinks Peter will understand. Indeed, research has suggested that we fit our referring expressions not just to the communicative work we are trying to do, but also the person we are communicating with (Auer 1984; Schegloff 1996) and the relevant cultural norms (e.g. Kitzinger 2005; Land & Kitzinger 2005).

Second, people combine multiple modes and articulators to compose their communicative utterances. One type of resources is what is often thought of as 'core' language skills: for example, we use lexical items that map conventional forms (e.g. the word *dog*) to established meanings (the concept of a dog). People modulate their core language skills to the given communicative need, for example using prosodic alterations of speed, pitch/amplitude, and rhythm. Lastly, people combine simultaneous articulations of the mouth, face, body and hands to form complex multimodal utterances. In the

conversation, Erti and Peter demonstrate the simultaneous combination of words with other semiotic resources. For example, to frame the name as a question, Peter combines the word "Trudy" with rising intonation, prototypical to question formation (line 4). Peter also demonstrates simultaneous use of multiple articulators, combining his verbal reference "Cohen Mount Pleasan- up in Level" with his deictic use of eye gaze (in line 14). As demonstrated by this exchange, each conversational turn combines these various semiotic resources into composite utterances, to be received and interpreted by the interlocutor (Enfield, 2009).

Third, conversations have unspoken structuring rules. For example, (i) Questions are usually followed by responses (Schegloff 1968; Enfield, Stivers & Levinson 2010): when Peter asks a question, Ertri answers. (ii) Turns progress one at a time (Sacks, Schegloff & Jefferson 1974): with the exception of slight overlap in lines 5 and 6, the two men generally take turns speaking. (iii) There are ways to address lack of understanding (Schegloff, Jefferson & Sacks 1977): Peter asks a series of questions to understand Ertri's reference. Importantly, however, all three observations do not just hold true for Bequia conversation, but instead for most conversation studied to date across a variety of languages (Stivers et al. 2009; Enfield et al. 2010; Dingemanse et al. 2015).

The tradition of studying spoken conversation has grown in recent times to expand into a range of languages, including large national speech communities as well as small minority language communities (Floyd 2021). This range of research has given rise to a new field of *pragmatic typology*, highlighting the broad similarities in conversational structure across languages, while demonstrating cultural differences across communities (e.g. Enfield et al. 2010; Dingemanse & Enfield 2015; Floyd et al. 2020; Rossi 2020). However, while conversation has been studied in a range of spoken languages and

increasingly with attention to multimodal interaction, there has been considerably relatively little research on the mechanics of sign language conversation.

2.2 Sign language in interaction

Research on sign language in interaction is still in its early stages, however there is a growing interest in examining the mechanics of sign language conversation (A. Baker & van der Bogaerde 2012; Lepeut & Shaw 2022). This work, in combination with other descriptive insights into signing practices around the world, have suggested that many of the same principles that have been demonstrated in the previous section for spoken conversation hold true in signed conversation.

First, signed communication is contextually embedded. Like our Bequians, when signers want to refer to a person, they draw on shared conventions and infer about shared knowledge to select a referring expression. For example, in the New Zealand Sign Language (NZSL) community, McKee and Mckee (2000) note that there can be many alternative ways of referring to a single person depending on the social context. For example, many NZSL signers have one name sign used in a family context and another among friends. Having a set of alternative reference forms, particularly when introducing a new referent to the discourse, requires the signer to choose one alternative that best matches their interlocutors' knowledge. For example, is it clearer to use a particular name sign (in case a referent has several), articulate or spell out written names, or describe salient physical features of the referent? Selecting one or the other strategy requires balancing what both interlocutors know about the referent and tailoring referring expressions to the recipient (called *recipient design*: Sacks et al. 1974).

The set of conventions varies across communities and conversations. Some strategies may be highly prominent in one community and completely absent in another. For example, the use of *fingerspelling*, representing the letters of a written name using a conventional manual alphabet, is highly common in person reference in the American Sign Language (ASL) community but less common in the NZSL community (McKee & McKee 2000) and it is completely absent from the community of signers of Kata Kolok, the sign language of Balinese village (Lutzenberger 2018). On the other hand, Kata Kolok uses a system of *celestial pointing* for temporal reference, in which signers point to different locations in the sky to make reference to times of day (de Vos 2015), a strategy that has not been described in either ASL or NZSL. Conventions can also vary across communities and across interlocutors, and research has shown that this leads signers to adapt and adjust, for example, their lexical choices in interaction (Stamp et al. 2016; Byun, Roberts, et al. 2018; Bradford, Michaelis & Zeshan 2019).

Second, signed communication combines various semiotic resources. These strategies range from more conventional semiotics such as lexical signs or mouthings of words, but also less conventional semiotics such as deixis and embodiment. Much like in multimodal spoken conversations, signers also use multiple articulators simultaneously in their utterances. For example, non-manual movements of the eyebrows, face, head and body are commonly used in question formation in sign languages (Zeshan 2004), and have been compared to intonational resources in spoken languages (Sandler 1999). Thus, a signer might respond to a confusing person reference by repeating a name sign in combination with question marking non-manuals. Manrique (2016) presents an

example of an Argentine Sign Language user doing just this, repeating the name "sign-name" with furrowed eyebrows as a question marker (see Figure 1-1).

Figure 27. '*Sign-name?*', Person B, middle, initiates repair by repeating a sign-name produced by Person A in line 1.

Figure 1-1: Non-manual features in question formation (reproduced from Manrique, 2016)

Finally, while there has been relatively little interactional research on signed languages, the studies do exist increasingly suggest that signed conversation upholds similar interactional structures as spoken conversation (A. Baker & van der Bogaerde 2012; Lepeut & Shaw 2022). For example, several studies have examined how signers use conversational repair to address misunderstanding or lack of understanding in conversation (e.g. Dively 1998; Manrique & Enfield 2015; Manrique 2016; Byun, de Vos, et al. 2018; Byun et al. 2019; Girard-Groeber 2020; Skedsmo 2020b; 2020a). Much like we observe in Bequia, signers can use strategies with low specificity (like "huh?"), they can use question signs to formulate repair (like "Who is that?") and they can use more specific guesses of what the trouble source was (like "Trudy?"). Similarities have also been found with respect to the interactional functions of specific semiotic resources such as pointing, palm up and eye gaze (McKee & Wallingford 2011; Shaw 2019; Beukeleers, Brône & Vermeerbergen 2020; Ferrara 2020; Gabarró-López 2020; Lepeut 2021).

Other work examining patterns of turn-taking in signed conversation have drawn attention to how modality differences between signed and spoken languages manifest in the organisation of interaction (e.g. C. Baker 1977; Coates & Sutton-Spence 2001; McCleary & de Arantes Leite 2012; de Vos, Torreira & Levinson 2015; Girard-Groeber 2015). While signers tend to adhere to the widely accepted universal of conversation that unfolds one turn at a time (Sacks et al. 1974), their ability to perceive the previous turn, while preparing the articulation of their own turn results in tightly timed exchanges with more frequent overlaps than seen in spoken conversations (Coates & Sutton-Spence 2001; Lackner 2009; Girard-Groeber 2015).

In the words of Shaw and Lepuet (2022) "the time is ripe" for the study of sign language in interaction, and indeed there is growing interest in examining the interactional features of signed conversation. Nevertheless, the range of signing communities being studied so far has been quite limited. Unlike work on spoken interaction, which has grown to incorporate research from a relatively diverse range of spoken languages (Floyd 2021), sign language interactional research (and sign language research at large) has largely focused on a national sign languages used in the Global North, with very little description of interactional practices of sign languages used in small communities in the Global South.

3 Sign language documentation

3.1 Sociolinguistic typology and structural differences in sign languages

In the past 20 years there has been a dramatic increase in the number of sign languages being documented and described around the world (Hou & de Vos 2021). This explosion of descriptions has led to the new field of *sign language typology* (Zeshan & Palfreyman

2017), and an increased interest in classifying sign languages into groups based on their structural and sociolinguistic properties.

Sociolinguistic typology of sign languages refers to the classification of sign languages based on their socio-demographic features or feature profiles (Schembri et al. 2018). This results in dichotomies that centre around particular features such as (presumed) language age ('*emerging* v *established'*, '*young* v *old'*), context and community of use ('*rural/village* v *urban'*) and network structure and size ('*micro* v *macro community'*) (Hou & de Vos 2021). Often, categories are not clearly delineated and confusingly overextended in the literature (for a critical review, see Hou 2016; Reed 2019). Take the category of '*village sign language*', a label popularised by Zeshan and de Vos (2012). The prototype of this category is often described as a sign language that arises and is used among a small, tight-knit single village community, much like the users of Kata Kolok in Bali (Marsaja 2008; de Vos 2012). However, it is often also used to refer to very different situations that are far from prototypical: for example, to describe Providence Island Sign Language, which is used across several villages on a single island (Washabaugh 1986) and Inuit Sign Language, which is used across a vast region of Canada (Schuit 2014). As Kusters (2010: 13) points out, these typologies are often oversimplified and "give the impression of being theories in search of data, instead of the other way around".

These socio-demographic distinctions have also been mapped to presence or absence of specific structural features (Meir et al. 2012; de Vos & Pfau 2015). In this vein, researchers often generalise observations about structural properties of one small language to other languages of similar sociolinguistic type. One example is the widely accepted idea that small sign languages have high degree of lexical variation, or low

degree of conventionalisation, when compared to large sign languages (de Vos & Pfau 2015). This claim appears to generalise findings from two direct comparisons of small and big sign language lexicons, to other small sign languages: specifically Providence Island Sign language relative to American Sign Language (Washabaugh 1986) and another small sign language, Al-Sayyid Bedouin Sign Language relative to another big sign language, Israeli Sign Language (Meir et al. 2012). Like the claim of low conventionalisation, several other generalisations that have been extended across small sign languages are framed around structural deficits, including claims about lack of phonology (Sandler, Aronoff, et al. 2011) and lack of spatial modification of verb signs (Padden et al. 2010). Such generalisations often go long unchallenged (see however, Lutzenberger 2022) and have contributed to the framing of small sign languages as underdeveloped or 'immature'.

In fact, despite the abundance of hypothesizing about the sociolinguistic roots of specific features, it is very hard to narrow down causative links given the difficulty of isolating social variables in natural language settings. For example, in a recent study, Bisnath (submitted) examines the idea that institutionalised education may be at the root of the presence of mouthing in sign languages: a prediction that would explain the lack of mouthing described in two small sign languages, Al Sayyid Bedouin Sign Language (Meir et al. 2012) and Kata Kolok (Marsaja 2008). To explore this, she examines the use of mouthings across 37 different sign languages and finds that mouthing is used across almost every language in the sample, arguing that "a more granular analysis with an emergent perspective might be more useful in understanding how social and linguistic features are related" (Bisnath submitted).

In sum, the new trend of classifying sign languages by their socio-demographic features has shaped how we think about but also how we research sign languages in small communities. This has led to research and descriptions that reduce languages to typological data points, and feed into characterisations of small sign languages as underdeveloped or immature (Braithwaite 2020b; Hou & de Vos 2021). Nevertheless, the typological claims that emerge are questionable and may not hold up to more rigorous methods of direct comparison (e.g. Lutzenberger 2022; Bisnath submitted).

3.2 Who researches small sign languages and how do they do it?

To fully appreciate the literature on small sign languages, it is important to reflect on who produces research on in this field. This work is usually done by hearing researchers from the Global North, based at institutions in the Global North, who have relatively small budgets and research teams, when compared to those researching large national sign languages of the Global North. Often there is one person who has done most linguistic research on a small sign language, and sometimes when that person steps away from the topic, all publication and research on that language stops, for example, as in the case of Inuit Sign Language (Schuit 2014) or Country Sign (Cumberbatch 2012). As a result, many small sign languages have been published on by a single scholar, have one-off descriptions and have not been revisited in detail.

There are, however, some exceptions to this. Kata Kolok, a sign language of Bali, has had a longer sustained period of linguistic research and larger set of publications than most small sign languages (Marsaja 2008; de Vos 2012; Lutzenberger 2022). Adamorobe Sign Language, used in a Ghanaian village, is an example of a language that has been researched by scholars with different identities (deaf/hearing, Ghanaian/non-

Ghanaian) using different methods (task-based elicitation/naturalistic conversation/participatory ethnographic research) for a longer period of time (Nyst 2007; Kusters 2015; Edward 2021). Signing traditions in the Mayan Yucatan have been described by various different researchers and have been called different names based on the group of signers studied: including Chican Sign Language (Escobedo Delgado 2012), Maya Sign Language (R. E. Johnson 1991) and most recently Yucatec Maya Sign Languages (Safar 2020).

In these cases, longer histories of documentation, varying data types and varying researcher perspectives have enriched how we conceive of the language and community. Revisiting languages over a longer period of time can give perspectives on changes. In the case of Adamarobe Sign Language in Ghana, Nyst, a hearing Dutch researcher (2007: 195) initially notes an apparent lack of entity classifiers in the language, based on her corpus data of spontaneous signing and a story-retelling task. Edward, a hearing Ghanaian scholar, finds new evidence of Adamorobe Sign Language users using classifiers in data from a different story retelling task collected more than a decade later (Edward 2021: 234), suggesting language change in the intervening period of time. Identity and researcher positionality also plays an important role in research findings, and there is much to be gained by combining diverse perspectives on the same signing community. While Nyst (2007: 27) notes that deaf people in Adamorobe do not have a sense of distinct deaf identity, Kusters (2012a), a deaf Belgian researcher, observes a sense of feeling the same among deaf villagers given shared lived experiences.

In sum, having research from different people, with different perspectives can generally help develop a more multi-faced view of any language situation. This often does not happen for small sign languages: long term research projects in small signing

communities are considerably less common and published perspectives are often limited to researchers from specific academically privileged positions (e.g., hearing, from the Global North). However, in cases where more varied perspectives are available, for example that of Adamorobe Sign Language, by having both hearing and deaf, local and foreign researchers, we gain a richer picture of the language structure and use.

3.3 The rise of sign language documentation and corpus making

In the recent rise of sign language documentation, corpora have become important both to collect and preserve sign language data and as tools for language description and linguistic research. The first sign language corpus projects began in the 2000s (e.g. Sign Language of the Netherlands/NGT: Crasborn, Zwitserlood & Ros 2008; Australian Sign Language/Auslan: Johnston 2008; British Sign Language/BSL: Schembri et al. 2013; Swedish Sign Language/STS: Mesch & Wallin 2015), and were largely concentrated on the sign languages of the national deaf communities in the Global North. More recently researchers working on sign languages used outside the Global North have begun creating corpora as part of documentation and description efforts, both for national languages (e.g. Indonesian Sign Language/BISINDO: Palfreyman 2019) and local small languages (e.g. Adamarobe Sign Language: Nyst 2007; Kata Kolok: de Vos 2012).

Some aspects of sign language corpora are accepted as relatively standard across the board. For example, most corpora following the model set by the Auslan[2] corpus (Johnston 2008), aim to include different genres including both task-based

[2] Auslan is the national sign language used in Australia, and has also been referred to as Australian Sign Language in the literature. In this dissertation, I use the name Auslan in order to avoid erasure of other sign languages used in Australia.

elicitations such as story retellings and picture or writing based sign elicitation tasks as well as semi-spontaneous conversation among pre-arranged constellations of signers (dyadic and/or multi-party). Other choices are more varied and contentious. For instance, it has become clear that corpus projects focused on large signing communities tend to prioritise (sighted) deaf people who grew up with a sign language from birth (often called *native signers* signers) a preference that has recently been problematised (Costello, Fernández & Landa 2008; Hochgesang 2019). On the other hand, corpora focused on small singing communities have taken the approach of including data from hearing signers, as they are considered core to the signing community (de Vos 2016). As corpora become increasingly popular methods for language documentation, researchers have begun to highlight the importance of transparency and reflection in methods (Schembri 2019).

The creation and annotation of sign language corpora has created the opportunity for sign language corpus studies (Fenlon et al. 2015). These studies look at large samples of existing data to ask questions about sign language use. These studies can be cross-linguistic, incorporating data from different language corpora, such as the study of McKee and colleagues (2011) who examined subject omission across both British Sign Language and New Zealand Sign Language. Most often however, they are single language studies, such as Bauer's (2019) study of mouthing in Russian Sign Language. While corpus-based sign language research has largely been concentrated on large sign languages, several researchers working with small signing communities have utilised corpora as the basis of descriptive research (e.g. Nyst 2007; de Vos 2012; Safar 2020; Ali 2022).

3.4 Testing claims with conversational data

Corpus research offers an alternative to traditional linguistics method of eliciting grammatically judgements from a small set of highly controlled participants (Hodge & Goico 2022), and recently sign language researchers have turned to conversational data within corpora to test existing claims made using more introspective methods against how language is used in communicative settings. The results of these studies have contradicted existing claims, adding important nuance about variation within the language community (e.g. Oomen & Pfau 2017; Fenlon, Schembri & Cormier 2018; Klomp 2019; Oomen 2021; Lutzenberger, Pfau & de Vos 2022).

For example, in a corpus based study, Fenlon and colleagues (2018) test the assumption that spatial modification of indicating verbs is obligatory in British Sign Language (e.g. Morgan, Barrière & Woll 2006). Using a corpus of naturalistic conversation among deaf BSL signers, Fenlon and colleagues provide evidence that spatial modifications are not obligatory. They instead offer insight into linguistic factors, such as animacy and constructed action, that govern variation in use of spatial modification among BSL signers in their sample.

These research methods can also be used in research on small sign languages when conversational data is available. For example, Lutzenberger and colleagues (2022) provides an example of explicitly testing observations within the same language. They examine Marsaja's (2008) claim of obligatory negation markers in Kata Kolok, finding that supposed patterns do not hold against conversational data among deaf signers, and instead find age-based variation in patterns of negation. This is in line with findings from large sign languages that have challenged similar rigid claims about negation strategies

(see for Sign Language of the Netherlands: Oomen & Pfau 2017; for Auslan: Johnston 2018; for Polish Sign Language: Kuder 2021).

This method of testing claims is not yet the norm in the field, and limited to sign languages for which large, annotated sets of conversational data are available. Nevertheless, the findings that do exist highlight the discrepancies between observations and claims based on language in use and those based on more controlled methods. In doing so, they demonstrate, as pointed out by Fenlon and colleagues (2018: 110), "the danger in making claims about typical language use in the sign languages population when investigating language in other contexts". It is clear that using conversational corpora to test strong claims can deepen our understanding about frequency and variation of structures within a language community.

4 This dissertation

4.1 The problem and case study

The work in this dissertation is motivated by three major issues: (i) work on small sign languages has been primarily framed around their typological uniqueness; (ii) claims made about sign languages are frozen in time; (iii) work on small sign languages are often based on elicited data and lack depth. In this dissertation, I present the case study of Providence Island Sign Language (PISL), a sign language that emerged and is used among deaf and hearing residents of a small Caribbean island (see Chapter Two). PISL was one of the first small sign languages to be documented by linguists in a series of works from linguist William Washabaugh and colleagues in the 1970s and 80s (Washabaugh, de Santis & Woodward 1978; Washabaugh 1979a; Woodward 1979;

Washabaugh 1980a; 1980b; Woodward 1982; Washabaugh 1985; 1986; Woodward 1987).

The first problem illustrated by the PISL case study is that research on small sign languages is often framed by their claimed typological uniqueness. Small sign languages are most often studied in opposition to something else, as their value to the field of research is rooted in demonstrating how they are different from other languages (Braithwaite 2020b). This results in overemphasizing differences, and often exoticisation. In the case of PISL, as the first language of its kind to be written about, Washabaugh often drew comparisons to the only other sign language that had been well documented at the time: ASL. Where he found differences, he emphasized them. For example, he stresses the fact that PISL uses an extremely high degree of multichannel signs (signs that use both manual and non-manual articulators) in the lexicon when compared to ASL (Washabaugh 1986: 56). Today, as sign language research has progressed considerably, we know that far from being rare, the use of non-manual components is common in the lexicons of many languages used in various different sociolinguistic contexts (Bank 2015; Pendzich 2020; Lutzenberger et al. under review).

The second problem that the case of PISL illustrates is that claims about small sign languages are frozen in time. This is a general problem of the field: old ideas are held onto and cited without contextualising them in the time they were made. The issue is exacerbated in small sign language research because claims are not often revisited and languages often have a relatively short burst of documentation. PISL has been the subject of little follow-up research since the original research in the 1970s and 80s; after Washabaugh stopped working on PISL, it has barely been revisited in 50 years. However, Washabaugh's ideas are widely cited in the growing research on small sign languages

(e.g. Meir et al. 2010; de Vos & Pfau 2015), broader sign language typology (e.g. Coons 2022) and sign language emergence/evolution (e.g. Mudd, de Vos & de Boer 2022). An example of this is the claim that PISL has a relatively high degree of lexical variation compared to ASL: a claim originally based on a methodologically questionable comparison (Washabaugh 1986: 47). While we know today that ASL has in fact a high degree of lexical variation (Lucas, Bayley & Valli 2003), given the lack of follow up research on PISL, the claim has never been re-examined. Furthermore, the claim has been often cited and extended without recontextualising it in our current understanding of sign language linguistics. Specifically, it is often suggested that other small sign languages have particularly high variation (de Vos 2011; Meir et al. 2012; de Vos & Pfau 2015), despite growing evidence about substantial lexical variation in many other large sign languages communities (e.g. British Sign Language: Stamp 2015; German Sign Language: Hanke et al. 2017).[3]

The third problem illustrated by the PISL case study is that linguistic claims are generally based on task-based elicitations, leaving us with little understanding of how language is actively used. Most small sign language research is based on task-based elicitations and considerably less is based on conversational data. This is for practical reasons: tasks like story retelling and lexical elicitation are critical tools for language documentation and working with conversational data is often impractical given limited time, expertise and budget for annotation. However, conversation focusing solely on task-based elicitation methods may skew our perspectives on everyday language use, which may be much better represented in conversational data (Fenlon et al. 2018; Hodge &

[3] See however, work by Mudd and colleagues (in prep) who directly test this idea of sociolinguistic factors affecting variation a sample including both micro- and macro-community sign languages.

Goico 2022). In the case of PISL, many of Washabaugh's observations about the language are based on elicitations. One pertinent example is Washabaugh's observation that PISL signers do not use name signs, a claim is based on an elicitation task in which Washabaugh sat with signers and pointed to different houses and signed "Who lives there?" (Washabaugh 1986: 69). While observations based on elicitation tasks are often an important starting point, they have become central to our investigation of small sign languages, leaving us with very little description of what everyday interaction looks like among signers in these communities.

Taken together these issues reveal a gap in the literature when it comes to research that (i) examines small sign languages from a primarily descriptive, non-comparative framework, (ii) revisits and re-evaluates old claims on small sign languages, grounding them in current understandings and (iii) provides insight into language use in less task-based but more conversational contexts. This gap is precisely what this dissertation seeks to fill.

4.2 The approach and research question

In response to these issues, this dissertation sets out to document and describe the ways in which PISL signers carry out fundamental features of conversation. It approaches the topic through the following general research question:

How do claims about how deaf PISL signers use language stand up today when tested against conversational data?

Breaking down this question, I examine two specific domains as case studies, resulting in the two sub-questions:

How do deaf PISL signers introduce new referents into conversation? (Chapter Three)

How do deaf PISL signers perform other-initiated repair? (Chapter Four)

In order to approach these research questions, I collected a novel corpus of data (Omardeen 2019), and performed empirical research building on previous observations about PISL. Using primarily conversational data, I set out to examine both meaning-making and interactional processes, while adopting an approach that centres descriptive semiotics. Throughout this dissertation, I have tried to take a transparent and reflective approach to documentation and description, and use rigorous methods to examine old claims and recontextualise them in the current understandings of sign language linguistics.

4.3 Summary of chapters

This dissertation consists of three independent manuscripts. Chapter Two provides an overview of the research setting and the documentation project that provided the basis of data for the PhD research. This chapter reflects on the challenges of planning and implementing the PISL documentation project with an emphasis on sampling signers from the language community. Chapter Three and Chapter Four focus on how PISL signers perform everyday functions in dyadic deaf-deaf conversation, through the lens of two case studies: person reference and other-initiated repair. Chapter Three examines how

signers perform reference to non-present persons, addressing the claim that person reference in PISL is confusing in part due to the absence of name signs. I examined 1 hour and 27 minutes of dyadic signed conversation to find 92 instances in which signers refer to non-present individuals. I then used these instances to describe the variety of strategies PISL signers use to refer to do person reference, including the use of name signs among other things. Chapter Four examines another everyday conversational act, namely conversational repair, which is claimed to be infrequent in deaf-deaf PISL conversation. I looked at 62m of signed conversation and identified 224 instances in which deaf signers performed other-initiated repair. I then described the form and distribution of these strategies and discussed them in relation to PISL language structure and modality. Chapter Five provides a general discussion of the major findings of the dissertation, and concluding thoughts and directions for future research.

The work in this dissertation is based on data from a documentation project funded by the Endangered Languages Documentation Program (see Chapter Two). Together with various collaborators, I have collected, created and curated various resources related to a documentation of Providence Island Sign Language (Omardeen 2019). The resulting collection can be found in the Endangered Languages Archive (ELAR) catalogue at http://hdl.handle.net/2196/00-0000-0000-0013-2411-8 and includes (i) a lexical database of PISL signs and (ii) online catalogue of elicited and spontaneous data, fully complete with metadata and partially annotated.

4.4 A note on theoretical framework

The research in this dissertation is undertaken within a semiotic framework that de-emphasizes boundaries between named languages and modalities, but focuses instead on how meaning is made using language.

Sign language research has long been preoccupied with distinguishing sign and gesture (see Goldin-Meadow & Brentari 2017 and related commentary). This has also become an integral part of research into small sign languages where there is often a particular emphasis on how non-linguistic gestures undergo processes of conventionalisation into linguistic signs (e.g. Pfau & Steinbach 2011). However, distinguishing between gesture and sign is a difficult task in even for well-studied sign languages and well-researched phenomenon (e.g. Okrent 2002). The distinction between gesture and sign is rooted in the idea that communication is separated into non-linguistic and linguistic components, and arose early as a strategic essentialism the field (Kusters & Lucas 2022): in order to establish sign languages' equivalence with spoken languages, research has needed to fit them into a tradition of linguistic research that has focused on speech as the core linguistic aspect of communication.

However, there is mounting evidence of the centrality of multimodal signals in communication, and a growing agreement that language is inherently multimodal (e.g. McNeill 2000; Kendon 2008; Holler & Levinson 2019). Recently, scholars have highlighted the importance of studying multimodal language (Perniss 2018) and explicitly criticised the adaptation of spoken language frameworks to describe sign (Kendon 2014). More and more, researchers are calling to dismantle the dichotomy of sign and gesture, and instead to view language as comprising semiotically diverse components arranged into multimodal utterances (Kendon 2008; 2014; Enfield 2009).

Partially in response to the legitimising of sign language linguistics and the study of sign language linguists have also been particularly concerned with creating bounded notions of sign languages that involves separation and classification of the different observable components of language into core features and peripheral ones. For example, early analyses of the American Sign Language lexicon have separated out core, 'native' ASL signs out from more peripheral 'foreign' vocabulary such as initialised signs that incorporate elements from a manual alphabet (Padden 1998; Brentari & Padden 2001). To take another example, mouthing (the articulation of spoken words by signers) is widely considered a contact phenomenon in sign languages, and some traditions of research draws a line around it as 'code-blending' or 'code-mixing' speech into sign, separating it from core sign language (Johnston, van Roekel & Schembri 2016; Giustolisi, Mereghetti & Cecchetto 2017).

Not all approaches are so bounded. Kusters and colleagues (2017) advocate for a more flexible analysis, incorporating the diverse 'semiotic repertoire' available in meaning making, including for example, pointing to real world objects, writing in the air or on a cell phone and embodiment. This approach has been particularly successful in describing translanguaging situations in which multiple named languages are commonly in use, and Kusters and colleagues (2017) suggest that this utility can be extended to signing communities, where multiple languages are also in use.

My approach in this dissertation is one that takes a flexible and inclusive to language. Instead of describing PISL with a focus on bounded categories such as 'gesture' and 'sign' or 'PISL' and 'spoken Creole', I focusing describing the semiotic repertoires in used among signers. I feel it is appropriate particularly given the fact that signing in Providence is relatively under-documented, to approach from a broadly

descriptive perspective. In my descriptions, I try to include all multimodal aspects of communication, where it is methodologically possible. My approach is therefore informed by a notion of language that is decidedly multimodal, and all comparisons with other languages, spoken and signed, are made within this understanding.

4.5 A note on language naming and categorisation

In this dissertation I refer to the tradition of signing used in Providence as Providence Island Sign Language. In his research, Washabaugh describes signing in different communities around the island with limited contact, but unified the community under a single language name (Washabaugh 1986). This is not uncontroversial: more recent research has characterised the situation as different home signing systems (Cortés Bello & Tovar 2019). In fact, decisions about naming languages are ideologically loaded, and less often motivated by structural properties of language, but more by political and theoretical context (for discussion, see Palfreyman & Schembri 2021; Safar 2021).

For the purpose of this dissertation, I use the term Providence Island Sign Language for several reasons. From my experience, deaf signers in Providence seem to communicate smoothly with each other, and despite clear networks of social interaction (Washabaugh 1979a), deaf and hearing signers have contact and sign with each other across networks. Providence residents also have a strong sense of social unity, and my impression from my interactions with people in Providence is that signers (deaf and hearing) understand and value the benefits of a single label of PISL. Thus, in keeping with Washabaugh and colleagues, I refer to PISL as a single entity: with diversity and variation within, much as seen in other signing communities (e.g. Lucas et al. 2003; Stamp 2015;

Mudd, Lutzenberger, de Vos, et al. 2020; Safar 2021). But I also stress that this label is subject to re-evaluation particularly with ongoing input from the community of signers in Providence.

Next, for the purposes of this dissertation, I adopt the term *micro-community sign language* when describing and comparing PISL to the wider sign language literature. As discussed in section 2.1, the sociolinguistic categories that have sprung up to classify sign languages used in small communities are often confusing and come with their own ideological baggage (Kusters 2010; Braithwaite 2020b; Hou & de Vos 2021). My choice to use micro-community sign language is motivated by the term's descriptive focus on network size, which I consider relatively neutral and accurate in describing PISL, particularly when compared to other ill-fitting and less informative labels such as *village sign language*. Nevertheless, I would like to stress that these labels emerge from a comparative perspective, and that my approach in this dissertation is to focus first on description, and use comparisons to other languages as a secondary step.

5 Fieldwork and positionality

In this dissertation, I describe in detail the methods used to collect and analyse the data, the conditions under which the data was collected and the composition of the research team. A critically important yet often overlooked consideration for contextualizing academic work is a reflection on the researchers motivation, stance and position with respect to the language community (Dikyuva 2012; e.g. Kusters 2012b; Hou 2017). In service of this, this section presents a brief reflection on my own background and role in the research.

I am a Trinidadian. My ethnicity is mixed with Indo-Trinidadian heritage on one side and Mestizo Belizean heritage on the other. I am hearing, and began learning American Sign Language during my undergraduate linguistics degree in the United States. I continued to study linguistics in the Netherlands and was drawn into sign language research (primarily on Sign Language of the Netherlands). As my interest in sign language linguistics developed, I became more interested in sign language in Caribbean contexts. This was for several reasons: first, I felt like a double outsider in European/North American sign language research, being both hearing and non-European/North American. As interesting as it was to connect with and learn from the deaf communities and sign language researchers in these places, I wanted to do research in place where I felt I had more shared cultural and linguistic context. There seemed to be no shortage of linguists interested in working on European and North American sign languages, but I wanted to both learn about and contribute to producing knowledge about communities closer to home.

As I became more interested Caribbean sign languages, I reached at the University of the West Indies in Trinidad and connected with Ben Braithwaite, a hearing British university lecturer and Ian Dhanoolal, a deaf Trinidadian activist, researcher, and sign language teacher. In collaboration with them, I designed a project to research in Providence, a place I had never been before but had only read about in linguistics literature. Ben and Ian had visited Providence on previous trips and made connections with deaf and hearing people there, it was only with these interpersonal relationships was it possible to plan, design and carry out the fieldwork. Ian in particular played a critical role, agreeing to join me in the field: as a deaf person with tremendous experience around

the Caribbean, and specific experience in Providence, without his input this project would not have been possible.

During our trip, several aspects of Ian and my identities played a role in our experiences. Obvious visible things affected how the general public interacted with us and our first impressions. First, we looked quite different from the other people around us. Ian and I both have East Indian features, and look ethnically different from both the residents of the archipelago as well as the mainland Colombians and average white tourists. Second, we were obviously different in the fact that we were visitors who walked around signing instead of speaking. Our signing became more contextualized as we spent more time with Carlos Newball, a local deaf man who joined our research project. Carlos' (and to some extent Ian's) familiarity with deaf and hearing islanders meant that despite being visibly foreign, we were welcomed with warmth and curiosity.

Our Caribbean-ness was also in many ways helpful to the project. For me, my appearance as a foreigner made people approach me speaking Spanish, the more formal language in Providence. However, hearing people were quickly intrigued to realise that while I did not speak *their Kriol*, the language of everyday conversation in Providence, I did speak *a creole*: as one person put it "You talk like us, but different". While the creole spoken in Providence (termed San Andres-Providence Creole in the literature: Bartens 2013) both sounds and is structured very differently from the creole spoken in Trinidad (termed Trinidadian English Creole in the literature: Mühleisen 2013), it is considerably closer to the creole spoken in Belize (termed Belizean Creole in the literature: Escure 2013): here my experiences listening to my Belizean family while growing up made it easier to understand. Ian, in turn, drew on his vast experience with Caribbean sign languages, often pointing out structural similarities between PISL and regional sign

languages including Trinidad and Tobago Sign Language (TTSL). Our Caribbean-ness also provided a point of connection for getting to know PISL. For example, we went with deaf people to their gardens to try and get to know local signs. Instead of being a straightforward exercise in collecting lexicon, it became an exchange of signs across languages for the same fruit, between Ian's TTSL and the informants' PISL. I was personally delighted when my own Caribbean context made signs transparent to me, such as the sign for *work*, made by the hand slashing like a machete, or the sign for cheating in a relationship, made with the **i** handshape at the forehead, picking up on a shared underlying image as the Trinidadian word "*horning*".

Not all aspects of our identity made the research project smooth. For example, my own notions of properness, intrusion and privacy undoubtedly influenced how I interacted with people and how we scheduled participants, and often were at odds with my overly enthusiastic push to collect data (no doubt a result of my relative inexperience with linguistic fieldwork). This was balanced by Ian's commitment to supporting and contributing to community organizing among deaf islanders, which led us to divide our time between activities devoted to collecting recordings and activities devoted to working towards the goal of improving the lives of deaf people in Providence. My own position starting off the field trip as a hearing person with limited signing skills meant that I spent much of the time brokering language between Ian, Carlos, our informants and other hearing people. This was both time consuming but fruitful, and in spending time acquiring skills in PISL, I also learned through Ian about TTSL, the sign language used in my own country.

In sum, my experiences in fieldwork, and the approaches towards research in this dissertation, have been shaped both by my own identity and perspectives as a hearing

Trinidadian and by the team I worked together with in Providence, and their perspectives, and approaches to documentation and community work.

Chapter Two

Sampling Signers in Providence Island

Chapter adapted from:

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Abstract

Providence Island Sign Language is an indigenous sign language of Colombia, used in the Caribbean island of Providence (Spanish: *Providencia*). First described in the 1960s and 1970s, the sign language has received little follow up research. In this paper I introduce a small-scale documentation project of PISL that began in 2019 and is ongoing. I describe the aim, methods and output of this project and reflect on data collection, particularly with respect to sampling members of the language community. This paper contributes to the ongoing discussions around best practices in sign language documentation, by adding a case study focused on sampling

in a micro-community sign language.

Keywords:

Providence Island Sign Language, methodology, sampling, micro-community sign language, meta-documentation

1 Introduction

There is a bias in sign language research: the field is dominated by languages used at the national level across large communities, also referred to as *macro-community* sign languages. On the other hand, languages used on a smaller scale, among specific culturally or geographically bound groups, also referred to as *micro-community* sign languages, are much less-studied and documented. As linguists become more interested in documenting and describing micro-community sign languages, however, it becomes increasingly clear that data collection methods designed for macro-community settings are not one-size-fit-all. The widely divergent sociolinguistic settings found across different signing communities have resulted in quite different methods being used in different projects.

One of the clearest examples of this is in the domain of sampling: the little literature that does exist that discusses who to sample highlights the diversity found across different projects. This is because the core question of sampling - *who forms a representative portion of the signing community?* - is addressed differently across settings. Take the example of audiological status. Deaf people who use sign language as their primary means of communication are at the centre of any signing community. In the case of many macro-community corpus projects, the sampling begins and ends with these deaf signers. Projects even often concentrate solely on deaf signers with deaf parents, who are considered the most fluent language users (Fenlon et al. 2015). Other members of any signing community are hearing signers: friends, family members and other people who use sign language to communicate with deaf people. For micro-community sign languages, these signers are also often included in data collections (Nyst 2015; de Vos 2016), while they are rarely, if ever included in macro-community samples.

Zooming in on individual communities further reveals the complexity of sampling. This is particularly noticeable in micro-community settings where the small size of the community allows a clear view of the tremendous diversity contained within. A good example is the case of Providence Island Sign Language, a sign language isolate used on a small Caribbean island by its 13 deaf inhabitants and their fellow hearing islanders. The deaf residents of Providence range from very old to very young, some prefer to sign and some prefer to speak, some have lived in the island their whole life and others have migrated from or spent considerable time abroad, for some PISL is their only sign language and for others it is one of multiple. Hearing islanders sign with varying levels of confidence and proficiency and are most familiar with the lexical sign variants used by their closest deaf contact. These various people all belong to some extent to the signing community, but settling on and filming a representative sample of this community is no straightforward task.

This paper provides a meta-documentation (Austin 2013) of a small sign language documentation project in Providence Island. I discuss the theoretical and practical concerns encountered during the creation of a corpus of Providence Island Sign Language (PISL), presented as a case study of sampling in a micro-community sign language. Section 2 introduces the signing community and outlines previous research. Section 3 introduces the aims, methods and output of the PISL Documentation project including a brief overview of the resulting dataset. Section 4 provides in depth reflections about the challenges of sampling and reflects on how these challenges relate to other sign language documentation projects. Section 5 concludes and offers future directions for PISL documentation.

2 Providence Island Sign Language

2.1 Demographic Sketch

Providence is part of the department of San Andres, Providence and Santa Catalina (see Figure 2-1), a culturally, ethnically and geographically distinct region of Colombia. The population of Providence is relatively small, currently estimated at 4500 people in 2018 census (DANE 2018), despite significant increase in the last 50 years. They mostly comprise of Raizales, a minority ethnic group descended from settlers and slaves brought to the islands in the 1730s (Washabaugh 1983; Bartens 2011). The island is 17km^2 and is mainly populated on the coast, with the mountainous interior used for farming. Historically, villages were relatively isolated, however travel within the island was transformed in 1961 with the creation of a ring road connecting the coastal villages (Washabaugh 1979a). Inter-island travel is common and residents of the two smaller islands often visit San Andres to see family, receive medical care and do shopping.

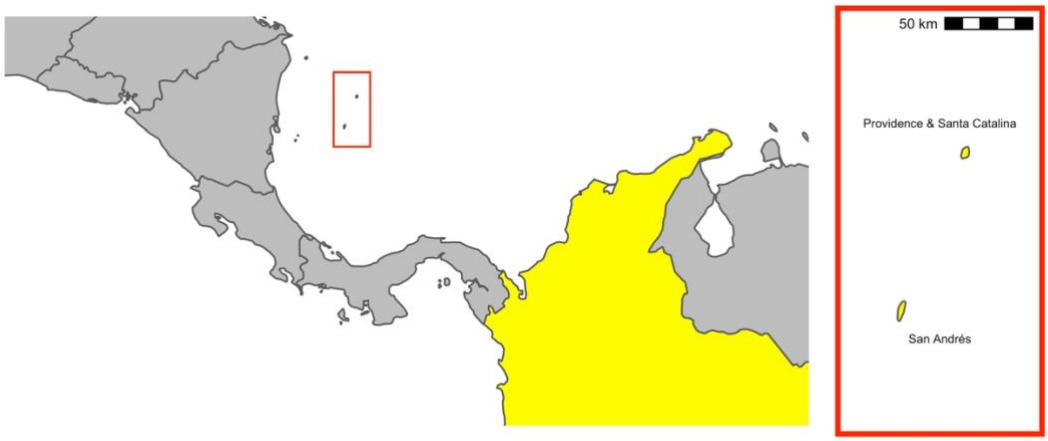

Figure 2-1: The location of the archipelago of San Andres, Providence & Santa Catalina

Providence is a multilingual place where several languages are used in day-to-day life. There are three major spoken languages used in the island. An English-lexifier creole

(termed Islander Creole English in the literature) is the primary language of everyday use in Providence (Bartens 2013). Spanish is commonly used in official settings, as a result of pressures for national assimilation from the central government (Ramírez-Cruz 2017). English is found in religious settings, especially in some churches (Ramírez-Cruz 2017; García León & García León 2019). In this multilingual setting, the creole is the dominant language, however there is frequent borrowing and code mixing with Spanish (Bartens 2013), especially among younger generations.

In addition to these spoken languages, there is also a sign language in use that has emerged on the island due to sustained high prevalence of deafness. The island's history of deafness traces back to the late 1800s with the birth of the first deaf islander (Washabaugh 1986: 18). Since then, the number and proportion of deaf islanders have fluctuated: a high of 20 deaf people comprising 0.66% of the population was recorded in the 1980s (Washabaugh 1986: 9) and followed by a gradual decrease to 17 deaf people comprising 0.35% of the population in the 1990s (Lattig et al. 2008) and today there are 13 deaf islanders, who make up 0.28% of the island's population and living distributed around the villages of the island (see Figure 2-2). There are multiple causes of deafness in Providence, including sporadic non-genetic deafness, as well as at least two distinct genetic sources (Lattig et al. 2008). This may make the future prevalence of deafness, and in turn the continued existence of the sign language, particularly sensitive to demographic and cultural changes (Braithwaite 2019).

The 13 deaf islanders range from 8 to 81 years old and have diverse backgrounds and lived experiences. Some have lived in Providence their whole lives, others have lived in San Andres for an extended period of time, and at least three younger deaf people have lived on the mainland (in Panama and Colombia). Deaf people live in villages with

both historically many and historically few deaf inhabitants, and there are three living members of a multigenerational deaf family. Preferred communication practices also vary from person to person: some deaf people prefer speaking to communicate with hearing people, whereas others primarily rely on signing. Some signers have broad communication networks, spanning across the whole island (and sometimes the neighbouring island) due to their occupation or family ties, others interact mainly with their immediate family.

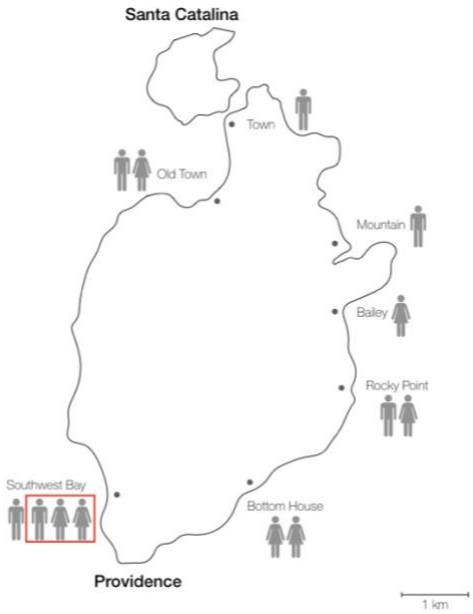

Figure 2-2: Distribution of deaf islanders in Providence (red box indicates family relationship).

One unifying experience is that deaf people live and interact mostly with hearing relatives and neighbours, a feature that shapes the signing landscape of the island. Unlike in macro-community sign settings, in Providence there are no clubs or schools specialized for deaf people to learn and use PISL with one another. There are some strong individual relationships among deaf people due to age, family relationships and geographic proximity. However, deaf people sign most often with hearing people, and

signing is used across multiple communication networks that centre on deaf-hearing interactions (Washabaugh 1979a). Hearing signers have varying degrees of signing proficiency, and those who share a household with a deaf person have been described as the most skilled signers (Washabaugh 1979a). Their signing is often most closely related to their deaf family member: they use the same lexical variants (Washabaugh 1986: 52) and sometimes report less success in communication with other deaf people. Notably, there is smooth communication among most deaf people themselves, despite variation across communication networks.

2.2 Linguistic Research

Providence Island Sign Language was first described in the 1960s and 1970s in a series of works by creolist William Washabaugh and colleagues (Washabaugh et al. 1978; 1978; Washabaugh 1979a; 1979a; Woodward 1979; Washabaugh 1980b; 1980a; 1981; 1986). PISL was one of the first micro-community sign languages to ever be researched, and writings from this period established several typological differences between PISL and well-studied macro-community sign languages of the time. For example, Washabaugh found PISL to use considerably more non-manual elements in sign formation than the macro-community sign language American Sign Language (1986: 56), and even to have some purely non-manual signs (1978: 98). Woodward (1978) found PISL to have among the fewest signs in the domain of kinship in a comparison of 20, mostly macro-community sign languages. PISL signers were also shown to often point to things in the real world to refer to associated concepts (Washabaugh et al. 1978). Signers used this strategy, known as metonymic pointing, for various types of referents including

colours, places and people – a notably different referential system than those that had been documented in macro-community sign languages.

PISL has received a great deal of academic attention for such a small language, yet, most observations about its uniqueness were made at a time when there was little typological research on sign languages. Many of these claims arose from comparing the structural and sociolinguistic features of PISL with languages from very different ecological niches, that is national, institutionalized macro-community sign languages. Since then, many more sign languages around the world have been described by linguists. As more micro-community languages are documented, they have been shown to share various typological features thought to be unique to PISL, such as metonymic pointing and small sets of kinship signs (de Vos & Pfau 2015). Furthermore, recent research has also revealed that many hallmark features of PISL are also frequently used and play an important role in both macro- and micro-community sign language alike; for example non-manual elements are shown to be important features of sign formation in German Sign Language, a macro-community sign language (Pendzich 2020) and Kata Kolok, a micro-community sign language (Marsaja 2008; Lutzenberger 2018).

Against the backdrop of a growing interest in documenting non-institutionalized micro-community signing settings (Kusters 2010; Braithwaite 2020b), new research on the signing situation in Providence has emerged. This work has focused largely on documenting and updating the sociolinguistic situation. Two recent MA theses explore the sociolinguistic situation: Hooker O'Neil (2016) focuses on family life and the communicative practices of individuals, while Cortés Bello (2016; 2019) discusses social networks of deaf signers. Most recently, Braithwaite (2020c) describes the evolving sociolinguistic situation on the island. Within these projects, there has also been some

basic lexical elicitation conducted among deaf islanders (Cortés Bello 2016; Braithwaite 2020a). In addition to the strong sociolinguistic focus, all studies so far have been based on small, elicited datasets.

The existing body of work on PISL presents a rich potential for in-depth follow-up research, and much remains to be explored. Follow up studies can evaluate typological claims by collecting a well-balanced diverse set of data from signers, allowing for a comparison of elicited and spontaneous signing. Research so far has largely been based on elicitation and field observations; through this many claims about PISL have been generated which can be empirically examined with more spontaneous data. Furthermore, new data from signers who participated in previous research can provide a diachronic snapshot that can be compared to original recordings from the 1970s. This is a unique opportunity to examine language change over the lifetime: as most micro-community sign languages have a relatively short history of documentation, whereas in the case of Providence it is possible to look at an individual's language use at two points 40 years apart.

Finally, with recent social and demographic changes in the island, the future of Providence's signing tradition is uncertain. The number of deaf people on the island has shrunk considerably both in number and in proportion of the population over the past 50 years and it is possible that changing demographics on the island combined with genetic counselling may radically alter the continued incidence of deafness on the island (Braithwaite 2020c). Furthermore, there is mounting pressure among islanders (deaf and hearing) to receive education in the mainland: as a result, three young deaf people have already spent significant time in Colombia and Panama to seek formal education. Increase both in signed multilingualism among young deaf people and awareness of

national sign languages among hearing people appear to be contributing to a shift in attitude towards the PISL. Given these factors, there is a clear and time sensitive motivation to collect data while the signing tradition is still alive, in order to capture a unique aspect of the island's cultural and linguistic heritage.

3 The PISL documentation project

In 2019, supported by the Endangered Languages Documentation Program, a small research team conduced a three-month field-based data collection as part of a project to document Providence Island Sign Language. The core research team was made up of three members: (i) myself (Rehana Omardeen), a hearing sign linguist; (ii) Ian Dhanoolal, a deaf sign language teacher and activist and (iii) Carlos Newball, a local deaf islander. In addition to this core team, other individuals were involved in data collection primarily through conducting interviews. They were: (i) Ben Braithwaite, a hearing linguist at the University of the West Indies who had previously visited the island, (ii) Maureen Hooker O'Neill, a hearing researcher and audiologist from San Andres, and (iii) Carmelina Newball, the hearing mother of Carlos who runs the local cultural centre, the Casa de la Cultura. I include additional biographical information for each of the core team members below.

I, Rehana Omardeen, am a hearing Trinidadian and researcher trained in sign language linguistics. At the time of the project, I had just begun working on my PhD at the University of Göttingen, Germany. I was introduced to sign languages via studying linguistics and had basic signing skills in American Sign Language with some exposure to Sign Language of the Netherlands and International Sign.

Ian Dhanoolal is a deaf Trinidadian researcher and community activist working as a sign language teacher in Trinidad at the University of the West Indies. Ian had experience in Providence from a previous short research trip in 2016 alongside researcher Ben Braithwaite. Ian signs Trinidad and Tobago Sign Language and American Sign Language and has a great deal of multilingual competence from research within the Caribbean region.

Carlos Newball is a deaf islander from Providence who was recruited as a collaborator in the field. Carlos was involved in the previous research trip in 2016 and thus had some experience with language documentation. At the time of the project, Carlos signed mostly PISL, and had some exposure to Colombian Sign Language from friends and the internet.

The primary aim of the project was to create and publish a rich and varied dataset of signing practices in Providence that could be used for linguistic research. In particular, we wanted to collect data that could form the basis for both describing aspects of PISL and examining previous claims about the language. We also wanted to collect data that could serve as a basis for lexical database of Providence signs. In addition, we hoped that the resulting dataset would function as a basis for community resources such as dictionaries, and in doing so help to preserve a critical aspect of the island's cultural and linguistic heritage.

We collected 15h 31m of data, from 5 hearing and 11 deaf signers, as well as 1h 39m of spoken interviews with 4 hearing family members of deceased deaf islanders. When communicating with informants, we used a combination of languages to be best understood. With hearing people, we drew on knowledge of Spanish, English, and Trinidadian English Creole and Islander Creole English. With deaf people we negotiated

communication using a combination of cross-signing (Zeshan 2015a), gesture and our (growing) knowledge of PISL.

The data collected include several different genres from elicitations, to guided interviews to spontaneous conversation. We prioritised both (semi-)spontaneous data and lexical elicitation, as they would provide complementary sources for collecting a lexicon, and would be useful sources to describe and evaluate typological aspects of the language. Table 2-1: Overview of data collected. summarises the data collected and archived in the project. All video data can be found in the Endangered Languages Archive (ELAR) at http://hdl.handle.net/2196/00-0000-0000-0013-2411-8. Work on the lexical database and annotation are still underway and these files will be added to the collection gradually.

Table 2-1: Overview of data collected.

Genre	Sub-Genre	# Recordings	Time (hh:mm:ss)	Description
Elicitation	Lexical Elicitation (Picture-based)	46	04:27:00	Signers are shown photos/objects and name the items to Carlos
	Lexical Elicitation (Other)	3	01:42:03	Object- and word-based elicitation (with deaf and hearing signers)
	Story Re-telling task	23	00:20:56	Signers summarise a movie clip to Carlos
Discourse	Conversation	11	04:42:53	Conversation between two signers (one deaf-hearing pairing, rest deaf-deaf)
Interview	Signed Interview	4	02:22:38	Individual and group interviews conducted in sign by Carlos, Ian, Ben & Rehana

	Mediated Interview	4	01:55:34	Interviews with questions posed by Rehana/Ian in speech/sign and interpreted by either hearing or deaf signers into PISL
	Spoken Interview	3	01:39:05	Spoken interviews conducted by Maureen and Carmelina
Total			17:10:09	

We elicited both lexical and narrative data. The aim of the lexical elicitation was to provide a base for creating a lexical database of PISL and to familiarise myself and Ian with local signs. We first performed a picture-naming task, showing signers pictures and asking them to name the object in the picture by signing to Carlos. We showed groups of pictures that belonged to several themes, such as animals, foods, and household items. This data was collected for 11 of the island's 13 deaf signers. In addition to the picture naming, we performed object-based lexical elicitation with two deaf signers, where we showed them real-world objects and asked for the signs. We also performed one session with one deaf woman and her hearing relative in which we used a mixture of spoken words and photos for elicitation. For narrative data, we collected data from 4 deaf signers. We performed a story retelling task, aimed at collecting directly comparable narrative data from different participants. We presented signers with clips from a locally filmed movie Bad Lucky Goat (Oliveros et al. 2017), and asked the signer to summarise what they saw in the clip to Carlos.

We also collected spontaneous and semi-spontaneous data from deaf and hearing signers in the form of conversations. Because these recordings were aimed at capturing naturalistic conversation between PISL signers, neither Ian or myself were present during the recording in order to minimise the influence of community outsiders. We recorded 11

dyadic conversations (10 deaf-deaf, 1 deaf-hearing) between 7 deaf and 1 hearing signer, totalling 4h 42m. In these sessions, we prepared participants by suggesting themes, but signers largely directed the conversation themselves. These recordings were a total of 4h 42m from 7 deaf signers (including Carlos) and one hearing signer.

In addition, we also collected semi-spontaneous signing in the form of semi-structured interviews. During interviews, one or more team member was present in the recording session and guided the conversation around deaf islanders' life experiences and family histories. We collected interviews using different modalities. For deaf islanders, we conducted interviews both completely in sign but also using a combination of speech and sign. The latter were mediated interviews in which I would ask questions in spoken language and family members would translate them into sign. In one instance, we also performed a mediated interview in sign where a deaf family member translated questions signed by myself and Ian, and interpreted the answers from their deaf relative. We recorded 2h 22m of signed interviews from 4 deaf islanders including individual and group settings and 1h 55m of mediated interviews with 3 deaf signers and their hearing relatives. Finally, we collected spoken language interviews, in which Maureen Hooker O'Neill and Carmelina Newball interviewed hearing people who had close family members who were deaf but were already deceased, a total of 1h 39m from 4 hearing participants.

At several stages throughout the project, we were met with the challenge of first understanding who uses Providence Island Sign Language, and second deciding who of these signers we should film for data collection. Far from being a straightforward question as it is treated in the literature, we encountered many challenges, especially because the signing situation in Providence is very different from that of well-studied macro-community sign languages. The deaf people are a small, highly heterogeneous and loosely

connected group. They are spread across many villages and their main communication partners are mainly hearing people. They use different signs from each other, but seem to understand each other well. Nevertheless, signed settings like Providence are not rare. Several been described recently, for example, in rural Mali (Nyst, Sylla & Magassouba 2012), in the highlands of Papua New Guinea (Reed 2019) and in the Mexican Yucatan (Safar 2020). Nevertheless, this particular ecological niche is highly underrepresented in discussions on methodology of documentation and corpus methods (see however Hou, 2017; Nyst et al., 2012; Safar, 2021). I take the rest of this paper to reflect on how we performed sampling in Providence and how the lessons learned here can extend to other similar and dissimilar signing communities.

4 Sampling PISL signers

4.1 Sampling in sign language documentation

A major aim of documentary linguistics is to collect a diverse and representative sample of a language and, by extension, language users (Woodbury 2003). However, the way in which different sign language documentation projects achieve this is quite variable. Sampling strategies vary considerably and often need to be adapted based on community size and structure. Despite the substantial differences across documentation projects, explicit discussion of sampling has been scarce in the literature. However, as the range of sign languages being documented diversifies, some key considerations have emerged with regard to how to create a representative sample of signers.

While most sign language documentation projects aim to capture sociolinguistic diversity, the sociolinguistic factors that are relevant may differ across communities. For example, in macro-community sign languages used on a national scale, signers' lexical

choices often vary by region (e.g. Lucas, Bayley & Valli 2001; Stamp et al. 2014a). As a result large corpora have made great efforts to sample across regions (e.g., Schembri et al. 2013). In micro-community sign languages, (extended) family or clan membership has been linked to lexical variation (Sandler, Aronoff, et al. 2011; e.g. Hou 2016; Mudd, Lutzenberger, de Vos, et al. 2020; Safar 2021), and thus, efforts are made to sample across these groups. At present, we know much more about sociolinguistic factors that govern variation in macro-community sign languages used in Global North settings, yet given the cultural diversity of other settings in which sign languages are found, there is a lot of community specific work to be done to understand variation (Lutzenberger et al. in press).

Furthermore, considerations of nativeness, fluency and participation in the language community can lead some groups to be systematically excluded from some corpora and systematically included in others. Take, for example, the inclusion of hearing signers. In macro-community settings, while signing communities are made up of both hearing and deaf people, most corpora are structured around deaf signers often in an effort to centre deaf people and deaf epistemologies in sign language research. However in micro-community settings, hearing singers are thought to make up a larger proportion of the language community and as a result have often been systematically included in data collection (Nonaka 2009; Nyst 2015; de Vos 2016; Neveu 2019). Another example is the case of native signers. Learning a sign language from birth or early childhood has been linked to language fluency in deaf signers (Emmorey 2001; Cormier et al. 2012). As a result, early deaf signers are often prioritised when planning data collection (Fenlon et al. 2015), despite this group making up an estimated 5-10% of all deaf signers in macro-community settings in the Global North (Kyle & Woll 1985; Mitchell & Karchmer 2004). In

fact because most deaf people acquire sign later in life, and in some communities there are no 'native' signers (Costello et al. 2008; Nyst 2008), many macro-community documentation projects are forced to relax or adjust their criteria for native/early signers (Crasborn & Zwitserlood 2008; Schembri et al. 2013).

Pre-set sampling criteria can also present challenges where multiple factors intersect. For example, the BSL corpus project aimed to sample 10% of non-white signers to reflect the demographic composition of the UK, however they were unable to recruit enough non-white signers who also met other criteria (Schembri et al. 2013). Unequal distribution of certain sociolinguistic groups may also pose similar sampling challenges in both large and small communities. For example, the BSL project was unable to find non-white signers in the city of Belfast (Schembri et al. 2013). Similarly, in an investigation of sociolinguistic variation in the micro-community of Kata Kolok signers, Mudd and colleagues (2020) were unable to find old deaf people who belonged to a specific family clan.

Overall, there is very little literature that explicitly discusses sampling issues in sign language documentation, and fewer still that focus on micro-community settings. In the rest of this section, I focus on the PISL documentation project as a case study, evaluating the process of creating a representative sample of a signing community. I discuss how and why we delineated our aims including our limitations, as well as what worked and what did not work with respect to sampling. Finally, I discuss our project in the broader context of sign language documentation and corpus creation.

4.2 Designing a sampling strategy

Upon arrival in Providence, it became clear that there was a highly diverse group of signers, each with quite variable signing styles. Given this high level of variation, we were wary of over-representing one deaf person's signs/signing as those used in the whole island. Following Nyst's suggestion, "[i]n case a sign language has a relatively small number of users, it may be preferable to document the signing of all its signers, rather than of a sample" (2015: 113), we decided in order to document the range of sign language in use on the island, we would take a highly inclusive approach.

A result of this decision was that we did not exclude any signer on the basis having lived abroad or knowing other sign languages. Thus, deaf people who were born on San Andres and moved to Providence, and deaf people who spent time in the mainland were all included in the data collection. We performed a baseline of lexical elicitation with these signers, to fully capture the range of signs in use on the island for a single concept. We did not discourage signers from using other sign languages, but instead we recorded multilingual signers in spontaneous discourse with other islanders, so that we could capture what natural language use looks like in these settings. We also took measures to understand these individuals' language backgrounds and repertoires. Given that some deaf signers spent considerable time in both mainland Colombia and San Andres, we consulted with signers of Colombian Sign Language, and signing varieties in San Andres to identify specific signs or variants that were used in these places.

Given the backgrounds of the signers, we also chose not to apply any criteria of nativeness or fluency as we felt this was not useful for the aims of our project. Deaf people in Providence develop and use signing skills from an early age to communicate with a range of mostly hearing interlocutors of varying proficiency, and local signing is not taught in an institutionalised setting. All deaf people are born to hearing parents and, with only

one exception, have not had deaf adult signing models in their immediate family when growing up. This is quite different from situations in which age of acquisition is often considered, namely acquisition of national sign languages in schools or from deaf signing parents (Lillo-Martin & Henner 2021). Given these considerations, we considered all deaf people in Providence as appropriate participants for data collection.

While we aimed to include all signers in the corpus, we still made decisions to prioritise some groups or sampling distributions, based on previous research, and our early observations. Particularly given the limited time, we found this useful to guide our data collection.

One such factor was age of deaf islanders. For the purposes of this paper, we divide signers into two groups, those aged 40 or under (younger) at the time of data collection and those over 40 (older). Given that several deaf signers over the age of 40 had been included in Washabaugh's initial documentation, we aimed to record at least elicited and semi-spontaneous data from these signers for potential diachronic comparisons. We also suspected age-based variation as younger signers have more contact with Colombian Sign Language and other national, macro-community sign languages through education, travel and the internet. We thus decided to prioritise older signers who generally used more distinctively local signing. Finally, given that we were unsure of the possibility to return to Providence in the near future, we decided to prioritise filming older signers.

Another factor was village membership. Since village membership has been described to influence lexical choices in Providence, we aimed to include signers from various villages in our data collection. In the past, where a signer lived had a greater impact on their social network: given limited mobility around the island, signers interacted

more with their fellow villagers. During this time, Washabaugh describes characteristic lexical differences across different villages in the island, and also notes that some villages have a rich history of signing and deafness and others do not (Washabaugh 1986: 51). Today, despite a much greater freedom of movement, recent lexical elicitations have highlighted that those lexical differences documented by Washabaugh persist across different villages (Cortés Bello 2016; Braithwaite 2020a). To document this variation, we aimed to collect data from each of the seven villages in which deaf signers currently live on the island.

We also considered audiological status while sampling. In line with other sign language documentation projects, we focused on deaf signers, as we consider them the core of language users. However, we aimed to also sample across hearing signers because they make up a significant portion of language users. Furthermore, work by Washabaugh (1979a) documented differences in word order among deaf and hearing signers on the island, leading us to suspect this factor as relevant for other types of linguistic variation. Given that this variation was observed in word order and hearing signers were observed to use similar lexicon as deaf signers (Washabaugh 1986), we did not focus on lexical elicitation with hearing signers but tried include them into semi-spontaneous data collection.

4.3 Implementing the sampling strategy

Overall, we were relatively successful in achieving our sampling goals: we collected data across six out of seven villages where deaf people lived, from 11 out of 13 deaf islanders from ages 19 to 81 years and from five hearing islanders. The distribution of data collected from different informants can be found in Table 2-2: Overview of sampling, highlighting

the three sampling factors considered. Despite general success, our priorities for sampling were met with practical limitations in the field, that cut across different factors. In what follows, I describe unforeseen issues we encountered in collecting a diverse and representative sample.

Table 2-2: Overview of sampling

Signer Code	Audiological Status	Age Group	Village	Type of Data	Total Data (hh:mm:ss)
AB	Deaf	older	Southwest Bay	Elicitation, Interview, Discourse	03:40:45
AO	Deaf	younger	Bottom House	Elicitation, Interview	00:51:33
BlaT	Hearing	older	Rocky Point	Interview	00:26:28
BT	Deaf	older	Rocky Point	Elicitation, Interview, Discourse	02:15:30
CN	Deaf	younger	Town	Discourse	00:49:41
DB	Deaf	older	Bailey	Elicitation, Interview	01:36:44
EB	Deaf	older	Southwest Bay	Elicitation, Interview	00:47:01
EL	Hearing	younger	Southwest Bay	Discourse	00:15:39
FB	Deaf	older	Southwest Bay	Elicitation, Interview, Discourse	05:49:39
JH	Deaf	younger	Bottom House	Elicitation, Discourse	00:47:58
JJ	Deaf	younger	Southwest Bay	Elicitation, Discourse	00:45:27
JN	Hearing	older	Rocky Point	Interview	00:19:47
LP	Deaf	older	Rocky Point	Elicitation, Interview, Discourse	02:54:31
MB	Hearing	older	Southwest Bay	Elicitation	00:57:36
RR	Deaf	younger	Old Town	Elicitation	00:35:34
ZL	Hearing	older	Southwest Bay	Interview	00:52:12

Village membership

By recording data from all available deaf adults on the island, we were able to meet the goal of recording across several villages. However, it became clear that variation was not always based on village membership, but instead centred around individual deaf people and their communication and family networks. For example, two unrelated signers in one village may have very different signs for two concepts, even if they know and communicate with each other relatively. However, the two deaf sisters and their deaf uncle who lived in the same village shared much more lexical overlap. Given these observations, we aimed to collect lexical data from all available deaf signers, including multiple signers who lived within the same village, to capture the range of signs used on the island.

Age

The two youngest deaf people were not included in the current corpus due to age-related restrictions: the youngest was underage and therefore unable to give consent, and the second youngest was attending school in Medellín and as a result not available during the majority of the research stay. Other than that, we found no major challenges with sampling signers across different ages, and focusing on older signers over 40.

Audiological status

When attempting to record both deaf and hearing signers, we found at times that the mixed audiological status of our team had an effect on participants language choices. Our team comprised two deaf members (Carlos, Ian) and one hearing member (Rehana). While most deaf participants preferred to sign with us when all together, it became apparent that one deaf woman tended to use far more mouthings when I was present in

recording settings. For this reason, we tried to record data from this signer both with and without me present. A related issue arose when trying to record hearing people in signing mode: once I was present, some hearing signers became more interested in chatting in spoken language instead of sign. In one instance, we visited the house of a deaf man and his sister to record a group conversation among all of us. However, the group quickly divided: we ended up with the hearing sister talking to me in spoken language and Carlos, Ian and the deaf man signing to each other.

These situations may reflect cultural norms in Providence. Washabaugh describes that while hearing people use signing for 1:1 interactions with deaf people that often when more hearing people are around, they do not sign at all (Washabaugh 1986: 100). Similarly, he describes that some deaf people prefer to interact with hearing over deaf people (1986: 135). In deaf-hearing communication, mouthing and speaking is a widespread communication strategy used, and thus unsurprising that it would be used more actively in the presence of a hearing researcher. Having a hearing team member allowed us to observe the way that, in some settings, local ideologies and practices privilege spoken language.

Hearing participants also presented different challenges to data collection in terms of familiarity and comfort with the research project. While deaf people mostly had clear ideas and understandings of the project goals and quickly became accustomed to equipment and recording settings, hearing people were often more reluctant to be filmed. This is likely because given the limited time of the field trip, we prioritised spending time and developing individual relationships with deaf people and instead interacted with hearing people through other avenues, such as workshops and events in collaboration with the government. Spending time with deaf people made us familiar to their hearing

family members and neighbours, however these hearing people did not often attempt to join our signed conversations during visits. Altogether, we spent far less time cultivating relationships with hearing islanders, and as a result collected far less data from them.

Finally, identifying and recruiting hearing signers to film was a challenge. Our first aim was to identify and record 'good' signers, however we quickly realised that determining the degree of signing proficiency among hearing people is quite a complex task in micro-community settings, especially for community outsiders (Nonaka 2009; Mudd, Lutzenberger, de Vos, et al. 2020). In Providence, Washabaugh (1979) created a schematic representation of signing networks, with the closest relatives and household members of deaf signers as the most fluent. In practice however, we found that even those hearing people who were close family members were not necessarily judged to be the highly proficient or the most desirable interlocutors by their deaf family members, despite their own beliefs about their signing skills. After some difficulties identifying appropriate hearing signers, we finally found success by asking a deaf signer to invite her hearing friend to be recorded together.

During this project, we did not prioritise filming hearing people with less contact with deaf people. However, observations in the field made it clear that filming the many micro-interactions between deaf signers and their extended network, such as local shopkeepers, customers, employers, co-workers, would be an important next step in documenting the signing community. Given hearing signers' reluctance to be filmed, collecting such data would require different methods, for example following singers throughout their day and filming their interactions (Nyst 2015). Drawing on methods from linguistic ethnography may be particularly useful in this case as they allow flexibility in capturing everyday interactions (Kusters & Hou 2020). By moving away from the idea of

sampling 'good' signers, we are likely to deepen our understanding of how communication is negotiated in places like Providence where there are many hearing people who use sign to communicate in specific domains.

Individual differences

Among the small population of deaf people, there were large differences in availability and willingness to participate in data collection. Some deaf people, while quite interested in the project, were limited in their participation due to busy work schedules, family commitments, or travel abroad. Despite ample free time, another deaf person seemed largely uninterested in the project and as a result was rarely approached for data collection. We responded to participants' personal circumstances by focusing time on those who were willing and available to participate, and collected more data from them. Despite various limitations, we also made a concerted effort to collect basic lexical elicitation from all deaf people for whom this was a logistical and ethical possibility leaving us with data from the majority of deaf islanders.

Differences in experience with linguistic research also played a role early on, particularly as the research team developed relationships with individual deaf people. Some deaf people had multilingual signed competence, or experience with other linguistic research and as a result had some degree of metalinguistic knowledge. This facilitated communication and understanding of the project aims between researcher and participant, and these individuals quickly became important informants. In particular, one deaf person who had been involved in previous language documentation by Washabaugh was extremely enthusiastic and interested, devoting a great deal of time to the data collection. Others had less experience with linguistic research but were happy to

participate, and through getting to know participants they became more acquainted with the aims and methods of the project more gradually.

In addition, interpersonal relationships between participants restricted multiparty data in two ways. First, to capture naturalistic signing, we aimed to record the two deaf sisters signing to each other. However, we quickly realised that signers who were in close daily contact were not particularly interested in talking to each other: when left alone to chat on camera, these signers very quickly signalled that their conversation was over. Similar observations have been made in other signing communities for deaf people in the same household, for example married couples (Schembri et al. 2013), and siblings (Ali 2021). Second, we had to adjust flexibly to the (at times fragile) interpersonal dynamics between signers. For example, one deaf woman was scheduled to be recorded with another and a few days before the recording event they argued and we had to cancel. Another deaf man, despite being a member of a deaf multigenerational family, was largely considered unintelligible by everyone around him. One signer was particularly chatty and dominated group conversations. We took different angles to solve these problems: we switched conversation partners for the arguing pair, recruited a family member to mediate an interview for the hard-to-interpret signer, and included Ian and/or Carlos to moderate group conversations.

4.4 The result: a representative sample of PISL?

To briefly recap, we had a great deal of success recording deaf people, and found that concentrating on them gave a good understanding of the range of lexical variation in the island's signing community. Given the small diverse population, we aimed to be as inclusive as possible, particularly because some deaf people couldn't participate due to

ethical and practical limitations. Even so, we became aware of the critical importance of managing individual personalities and schedules in order to make sure we could get data from as many deaf people as possible. We found hearing people more challenging to record, in part because we did not prioritise developing relationships with them. We also made observations that are important for future research. In terms of recording hearing signers, we found the most success in employing a 'bring-a-friend' set up for recording discourse. However, we observe that that focusing on 'good' hearing signers might be unnecessarily limiting, and expanding the method and scope of recording hearing signers may be useful to understand how signing is used in Providence.

Instead of opting for a maximally structured data collection, we were opportunistic, recording more data with those who were more flexible and willing to do so. In doing so, we adopted a 'emergency butterfly collection' approach (Chelliah & de Reuse 2011), which resulted in a lot of data from some signers and less data from others. This opportunistic approach might have its merits in terms of representative sampling. In our case, those who contributed no or very little data appeared to be overall less integrated into the signing landscape for various reasons: they were too young, they were reclusive, they preferred to speak than sign. Similarly, the hearing signers we recorded all used sign in daily interactions with deaf people. While this is not an exhaustive sample of PISL signers, it seems likely that the group represented in our sample are active language users. Nyst (2008) discusses another example of opportunistic sampling of Malian Sign Language, used in the capital of Mali, which emerged in the public spaces where deaf people meet and gather. Nyst comments that while they found difficulty in collecting data from female signers, it is likely that the signing of the majority-male sample is more representative of the active signing community, as the public spaces in which the

language arose are outside the traditional sphere of women. One critical consideration however is that in micro-communities, sign language documentation is often done by community outsiders and it is possible that without close collaboration with community members that they may miss settings in which sign language is used.

An opportunistic strategy is quite different from the structured collection of macro-community corpora, which often aim to collect data that is balanced across multiple variables, such as age, region and gender. Nevertheless, many issues of representability are still unaddressed in these more structured approaches. In recent times, the preferential sampling of native and near native signers has been problematised, particularly because in many cases they represent only a small fraction of sign language users (Costello et al. 2008).[4] However, achieving a true representative sample in macro-community sign languages may be challenging because in larger signing communities it is much more difficult to ascertain the full degree of demographic and sociolinguistic variation of deaf signers. For example, in the context of British Sign Language Corpus, Schembri and colleagues (2013: 140) note that "[n]ot enough is known about the population of deaf sign language users in the United Kingdom in order to recruit a representative group whose characteristics we can confidently say reflect those of the larger population."

Sign language corpora and datasets have widely different aims which guide the inclusion/prioritisation of certain groups. All sign languages, including those used in both macro- and micro-communities are minority languages and the very first large scale documentation projects have approached this endeavour form the perspective of

[4] See for example the discussion following a recent tweet by Julie Hochgesang https://twitter.com/jahochcam/status/1120348359833915392 (Hochgesang 2019).

endangered language documentation (e.g., Johnston 2008). However, the major divergence in sampling between macro- and micro-community focused projects is likely not just due to differing community size and network structure, but also to differences in project aims, methods and ideologies. One example of this is criteria about fluency. In macro-community sign languages, corpus research projects often target both linguistic research but also usability for teaching, learning and interpreting (Konrad 2012). On the other hand, micro-community sign language corpora have often more explicitly focused on documentation and description of the signing community. These diverging project aims may underly differing motivations in micro- and macro-community corpora to include signers considered to be 'less fluent'.

Nevertheless, the differences observed in sampling across signing communities suggests that we should not take for granted that all corpus/documentation projects (i) do, or should, include the same groups and (ii) are, or should be, comparable. This has important implications for the growing field of sign language typology, and particularly for typological studies that compare sign languages with very different community size and structure. Providing comprehensive meta-documentations of corpus creation and sampling will help, if not to refine ideas about what a representative sample is (or should be), at least to better understand whose language use is being represented in a given dataset or corpus.

5 Conclusion

In this paper, I have presented a small-scale documentation project of Providence Island Sign Language as a case study to critically reflect on how to create a representative sample of sign language users. In doing so, I highlighted the flexibility required to carry

out sampling in a small and highly diverse community, and discuss key unforeseen issues that we encountered with respect to managing individuals and interpersonal relationships. This reflection also highlights the differences in sampling between our corpus and similar small-scale corpora of micro-community sign languages and large-scale corpus projects of macro-community sign languages in the Global North. I hope that this makes the PISL dataset, and any research that builds on it, more transparent, accessible and informative to others.

Finally, the question remains, what is next for the Providence Island Sign Language corpus? At present, planned follow up data collection has been halted due to the COVID-19 pandemic and the devastation of the island by hurricane Iota in 2019. While future data collection is on pause, one immediate opportunity to expand the corpus is through the digitisation, archiving and annotation of historical data, which has been generously offered for use by William Washabaugh. Collecting these materials alongside the current data will allow the novel possibility of comparing data from the same signer 40 years apart.

In its current state, the corpus already presents a great deal of potential for linguistic research. The combination of elicited and spontaneous data invites in-depth studies of linguistic features of PISL. At present I am currently using conversational data to examine features of PISL language in interaction including person reference (Omardeen, Mesh & Steinbach 2021) and other-initiated repair strategies (Omardeen & Manrique in prep) as part of my PhD dissertation. The corpus also opens up the possibility for cross-linguistic comparisons between PISL and other sign languages. For cross-linguistic comparisons however, I encourage researchers to reflect on the methodology and context of data collection particularly when comparing PISL to languages from very different signing communities.

Chapter Three

Initial Person Reference in Providence Island Sign Language

Chapter adapted from:

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Abstract

When referring to non-present entities, speakers and signers can select from a range of different strategies to create expressions that range from extremely concise to highly elaborate. This design of referring expressions is based partly on the availability of contextual information that can aid addressee understanding. In the small signing community of Providence Island, signers' heavy reliance on extra-linguistic information has led to their language being labelled as context-dependent (Washabaugh et al. 1978). This study investigates the semiotic strategies that deaf signers in Providence Island use for referring, and examines how signers optimise specificity and minimise ambiguity by drawing on shared context. We examined first introductions to non-present people in spontaneous dyadic conversations between deaf signers and analysed the semiotic strategies used. We found that signers built referring expressions using the same strategies found in other sign languages, yet designed expressions that made use of contextual knowledge shared through community membership, such as geography, local spoken languages and traits of fellow islanders. Our signers also used strategies described as unusual or unattested in other sign languages, such as unframed constructed action sequences and stand-alone mouthings. This study deepens our understanding of context dependence by providing examples of how context is drawn upon by communities with high degrees of shared knowledge. Our results call into question the classification of sign languages as context-dependent and

highlights the differences in data collection across communities and the resulting limitations of cross-linguistic comparisons.

Keywords

person reference; displaced reference; context dependence; sign language; Providence Island Sign Language

1 Introduction

Discussing things that are not present in space or time, also known as *displaced reference* (Hockett, 1960), is central to everyday communication, and to do it signers and speakers draw on all communicative tools in their arsenal. In addition to signs and words, they use their bodies for other communicative strategies, for example using their hands to represent or trace an object, using their body to embody a referent, or using their hands to point to a nearby object or space to invoke a meaning related to the target. Both in speech and in sign, people weave together complex multimodal utterances that capitalise on the tools for meaning making or *semiotic repertoire* available to them in their communicative setting (Enfield 2009; Kendon 2014; Kusters et al. 2017).

The semiotic repertoire available in each communicative setting is different, and this informs communication practices. One important factor is that different pairs of speakers or signers may share different levels of context as a result of their individual backgrounds. Members of culturally bound communities, for example, share knowledge about local histories; for instance, when two Trinbagonians talk among themselves, one may say "the coup" and both know it refers to the failed attempt to overthrow the government of Trinidad and Tobago in 1990 (Millette 1991). Geographically bound communities share knowledge about distribution of places across spatial layouts; this may result in neighbours pointing in the direction of the nearest supermarket when they discuss where they went grocery shopping. This kind of knowledge provides a shortcut, allowing signers and speakers to be less explicit or specific in communication, and instead rely on the shared context between them and their interlocutor.

With respect to displaced reference, shared context is particularly important, because referring expressions are formulated with the addressee in mind. For example,

a speaker referring to their sibling may have to choose between different expressions such as *my brother*, *Javed*, or *the tall boy with glasses*. The selection of any one of these depends on what the addressee knows about the referent. In this process of selection, there are two important principles at play, (i) create an expression that has the most chance of success with the addressee and (ii) be as brief as possible (Sacks & Schegloff 2007; Enfield 2012). The use of contextual information is important in this selection process because the addressee requires certain information to resolve each expression; the knowledge that the referent is related to the speaker, the knowledge of the referent's name, and the knowledge of the referent's appearance. The more information shared between speaker and addressee, the easier it is to create concise and informative referring expressions.

In small communities, shared knowledge appears to play an important role in referring. Sign languages used in small-scale communities, most often in geographically remote rural areas, have been noted to use a high degree of context-dependent strategies (de Vos & Pfau 2015). Most research on this phenomenon has focused on the use of one specific semiotic strategy: pointing. This work has investigated how these signers point to real-world locations to index referents associated with those locations, and in doing so incorporate shared spatial context to communicate (e.g., de Vos 2012; Bauer 2014). While pointing and spatial knowledge are important domains where shared knowledge can influence reference, there are likely many more domains of context that can feed into formulating referring expressions in small communities.

In this paper, we investigate how signers deploy various semiotic resources when establishing reference, and examine how referring expressions incorporate contextual knowledge. To do so, we examine how signers of Providence Island Sign Language (PISL)

perform displaced reference to non-present people in conversation. PISL is particularly well suited to this study; the language is used on a small Caribbean island, among a signing community that shares a high degree of both cultural and geographical context. We examine first introduction, perhaps the most challenging form of reference, and we focus on the practice of person reference, a domain that is richly attested in everyday conversation. Our findings shed light on the vast array of strategies that PISL signers use when introducing characters, and in doing so they contribute to our wider understanding of how context can shape communicative practices in the domain of reference.

This paper is structured as follows. Section 2 introduces the topic of displaced reference, followed by an overview of how it is performed in sign languages. We then introduce PISL, and the socio-cultural context in which it is used. Section 3 outlines the present study, with an overview of research questions, data collection and coding. In section 4 we present the findings and in section 5 we discuss them. Section 6 concludes.

2 Background

2.1 Displaced reference

Displaced reference, or the ability to talk about something removed from the here and now, is a core feature of human communication (Hockett 1960). While it is pervasive and widespread in communication, displaced reference is demanding to perform. To identify a referent meaningfully, the speaker or signer must consider the perspective of their addressee, leverage the information they share, and provide additional information as necessary (Grice 1975; Clark & Bangerter 2004). Thus, the act of displaced reference is guided by situational factors, such as the identity of the interlocutor, which serve to influence the choice of referring strategy (Schegloff 1972; Enfield 2012).

Displaced reference presents a special challenge when a new referent is introduced for the first time. Introductions are an important task, as they serve to *anchor* or lay the foundation for the referent as the discourse unfolds, creating a mental file to which all subsequent information about a referent can be added (Heim 1988; Steinbach & Onea 2016; Clark 2021). Unlike referring back to something or someone, introductions require the insertion of sufficient information to identify a referent that is, by virtue of being new to the discourse, less cognitively accessible than referents that are already under discussion (Ariel 2001).While first mentions are typically considered the least accessible, it is generally agreed upon that some instances of initial reference can be more accessible due to extralinguistic factors such as world knowledge or physical context (Vogels, Krahmer & Maes 2019).

'Newness' is a vital consideration when deciding how to refer to non-present entities. One major domain of research on reference has focused on how a referent's newness affects the choice of expression used to mark it. To explore this, studies have compared first mentions/introductions of referents to maintained reference or reintroduction, mainly using narrative data. This work has demonstrated that introductions are longer than subsequent references, in speech (e.g., Chafe 1976; Givón 1983), in sign (e.g., Hodge, Ferrara & Anible 2019), and in gesture (e.g., Hoetjes et al. 2015; Namboodiripad et al. 2016). In fact, it is not just quantity of marking, but also the quality of referring expressions that differs. Some spoken languages tend to use indefinite articles for new referents and reserve definite ones for repeated reference, for example the English distinction between *a girl* and *the girl* (Heim 1982; Kamp & Reyle 1993). Furthermore, multimodal studies show that referent newness affects the type of information conveyed by speech-accompanying gestures. Debreslioska et al. (2013)

found that in German, introductions were more often accompanied by gestures that give entity information such as size or shape, rather than embodied gestures (or *character viewpoint* gestures) that give information about actions, which are favoured in subsequent reference. Similarly, in examining Auslan, the primary signed language of the Australian Deaf community, Hodge et al. (2019) found signers tend to use more lexical strategies in introduction but favour embodied strategies for subsequent reference.

Another line of research has further examined the semantic content of expressions used in first reference from a typological perspective, finding cross-cutting similarities across languages in how speakers introduce new people to the discourse. Looking across spoken interactions from diverse language communities, Stivers et al. (2007) find that speakers choose from four major categories when introducing a new referent; (i) names (e.g. *Zara*), a conventionalised link between word and specific individual; (ii) relational descriptions (e.g. *my cousin*) which use relational words like kinship terms to triangulate reference; (iii) non-relational descriptions (e.g. *the man who lives on the hill*) which provide descriptive information about the referent; and (iv) zero marking (e.g. cross referencing on the verb) in which the referent is marked by contextual information. Studies that draw on video corpora of spoken languages have revealed additional ways of introducing a new referent, highlighting that this activity is performed multimodally. Strategies such as pointing to referent's homes or habitual locations (Brown 2007; Levinson 2007; Sidnell 2007b; Brück 2016) and using ad-hoc gestures that give descriptive content about the referent (Sidnell 2005) have been documented as common strategies for referent introductions, especially in small-scale language communities. While this line of research has taken a broad typological scope and even included multimodal perspectives, the focus has nevertheless been on spoken languages.

2.2 Displaced reference in sign languages

Signers have a rich set of strategies at their disposal for making reference to new people, things and events. Some of these strategies are highly context independent: they can be understood through a relatively stable link between form and meaning and do not require a great deal of supporting information from the discourse and communicative context. Examples include the use of single lexical signs, lexical noun phrases or *mouthings*, (the often silent articulations of spoken words, e.g., Crasborn et al. 2008). These context independent strategies are commonly recruited in first reference (e.g. Hodge et al. 2019).

Other strategies create meaning dependent on the context of communication, often drawing attention to items and spaces in the interaction setting. Pointing is one such strategy, as it manages attention in the physical space surrounding the signer, and can be used to refer to items that can be found or imagined within that space. To manage attention, pointing combines a conventional handshape with a context-dependent direction. Pointing is a common strategy for introducing new referents in sign language discourse (Barberà & Zwets 2013), while points back to locations already associated with particular referents are frequently used for discourse linking and anaphoric reference (Sandler & Lillo-Martin 2006; Steinbach & Onea 2016).

In addition to these overt strategies, signers can also use strategies in which a referent is not explicitly introduced, but instead implied through contextual interpretation. An example of this is *constructed action* (CA), a strategy in which signers recruit manual and non-manual articulators to embody the thoughts, feelings and/or actions of a referent (Lillo-Martin 2012; Cormier, Smith & Sevcikova-Sehyr 2015; Steinbach 2020). When CA is used in referent introduction , various visual cues such as eye gaze, bodily movement,

and signing speed can implicitly cue the interlocutor that a new referent is being represented. This richly improvised embodied strategy derives meaning not from conventional knowledge, but from contextualisation of the sequence as representing a particular referent. Indeed, while CA has been found often in first reference, it is commonly accompanied by other more overt and context independent elements (Cormier, Smith & Zwets 2013).

While there is a growing body of work on reference in sign languages, research to date has focused almost exclusively on referring in languages used by large deaf communities in urban settings, often called *macro-community sign languages* (Schembri et al. 2018), or *deaf community sign languages* (Meir et al. 2010). As a consequence, we know surprisingly little about how reference is performed in the many other settings in which sign languages are used worldwide. Many small-scale or *micro-community sign languages* (Schembri et al. 2018), have been documented in rural, labour-intensive and geographically remote communities: a subset often referred to as *rural sign languages* (de Vos & Pfau 2015). Some research findings suggest that these languages exhibit typological differences with respect to reference when compared to sign languages used by urban deaf communities (de Vos & Pfau 2015). Indeed, authors have suggested that strategies for referring in these communities may be more context-dependent, since community members have a high degree of shared knowledge, and may rely on relatively fewer shared linguistic conventions (cf. Sandler 2012).

This suggestion is supported by research that compares the use of pointing for reference in macro- and micro-community sign languages. A common strategy used in many macro-community sign languages is to 'assign' a referent to an arbitrarily-selected location in the space in front of the signer by first naming or describing the referent, then

pointing to the selected location (e.g., Friedman 1975; Collins-Ahlgren 1990; Engberg-Pedersen 1993). In doing so, a link is formed between the referent and an empty space in the communication setting. This allows the signer to then refer anaphorically to the same referent throughout the discourse, using points towards the referent's assigned space (Cormier, Schembri & Woll 2013; Perniss & Özyürek 2015; Steinbach & Onea 2016; Wienholz et al. 2018). Notably, the assignment of absent referents to arbitrarily-selected spaces has not been attested in many micro-community settings. Instead, these signers show a preference for pointing to real-world objects or locations that can be associated with the referent using information shared between the signer and the addressee. This strategy, which we refer to as *metonymic pointing*, has been documented in diverse sign languages to both establish reference (e.g., Washabaugh et al. 1978; Padden et al. 2010; Schuit 2014) and to anaphorically refer back to an established referent (Bauer, 2014; de Vos, 2012; 2014). Because members of the language community share a baseline understanding of geographical distribution of community members, they rely on this contextual knowledge to streamline referencing.

Aside from a shared understanding of their surroundings, it is likely that other domains of shared knowledge among micro-community signers also factor into referring. Given their small community size, much more may be in the common ground, such as kinship relationships among referents or current events within the community involving specific referents. Indeed, Meir et al. (2010: 3) suggest that this common ground allows micro-community signers to be "less verbally explicit than people who do not have much in common". This may result in signers producing referring expressions that may be confusing for outsiders to the community. For example, Sandler et al. (2011: 2027)

describe their difficulty in interpreting a story retold by a signer of Al-Sayyid Bedouin Sign Language, pointing out it appears to "rely heavily on shared knowledge for interpretation".

To recap, reference in sign language is a task that relies on both context independent and context-dependent devices. We have a growing understanding of how signers refer in well studied sign languages, based on results from experimental work and some corpus studies. We have reason to believe that referring strategies may differ between macro- and micro-community sign languages. Much of the typological work on signed referring in this domain has centred on the use of pointing for displaced reference, and about the shared geographic and social information that supports this kind of referring. We still know little about the role that other sources of shared knowledge play in the referring choices of signers in small, close-knit communities.

2.3 Research language and setting

Providence Island Sign Language (PISL) is used in the island of Providence (Spanish: *Providencia*), located off the Caribbean coast of Nicaragua. Despite being part of Colombia, the island is linguistically, culturally and ethnically distinct from the mainland. Providence has a history of deafness and signing stretching back at least 120 years (Washabaugh et al. 1978). Within this time, PISL emerged without outside influence due to sustained genetic deafness among the island's geographically isolated and highly interrelated population. Today, Providence is home to 13 deaf people, with ages ranging from below 10 to above 80, out of a total population of roughly 4,500 (DANE 2018).

The backgrounds of these deaf people are highly diverse, however they all are born to hearing parents and live with hearing family members. While in the past, deaf siblings were very common, today most individuals are the only deaf person in their family.

The one exception to this is an extended family with two adult deaf sisters and their deaf uncle. For most other deaf people, contact with other deaf islanders is not part of daily life and they communicate mostly with their own individual networks of hearing family and friends. These social structures have led to a great deal of linguistic variation. In the lexical domain for example, even signs for commonly used concepts such as *dead* and *money* differ across deaf signers' networks. A few deaf islanders have also spent time living on the neighbouring island of San Andres, or more recently mainland Latin America, and have adapted their previous signing experience to facilitate communication with their fellow islanders. Some of these individuals bring knowledge of national sign languages, while others primarily have experience with non-institutionalized signing in home settings (i.e., homesign). However, the large degree of lexical variation and heterogeneity of backgrounds do not appear to present major obstacles to communication among deaf signers, instead their communication is fluent and mutually intelligible.

Previous research has highlighted some interesting typological features of PISL. First, PISL has been reported to have relatively small sets of signs in key semantic domains. In a crosslinguistic study of sign languages, Woodward (1978) found that PISL had the smallest set of kinship terms, with signs for *mother*, *father*, *offspring* and *relative*. Accompanying this is a high degree of polysemy; for example the sign MAMA[5] can be used flexibly to mean both *mother* and *woman* (Cortés Bello & Tovar 2019). PISL is also claimed to make use of a relatively high degree of non-manual elements in sign formation. Washabaugh et al. estimate that between 25–35 % of signs in PISL contain movements of the face and or body, compared to a mere 1.9% of signs in American Sign Language

[5] Following convention in the field, we use English glosses in small caps to represent signs.

(Washabaugh et al. 1978; Washabaugh 1986). These non-manuals include mouthing of spoken words, a phenomenon stemming from contact with the local spoken languages (Crasborn, van der Kooij, et al. 2008), in this case Spanish, English and Islander Creole English (Bartens 2013; García León & García León 2019).

In all these domains, instead of relying on linguistic conventions, PISL signers seem to use contextually motivated strategies to achieve referential specificity. For example, despite the relatively small set of colour signs, PISL signers can communicate a range of colours by pointing to an object in their immediate environment that matches the desired specific colour. Pointing is used not just for the visible surroundings, but also the broader island geography. PISL has very few place names, and signers instead point in the direction of a specific locations in order to identify that location (Washabaugh et al. 1978). PISL signers also capitalise on multilingual resources in communication by incorporating elements of the surrounding spoken languages into their signing; indeed, some concepts are exclusively expressed solely through mouthings of spoken words (Washabaugh et al. 1978).

The domain of person reference in PISL blends both convention and context. In Providence, *name signs* or signs attributed to individuals, are sometimes used to refer to specific people. These signs are used non-vocatively and often based on salient features of the referent's appearance or behaviour (Washabaugh 1980b; 1986: 69). However, much more common than single name signs are flexible multi-sign expressions that recombine salient identifying features of a referent. Washabaugh (1986) deemed naming expressions in PISL to be ambiguous given their lack of uniqueness and specificity, given the fact that multiple referents could go by the same sign name/expression and multiple names/expressions could fit the same individual. For example, in a study of referring

expressions, the same man was found to be referred to variably as (i) GOLD-TOOTH + BARBER, (ii) BARBER + BUSH-POLICEMAN and (iii) GOLD-TOOTH + BUSH-POLICEMAN (Washabaugh 1986: 71). Despite Washabaugh's perceived ambiguity, the naming expressions produced by signers seem readily understood, suggesting that signers capitalise on their shared community knowledge to formulate referring expressions, in this instance referents' multiple professions.

Washabaugh's early observations on person reference in PISL are based on limited empirical data, collected through an elicitation task. There is in fact little documentation of how PISL naming and referring practices function in spontaneous signing among islanders, nor of how signers incorporate other context-dependent strategies into person reference.

2.4 Interim summary

In summary, displaced reference is ubiquitous in communication yet requires some degree of sophistication in its formulation. First mentions in particular require sufficient and specific information, as they introduce characters that are new to the discourse and less accessible to the interlocutor. Speakers and signers rely on complex semiotics, drawing on conventional means like lexical words and signs, as well as more improvised and/or contextually grounded means like pointing and embodied depiction. In micro-community settings, sign language users tend to lean heavily on shared context when referring, yet our understanding of this phenomenon centres around use of space and pointing. It is likely that a host of other factors contribute to the shared context between signers, including cultural, kinship, community knowledge.

3 The present study

This study addresses how signers of PISL, a micro-community sign language with users who have a high degree of shared social and geographic context, perform displaced reference to people. Providence Island presents the optimal conditions for a study of this kind: the island community is small and densely interconnected, and social integration is key to community membership and participation. As a result, most people in Providence spend their time talking about other people in Providence. This presents a natural setting where recognitional reference, references where the interlocutor can identify the specific person as a referent (Sacks & Schegloff 2007), is the norm. This is similar to many other small spoken language communities in which person reference has been studied (e.g., Levinson 2007; Sidnell 2007). PISL signers have also been shown to incorporate diverse, contextually motivated semiotics into their signing, that draw both on contextual and conventional knowledge, such as pointing to nearby objects for colours, mouthing words from spoken Spanish or Creole and embodying a referent to show their actions.

To investigate how these factors fit together, we asked the following research questions: (i) what semiotic strategies do signers use to introduce new characters to the discourse, and (ii) how do signers combine different types of referring strategies? In asking this, we aim to investigate not only the resources used by signers, but also the types of context signers invoke when referring.

3.1 Data collection

Data for this study was collected during a three-month field trip to Providence in early 2019, by the fieldwork team, comprising (i) the first author, hearing researcher and (ii) Ian Dhanoolal (ID), a deaf researcher with previous fieldwork experience in the

community. Data was collected as part of a language documentation project, and signed consent was obtained from all deaf participants (Omardeen 2019). Consent was obtained in briefing sessions in which ID used PISL to explain to signers in the objectives of the research project, how data would be used and how privacy would be managed. Recordings were made using two Canon Legria cameras, at 25 frames per second. Sound was recorded using the camera-internal microphone. Recordings were made in Canon's .MTS format, later converted to .MP4 using the software Handbrake (*Handbrake [Computer software]* 2019).

The dataset used in this study is a sample comprising 1hr 27 minutes of spontaneous dyadic conversations, from 6 deaf PISL signers. Deaf PISL signers were recruited and paired up based on their availability and familiarity with each other (e.g., neighbours, relatives). Recording sessions were held at participants' homes and workplaces. Before recording, ID invited participants to talk about whatever they wanted, suggesting topics such as childhood memories or life stories. The researchers set up a camera to face each participant and sat nearby but out of sight, leaving the participants to converse without supervision. In some instances when conversations died down or didn't get started easily, ID stimulated the conversation by introducing topics. When participants were finished talking, they got the attention of the researchers and signalled that the session was over. We sampled 5 different sessions, with clips of between 17–26 minutes from each session. A summary of the data can be found in Table 3-1, and Figure 3-1 shows the signer pairings of each session as well as where each signer lives on the island. Full length video recordings for each session are available via the Endangered Languages Archive at http://hdl.handle.net/2196/00-0000-0000-0013-2411-8, and clips

of the individual examples mentioned in this paper are available via the Open Science Framework at https://doi.org/10.17605/OSF.IO/ZGUQ6.

Table 3-1: Information on recording sessions

Session	Duration	Signer I	Signer II	Location
AB-LP	00:20:00	AB	LP	Southwest Bay
BT-LP	00:23:01	BT	LP	Rocky Point
CN-FB	00:23:13	CN	FB	Freshwater Bay
CN-LP	00:26:29	CN	LP	Rocky Point
FB-JH	00:17:30	JH	FB	Freshwater Bay

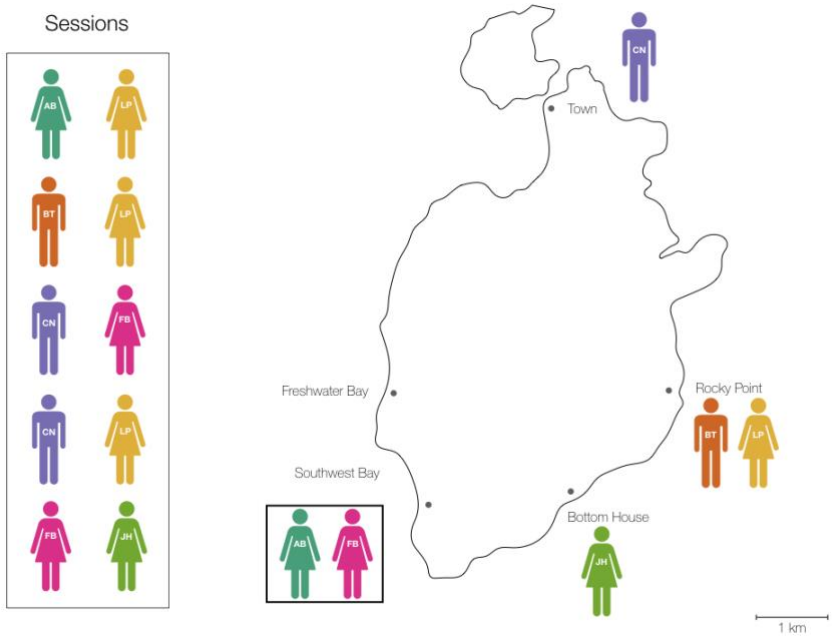


Figure 3-1: Distribution of signers across recording sessions (left) and across the island (right)

3.2 Transcription and annotation

The data were transcribed and annotated the using the video annotation software, ELAN (*ELAN [Computer software]* 2020). The team first examined each recording and identified all instances of initial reference to people. Coders took into account all communicative behaviour that served to introduce a new referent. This included explicit introductions that gave information about the referent as well as more implicit introductions that highlighted the actions of the referent. Given the study's focus on displaced reference, coders considered only third person reference, excluding reference to both participants in the exchange and people visible during recording. The only exception was when present parties were used to triangulate reference, e.g., *your cousin*. These cases were included, since the addressee, *you*, was not the target of the referring expression.

Determining where initial person reference ended was not straightforward, especially given the interactional nature of the data. Referents were often introduced more than one strategy, and strategies could be met with backchanneling from the addressee. As the focus of this study was the RE itself, we defined the boundaries of the referring expression by relying on the organisation of turns in the conversation. The RE was thus defined as the expression(s) used within a signer's turn-at-talk (Sacks et al. 1974) where they either explicitly signaled or implied reference to a new person.

As discussed by Washabaugh, resolving person reference is difficult for outsiders to the community, and without extra-linguistic information, "(u)tterances are usually confusing unless interpreters have independent knowledge of the actions being described" (Washabaugh 1986: 36). Given the fieldwork team's experience of several months in the field, coders were familiar with much of the extra-linguistic information needed to resolve reference, such as the island's geography, signers' social circles and

the current events surrounding the time of recording. Despite this, coders still faced instances where they were unsure or unable to identify referring expressions. Furthermore, specific signers were more difficult to understand than others, in part because coders spent relatively less time with them during the fieldtrip.

For data coding, all steps were performed independently by two groups: (i) the first author and (ii) a coding team comprising fieldworker ID alongside a hearing, signing research assistant. Coding proceeded in several rounds. First, instances of reference were coded independently by both coding groups. Each went through the recordings and identified first mentions of non-present people. The two coding groups then compared their work and all tokens of first reference were discussed. Those that were identified independently by both groups were included in the sample. Those that were identified by only one coding group were discussed among the coders. This discussion resulted in either agreement in which case the instance was included, disagreement in which case the instance was excluded, or mutual agreement to leave the case out of the sample due to lack of clarity. This process yielded 106 referring expressions (REs) for further analysis.

Once REs were identified, the data were enriched with rough translations of the utterance containing the referent, and the surrounding utterances, made by the first author based on coding discussions. In this stage, utterances were excluded if the first author could not provide a satisfactory translation. This left a dataset of 92 REs. The first author then coded the semiotic strategies used in each RE, employing coding categories adapted from Hodge et al. (2019).[6] The categories used for this coding are summarised

[6] While we recognise that eye gaze is important to reference (Garcia & Sallandre 2020), we excluded as a criteria for categorisation because we were unable to reliably distinguish which of its multiple possible functions (e.g. pointing, embodiment) it was performing.

in Table 3-2, along with the conventions used to represent them in the glossed examples that follow in the paper.

Table 3-2: Coding scheme

Category	Explanation	Glossing Conventions
Conventional sign(s)	Single or multiple conventional signs strung together in referring. Includes name signs.	Signs glossed in small caps, e.g., RELATIVE. Name signs glossed as NS. Unconfirmed name signs glossed as $NS^{unknown}$.
Mouthing	Silent articulations of identifiable spoken words, either accompanying manual signs or standing alone.	Words written in quotation marks e.g., "mama". Unconfirmed spoken names were represented as "name ^{unknown}".
Pointing	Manual or non-manual pointing behaviour.	Points glossed as IX. Self-points glossed as IX-1, points to interlocutor glossed as IX-2. Non-manual points glossed as IX-NM.
Embodiment	Mapping the referent onto the signer's body, including token depictions and constructed action.	Glossed as a description of depiction in small caps with component words connected via hyphens, e.g., WALK-WITH-CANE. Constructed action glossed with CA followed by a description, e.g., CA: stares menacingly.
No explicit reference	No explicit reference, information about new referent encoded in predicate.	

Conventional signs were defined as signs that were consistently used to evoke a specific meaning. Given that PISL has a relatively understudied lexicon and initial work on a lexical database is still underway, we used specific criteria to guide classification of conventional signs. For a sign to be considered conventional, the first author looked across annotations to see if either (i) the same sign was used by the same signer multiple times, or (ii) the same sign was used by multiple signers. A sign could also be considered conventional if it was recognisable across the fieldwork team (first author, ID) as having

a specific meaning. For example, the sign RELATIVE was considered a conventional sign because it was used across several signers in the sample and multiple times by the same signer. Name signs were classed as conventional based on the same criteria. Name signs for referents we did not know were marked as unknown. The category of conventional signs included single signs, e.g., RELATIVE as well as strings of signs, e.g., RELATIVE + FAT.

Mouthing was defined as the articulation of (identifiable) spoken words from the surrounding spoken languages. We included mouthings that combined with manual signs, as well as those that appeared without a manual component. Mouthings we observed were either full or partial articulations of semantically associated words in Spanish and Creole.[7] This category also included mouthings of spoken names. Spoken names for referents we did not know were marked as unknown.

Pointing was defined as the extension of finger(s) or other body parts to manage attention towards delimited spaces. This category included pointing formed with various handshapes, as well as pointing using non-manual body parts such as the lips or chin. Points were glossed as 'index' or IX in the data, with numbers affixed to indicate points to self, IX-1, or the interlocutor, IX-2.

Embodiment was defined as any strategy in which the signer mapped the referent onto their own body in a non-conventionalised way. This included token depictions in which single conventional signs were used in non-conventional ways, as well as longer sequences of constructed action. In both cases, embodiment was identified through the

[7] Given the high degree of lexical overlap between Islander Creole and Standard English (Bartens 2013), it is difficult to designate mouthings as stemming from one or the other. We assume Creole for the purposes of this paper, since Creole is dominant in day-to-day life, and Standard English is limited to religious settings (García León & García León 2019), that all non-Spanish mouthings stem from Creole not Standard English. We represent Creole mouthings with English orthography, and provide English translations for Spanish mouthings.

increase in number and intensity of visible articulators used by the signer (Cormier et al. 2015; Ferrara & Halvorsen 2017).

No explicit reference was defined as any instance in which a new character was introduced to the dialogue without explicit introduction of the referent. This category included subject omission in which verbal predicates were not preceded by explicit subject expression.

4 Results

In examining the results, it is important to note that despite sampling 6 different signers in 5 different conversations, each individual conversation and signer contributed different numbers of referring expressions (REs) to the overall dataset. Given the diversity of conversation topics, there were differences in number of first references produced per session. Also, due to individual differences in personality and conversation style among signers, some individuals dominated conversation and produced many REs, others were less talkative and produced few. Finally, some signers were simply much harder to understand than others, resulting in more of their potential REs being omitted. Figure 3-2 gives an overview of the REs comprising the dataset, and discussed in the results. In the section to follow, we will examine a representative set of strategies used across most of the signers we sampled, and discuss key elements that characterise first reference in PISL.

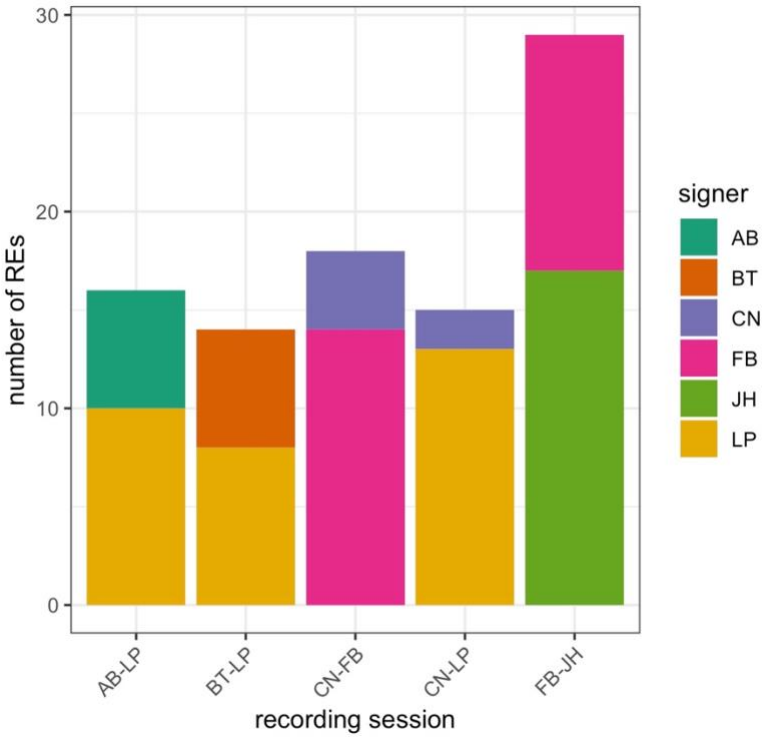


Figure 3-2: Number of REs per signer by recording session

We examined how signers used five semiotic strategies for referring: conventional signs, mouthing, pointing, embodiment, and no explicit reference. The distribution of these strategies across REs, organized by signer, is presented in Figure 3-2. A first glance at the table reveals that the most commonly used strategy was conventional signs, used in around 79% of all REs and across all signers. Points were also highly common, used by all signers and in roughly half of all REs. Less frequent yet also used across all signers were mouthings, which occurred in 28% of REs. Embodiment was relatively low frequency, and used by four of the six signers across 13% of REs. Finally, in 2% of REs, produced by two of the six signers, there were no explicit markers at all and signers relied on implying a new referent.

In the following subsections, we describe in detail how each of these categories were deployed by signers. We discuss examples selected for their representativeness of each category.

4.1 Name signs

One subset of conventional signs that was frequently observed was name signs. Like in other sign languages, name signs appear to have descriptive origins but those origins may be obscure or unavailable to the interlocutor. Most name signs recognised by the coders referred to signers' close family members or other deaf people on the island. Coders could confirm sign names used by all but two signers; these were the signers with whom the fieldwork team spent the least amount of time, and as a result were less familiar with their name sign repertoire.

An example of a name sign can be found in Figure 3-3, where a signer is talking about her husband being treated in hospital. In the example, she describes her relative phoning with the hospital and writing down when her husband will be released. She uses the sign glossed NS to introduce the referent, her relative, followed by a sequence of constructed action in which her relative takes out a notepad and writes down information.

Figure 3-3:Name sign

Notably, having a name sign did not ensure that a person would always be referred to by that name sign. For example, when referring to her sister, one signer used a name sign with one interlocutor but a description with another interlocutor. While both interlocutors were familiar with the referent, the signer chose to use her name with only one of them. This choice may signal that the signer believed the referent's name sign to be unknown to one of her interlocutors, but known to the other. Indeed, a person may be known to many on the island, while their name sign may be known only within certain of their social circles. In fact, we found evidence of signers encountering difficulty when producing name signs that were not known to their interlocutor, despite the referent being a mutual acquaintance of both parties to the conversation.

4.2 Descriptions

Aside from naming referents, conventional signs also often provided purely descriptive information to identify the new referent. Description length varied from a single sign to several signs strung together. Short descriptions identified a new referent with a single conventional sign. For example, in Figure 3-4, the signer retells a story of getting lost in the neighbouring island of San Andres and asking a police officer on the street for directions. To introduce the policeman, presumably a stranger to herself and her interlocutor, she uses the single conventional sign OFFICER.

gloss: **OFFICER** CA: asks for help

translation: There was **a police officer**, we asked him for help

Figure 3-4: Single sign description

Longer strings of descriptions were often combined with other strategies to pinpoint specific, recognisable referents. They combined with pointing to localise the referent's home or habitual location in the island's geography, or linked the new referent back to someone previously mentioned in the discourse. Conventional signs (including name signs) could also be used in possessive constructions in which new referents were triangulated through previously mentioned referents. These were often combined with additional descriptions of the new referent.

4.3 Relational Terms

Signers frequently used a small set of conventional signs to relate referents, specifically the signs MAMA, PAPA, RELATIVE, FAMILY, OFFSPRING, LOVER and FRIEND. When these signs were used in a relational sense, they very frequently preceded by a point to the signer, the interlocutor, or another party to whom the referent was related. For polysemous signs such as MAMA, which may mean both *mother* and wo*man*, pointing was a very useful strategy to disambiguate the meaning of the sign, particularly because both meanings were often accompanied by the mouthing "mama". Signing MAMA alone could mean simply any woman, whereas to convey the meaning mother, a signer would precede the sign by a point-to-self, such as in the construction *my mother,* IX-1 + MAMA.

Aside from pointing, signers used other means to relate new referents back to those previously mentioned in the discourse. For example, signers often repeated the name or description of the aforementioned referent, then followed it with a relational term, as seen in Figure 3-5. Here, the signer is retelling a childhood story in which she

trespasses on a man's property and the man's wife comes to scare her away. Earlier in the story she introduces the man using the sign NS^{unknown}. She then describes how the man's wife appeared to chase them away, introducing the wife with a combination of description and relational strategies. The signer begins with MAMA + OLD (*old woman*). This construction, makes it clear she means MAMA in the sense of *woman*, there is no preceding point to indicate it is someone's *mother*. However, this is quite a general description that could refer to any old woman in the community. She then relates the referent back to the aforementioned man, by signing his name sign (NS^{unknown}) then the relational term LOVER, followed by MAMA + OLD. This allows us to narrow down the referent from any old woman to the specific old woman who was married to the referent NS^{unknown}.

Figure 3-5: Relational description using name

Signers tended to combine signs with broad meanings, such as FRIEND, RELATIVE and FAMILY, with additional strategies such as descriptions or points, to counteract the referential ambiguity of these signs. This resulted in a typical strategy of using a very general term combined with a more specific description to narrow down the search space. An example of this can be found below in Figure 3-6. The signer, who sells crab meat for a living, mentions the addressee's cousin is one of her clients. To refer to the addressee's cousin, she points to the addressee (IX-2) and uses the generic kinship RELATIVE, then continues with WORK + AIRPORT. The signer starts with a very common construction, IX-2 + RELATIVE (*your relative)* to set up the reference in relation to the addressee. However, this is a very broad term that can be used to describe various relationships ranging from niece to brother to cousin. The referential ambiguity of such a term poses a challenge by offering too many referents to choose from. To resolve this ambiguity, she follows up with WORK + AIRPORT. This narrows the field down to just one cousin, the one who works at the airport.

gloss: IX-2 RELATIVE WORK FLY
translation: Your cousin who works in the airport,

gloss: CA: ask to buy crab
translation: she asked me for crab

Figure 3-6: Relational strategy

4.4 Mouthings

Another strategy we observed was the mouthing of spoken words. These mouthings were used in 28% (n=26) of all REs. They occurred with or without manual signs and seemed to operate in a variety of ways when co-occurring with manual elements.

4.4.1 Mouthings with manual sign

Some conventional sign forms were always accompanied by mouthings. For example, one signer always produced the sign DEAD accompanied by the mouthing "dead". This was the case for some polysemous signs, regardless of the meaning that the sign conveyed across contexts. For example, several signers used the mouthing "mama" to accompany the sign MAMA, regardless of whether it was used to mean mother or woman. However, these sign-mouthing pairings were not uniform across all signers. For example,

while most signers mouthed “mama” to accompany MAMA, not all signers did so, and while one signer always mouthed “dead” with DEAD, other signers never accompanied that sign with mouthing.

We also found mouthings of spoken names, however this was subject to cross-signer variation in terms of both frequency of use and how these strategies combined. For example, only one signer combined these mouthed names with manual signs, while others instead commonly used mouthed names in isolation. The same single signer also produced mouthings at a much higher frequency than the others, and produced most of the mouthed names in the sample.

4.4.2 Mouthings without manual signs

Several signers used mouthings as stand-alone referring expressions, without a manual component. These instances included mostly mouthed names, as well as one mouthed kinship term “abuela” (English: *grandmother*). An example of a stand-alone mouthed name can be found in Figure 3-7 in which the signer describes being on a trip to neighbouring San Andres with a companion. In the example, her companion calls a third friend and invites them to fly across to join them, which the friend does. To introduce the new referent, the signer silently mouths the person’s name without any manual sign. As was commonly seen with other examples, there is a break in the manual signing stream when the mouthing is produced. Given that mouthing takes on the full communicative load of referring, the hands drop to the signer’s lap – most likely to draw attention to the mouth – then signing is resumed after the reference is made.

Figure 3-7: Mouthed name

4.5 Pointing

We found no cases of non-manual pointing in the dataset, even though lip pointing in particular has been observed both in past research (Washabaugh 1986: 35) and by the first author during fieldwork.[8] By contrast, manual points were used frequently by all signers, and accompanied nearly half of all REs in the sample (n=46). Points either targeted real-world locations that could be associated with an absent referent (metonymic pointing) or targeted a participant in the conversation (direct pointing). Points were always used in combination with other strategies, co-occurring with conventionalised signs, mouthings and embodiment.

Many points in the dataset served to add spatial information to an RE in order to help identify a particular referent. Others formed part of possessive constructions, in which the referent of the point was interpreted as the possessor. In line with observations by Woodward (1979), we found that these pointing functions were not distinguished through formal features such as handshape. Instead, handshape patterned most closely

[8] Lip pointing is common to both Colombian and Caribbean culture (Saitz & Cervenka 1972: 33; Washabaugh 1980b: 35; Ortega-Santos 2016), and is observed for use with nearby referents. This may explain the lack of lip pointing in our study, as we excluded REs that target visible referents.

with the type and location of target. Most points to real-world places were produced with an extended index finger. However, when pointing behind their backs, some signers produced points using a fist with an extended thumb. Points to self were produced with either an extended index finger or an open hand with all fingers extended, and points to the interlocutor were also mostly produced with an extended index finger.

4.5.1 Pointing to associated locations

Given that the island's geography is shared knowledge among residents, points are commonly used in lieu of place names to indicate the various villages (Washabaugh et al. 1978), with signers even pointing in the direction of San Andres when referring to the neighbouring island. When referring to people, signers in our sample capitalised on this schematised spatial knowledge by pointing to places where a referent lived or worked to specify who they were talking about.

gloss: HEY KNOW **DEAD** **IX**
translation: Hey, do you know **the person who died over there**,

gloss: KNOW IX-2
translation: you know?

Figure 3-8: Pointing to localise

For example, in Figure 3-8, the signer asks his interlocutor if they know about a person who recently died in a neighbouring village. He signs DEAD, followed by a point (IX) to the village where the man lived. In this case, the signer uses an extremely brief description, the sign DEAD. Despite being a single sign, DEAD is highly informative in the context of local practices. Deaths on the island are common knowledge and well publicised; when someone dies, a car drives around with a loudspeaker announcing who died, and the time and place of the funeral. Nevertheless, signing DEAD alone may not be sufficient to identify which dead person is being referred to. Consequently, the signer elaborates the reference with a point (IX) in the direction of the village in which the dead man lived.

4.5.2 Pointing for possession

Points were articulated alongside conventionalised relational terms to indicate possession. In these possessive constructions, points always preceded the conventional sign. The referent of the point was interpretable as the possessor, as seen in

Figure 3-9, where IX-2 + RELATIVE is signed to mean *your relative*. These possessive points could target not only the conversational participants (signer and addressee) but also locations associated with absent referents. For example, in Figure 3-9, the participants are discussing how to get around San Andres. The interlocutor asks if the signer's cousin knows how to navigate public transportation in San Andres. In doing so, he uses both the cousin's name sign, and a point in the direction of where she lives. The signer responds

that her cousin's friend drives her around, signing IX + FRIEND to refer to the friend. Because her cousin is already the topic of discussion, the signer is able to build efficiently on the recently established link between her cousin and a real-world location by pointing to her cousin's home rather than repeating her cousin's name sign. This point serves a possessive function within the relational expression, contextualising the sign FRIEND by specifying exactly whose friend is being discussed.

Figure 3-9: Relational description using point

4.6 Embodiment

Several signers employed strategies of embodiment to introduce new referents the discourse, mapping features of the referent on to their own bodies. Embodiment served two main functions, either to depict the thoughts, feeling and/or actions of a referent using constructed action or to depict characteristic features of a referent using recognitional depiction.

4.6.1 Recognitional depiction

In 4% of REs (n=4), signers mapped the referent's body onto their own in order to depict a salient physical feature or a habitual action of the referent. These non-conventional,

embodied strategies were always combined with points, and appeared to target referents known to the interlocutor, or recognitional referents.

An example is presented in Figure 3-10, where the signer describes a new referent seeing an event take place between two people. To establish the referent, the signer embodies the person, showing their manner of walking with a cane (WALK-WITH-CANE), then points in the direction of the referent's house (IX). The signer uses her whole body, not just her hands, to convey the walking style of the referent in question. This recognitional depiction appears to be different from constructed action in which a signer depicts thoughts, feelings and/or actions of a referent (Cormier et al. 2015). While the signer does convey the referent's action, it is a habitual action and primarily important for referent recognition.

gloss: HEY KNOW **WALK-WITH-CANE** **IX**
translation: Hey, you know **the person who walks with a cane over there**?

gloss: SEE BOTH
translation: He saw the two of them.

Figure 3-10: Depicting characteristics with hands and body

Recognitional depictions could also highlight physical features as well as habits. To do so, signers took a conventional sign and exaggerated its articulation to emphasize some characteristic feature of a referent. In the example below in Figure 3-11, the signer uses the sign BALD, usually articulated by the quick motion of a cupped hand across the crown of the head. However, she exaggerates the manual and non-manual features of the sign by stretching the length of the movement, squinting her eyes and baring her teeth. This is clearly not a typical articulation of a conventional sign. Instead the signer highlights the depictive properties of the sign to refer to a specific bald person, the one who lives in the direction of the point.

This kind of embodiment did not need to involve the hands at all. For example, a signer may refer to someone with buckteeth by simply imitating their appearance, biting their lower lip and drawing back their upper lip so their upper teeth are prominent. These depictions of referents' features or habitual actions may eventually crystallise into name signs, even the purely non-manual ones. In fact, during fieldwork the first author noted a name sign of one hearing signer that is simply several blinks, a depiction of an idiosyncratic habit of that person. What seems most central to these strategies is that the signer zeroes in on a very salient feature of the referent that is widely known and recognized (see Washabaugh 1986: 72).

gloss: IX BALD IX
translation: **Over there, the bald man over there.**

Figure 3-11: Depictive use of conventional sign

4.6.2 Constructed action

Another technique of embodiment used by signers in first reference was unframed constructed action, which was used in around 9% (n=8) of REs. This occurred when signers did not explicitly introduce a new referent, but instead entered straight into a constructed action sequence, in which they embodied the new referent. Take for example, the sequence in Figure 3-12, where the signer describes an incident in the neighbouring island of San Andres where she was attacked by a stranger while going to the shop. Despite never explicitly introducing the attacker, the signer changes her body position, facial expression and mannerisms to make it clear she is embodying another person. She uses this constructed action strategy to depict the person watching her, beckoning her then grabbing her. In this case, it is not the identity of the attacker but their actions that are important and thus highlighted in the retelling.

gloss: SHOP GO WALK
mouthing: "shop"
translation: I walked to the shop.

gloss: **CA: watching** **COME** **GRAB**
translation: **Someone was watching me, then beckoned to me and grabbed me.**

Figure 3-12: Constructed action

4.7 No explicit reference

Sometimes, signers did not explicitly introduce a new referent. In 2% of all REs, there was no explicit introduction, yet some other strategy made it clear that a new referent had entered the discourse (n=2). In both cases, this was done through subject omission.

In these REs, signers used verbal predicates, or conventional signs that convey actions, without the subject being introduced. In these two instances, signers first introduced the action of the referent, then later in the discourse circled back to add more specifying information, in the form of conventionalised signs, mouthings or pointing. In one instance, the signer describes her relative who is an alcoholic. She begins the utterance by signing DRINK multiple times, to indicate a referent drinking. Only later in the conversation does she then signed MY + FAMILY + WOMAN + DRINK (my female relative drinks), to clarify the identity of the drinker.

5 Discussion

Our results reveal that PISL signers use many of the same strategies for displaced person reference that are attested in both signed settings and multimodal spoken settings. This suggests that referring in the visual-gestural modality is accomplished using similar semiotic repertoires across different cultures and settings. Indeed, the strategies used most frequently by our signers, such as conventionalised signs, mouthing and pointing, parallel those found in studies of reference in other sign languages. Notably, however, there is not full overlap with other attested referring strategies in sign languages. Furthermore, some features that are prominent in reference in macro-community sign

languages are not found in PISL, and thus not used in PISL reference, such as fingerspelling.

In the sections below, we discuss in detail the different semiotic strategies used by PISL signers in referring and how they connect to strategies attested in other micro- and macro-community sign languages. We devote particular attention to the context that signers invoke when formulating referring expressions.

5.1 Embodiment serves as a resource for highly specific referring acts

In our dataset we frequently saw PISL signers combine conventional labels and improvised depictive strategies in order to refer. In some cases, this combination was facilitated by the embodied nature of a given conventionalized sign: elements of the sign that depict embodied behaviours could be modified to enact an idiosyncratic or context-particular performance of the behaviour. Such strategies have also been observed in macro-community sign languages. Ferrara and Halvorsen (2017), for example, discuss this phenomenon in Norwegian Sign Language, examining how signs such as SLEEP – in which the signer appears to be sleeping – are produced both as simply conventional signs but also as depictions that reflect the particular sleeping act of a particular referent. We find a similar instance in our data with the conventional sign BALD (see Figure 3-11), where the signer uses a conventional sign, however exaggerates the depictive properties. Similar to the example in Ferrara & Halvorsen (2017), the signer marks the sign with a pause and accentuated non-manual features, tailoring the sign to perform a depiction of a particular referent's baldness.

The embodied nature of many conventional signs is, of course, no accident. Highly particular recognitional depictions can and do lay the foundation for signs that become conventional in signing communities. Nowhere is this more transparent than in the case of personal name signs: idiosyncratic and highly personalised descriptions are among the most common motivation for name signs in many macro-community sign languages (e.g., McKee & McKee 2000; Börstell 2017) and are indeed the only motivation for name signs in some micro-community sign languages (Nyst & Baker 2003; Lutzenberger 2018). These descriptive name signs become conventional in the communities where they are used, but like many other conventional signs with embodied foundations, they retain depictive properties can be exaggerated or 'de-conventionalised' in use.

Recognitional depictions, then, are not only powerful tools for sign creation, but offer unique opportunities for indexing shared knowledge of characteristic traits and behaviours during signed person reference. Such strategies are not limited to signed communication, and have been noted to in co-speech gestures that accompany spoken person reference. On the Caribbean island of Bequia for example, Sidnell (2005) describes speakers producing improvised representational gestures to depicting a referent's dreadlocked hair. These strategies provide a direct visual link by capitalising on familiarity of how specific referents behave or look, extralinguistic knowledge that is much more likely to be shared in small communities.

5.2 Name signs vs. description: a matter of recipient design

Names in PISL are usually used within signer's individual networks for third person reference. This is somewhat different from macro-community sign languages where they are most often given in institutional settings and used for self-identification (in addition to

third person reference). This difference in context of name giving and use has led to a somewhat puzzling yet persistently cited claim that PISL does not use name signs (Washabaugh 1986: 69). Our data and fieldwork observations provide evidence that name signs are indeed used in Providence, however suggest there are some restrictions on their use. Signers may use depictions to refer to people whose name signs they know, suggesting that (i) naming conventions are not shared across all signing networks, and (ii) signers are sensitive to this fact when choosing a referring strategy.

That name signs in PISL are not known to all signers should not come as a surprise: across signing communities, names signs are created and maintained to identify people within specific social networks (Meadow 1977; Day & Sutton-Spence 2010; Paales 2010) and signers communicating across networks may not anticipate sharing the same set of naming conventions. For example, in McKee and McKee's (2000) survey of names in New Zealand Sign Language, used by the urban deaf community of New Zealand, they find that most informants had multiple name signs, each used in a different network. They find that deaf children of deaf parents are commonly referred to via name signs by their peers, but via a string of relational descriptions by their parents' generation. In such settings, signers favour descriptions over name signs because they provide identifying information that is more accessible to their interlocutor. This practice of designing referring expressions that best allow the addressee to identify the referent is also widely found in spoken language research, and it is considered to be a fundamental preference in the formulation of person reference, referred to as the preference for recognition (Sacks & Schegloff 2007; Enfield 2012).

5.3 Mouthings reflect the multilingual experience of PISL signers

PISL signers clearly use mouthings to capitalise on shared multilingual knowledge within the signing community, using mouthings from both Creole ("come") as well as Spanish ("abuela"). Many other micro-community sign languages exist in multilingual settings and signers have been observed to use mouthings from multiple spoken languages. In Inuit Sign Language for example, Schuit (2014) notes signers incorporating mouthings from both English and Inuktitut. She also notes a large degree of variation among signers' mouthing patterns. Similarly, we also find individual differences in how signers combine mouthings and signs, specifically with prominent use of mouthed names and manual signs by one signer. While individual differences may be influenced by signers' heterogeneous experiences in home life, work and education, it is difficult to convincingly connect any one factor to mouthing preferences given the few signers and their complex, idiosyncratic backgrounds. Indeed, the sociolinguistic factors explaining mouthing preferences are unclear even for well-studied sign languages (see Bank, Crasborn & van Hout 2016).

Mouthing is a powerful resource in PISL referring: it is found in combination with manual signs, but also as a freestanding referring strategy for several signers. This use of stand-alone mouthings appears to be somewhat typologically peculiar. While mouthings are quite commonly reported in both macro-community (e.g., Ebbinghaus & Heßmann 2001; Nadolske & Rosenstock 2007; Crasborn et al. 2008) and micro-community (e.g., Nyst 2007; Adone et al. 2012; Bauer 2014; Schuit 2014) sign languages, stand-alone mouthings without a manual sign are very rarely observed and/or reported in either category (Bisnath 2020). In the few instances where they are reported they are used in a limited role. Bank (2015: 96) examines mouthings in the Sign Language of the Netherlands Corpus, and reports signers use stand-alone mouthings

overwhelmingly for backchanneling purposes, either saying “yes”, “no” or repeating what the interlocutor just signed.

What, then motivates PISL signers to refer using stand-alone mouthings? To understand this, it is helpful to return to the daily communicative setting of deaf signers. It is common practice in Providence for hearing people to mouth, or exaggeratedly pronounce people’s names when attempting to communicate with deaf people. This type of mouthing is a pervasive feature of signed interaction, since deaf-hearing signing is the norm in Providence. The strategy of mouthing is so ingrained in signing practices that stand-alone mouthings can be maintained by deaf signers: one deaf woman within a multigenerational deaf family in Providence was referred to by her deaf relatives using simply a mouthing of her name. Notably, the frequent use of mouthing in PISL extends beyond names. Some concepts, such as *lie*, are very often expressed by only mouthing and no manual sign (Washabaugh et al. 1978).

As a result of living within a majority hearing society, most deaf signers acquire some degree of multilingual competence in their signed language and the surrounding spoken language. Providence is no exception. Similar to other signing communities, signers blend elements of the majority spoken languages into their signing, using mouthings to accompany signs. Interestingly, the availability of stand-alone mouthings in PISL demonstrates that deaf people’s collective experiences in navigating deaf-hearing communication can shape even deaf-deaf communication practices. To fully understand these meaning-making strategies and the practices that underly them, analysing deaf signers’ communication from a translanguaging perspective (Kusters et al. 2017), which de-emphasises distinctions between named languages and linguistic and non-linguistic

elements, may be particularly useful (for an analysis of translanguaging in a small-scale signing community, see Safar 2019).

5.4 Real-world pointing serves multiple functions: referent identification and discourse-linking

PISL signers point to real-world spaces and objects when establishing first reference, a practice widely attested in various small-scale signing (de Vos & Pfau 2015) and speaking communities (e.g. Levinson 2007; Sidnell 2007). These points function metonymically: by pointing to a location, signers are able to refer to the person who lives in this location.

Our findings show that real-world points are used for more than simply identifying referents. They can also perform anaphoric functions in first reference when signers use them to triangulate introductions of new characters. When a point back to a previously targeted location forms the first part of a relational expression (e.g., when the point is used in a construction like IX + FRIEND to mean 'her friend'), signers must resolve the referent of the point using real-world knowledge *and* discourse context, then connect the referent to another person based on information in the relational expression.

Anaphoric pointing to real-world locations has also been described in other micro-community sign languages, such as Kata Kolok (de Vos 2012: 197) and Yolngu Sign Language (Bauer 2014: 149), with signers of these languages repeating points to real-world locations for subsequent reference to individuals linked to those locations in previous discourse. In these communities, just like among our PISL signers, points to real-world locations perform a discourse linking function. This is analogous to the way pointing to empty space is used for discourse linking in macro-community sign languages. We conclude that the fundamental difference between macro- and micro-community settings

is not in the functions that pointing is fulfilling, but instead in the motivation for the direction of the point. When 'assigning' referents to abstract locations via pointing, signers participate in a practice of infusing empty space with meaning. In metonymic pointing, however, the direction of the point is determined from broader real-world context. Both means of deriving a direction for the point can be harnessed in service of person identification and discourse linking.

5.5 Unframed CA is infrequent, but attested in PISL first reference

An unexpected finding in our data was the use of unframed constructed action. Embodied strategies that depict a referent's actions, such as CA in a sign language, are normally reserved for when a referent is already primed and highly accessible. For example, two studies examining spontaneously produced narratives in American Sign Language (Wulf et al. 2002), Auslan and New Zealand Sign Language (McKee et al. 2011) find that across languages, when CA is used in a switch reference context, where the subject of the clause is different from the subject of the previous clause, signers are much more likely to explicitly state the subject of the CA sequence. Data from narrative retellings, examining both sign and co-speech gesture, suggest that first mentions in the visual modality most often use strategies that convey information about properties of the referent itself (Debreslioska et al. 2013; Hodge, Ferrara, et al. 2019). Looking specifically at CA framing in British Sign Language, Cormier et al. (2013) find that when CA is used in first mention, it is usually accompanied by specifying information like a preceding noun phrase.

The use of unframed CA in our data may have two possible explanations. Firstly, it is possible that some stories are already well known to the signer and interlocutor,

making referents already accessible by shared context. This can be observed in other small signing communities. For example, Sandler et al. (2011) observe a narrative retelling in Al-Sayyid Bedouin Sign Language where a signer recounts a well-known story to family members and uses few pronouns and explicit introductions to maintain reference. Clearly, already knowing the story can affect referent accessibility and this in turn may make these well-known characters less necessary to explicitly introduce. This follows theoretical accounts which notes some new referents are more accessible than others due to extralinguistic world knowledge (Vogels et al. 2019).

A second explanation, however, better fits the observations within our dataset: signers use unframed CA to make referent identity less prominent to the interlocutor. In our data, we find unframed CA is used within a particular domain, specifically for (i) background characters, whose identity was not central to the story but included to move the plot along and (ii) referents who did not seem likely to be recognisable to the interlocutor, also called non-recognitional referents (Sacks & Schegloff 2007). In in Figure 3-12, the referent is both; a strange man who attacks the signer on a neighbouring island. It seems in these contexts, unframed CA may a technique for signers to downplay a particular character's identity while foregrounding the action sequence or to signal to their interlocutor that a specific character is not meant to be recognisable.

While the use of unframed CA raises many questions, it must be acknowledged that this referring strategy was used infrequently in our dataset. On one hand, this low prevalence might reflect low use. Indeed, most of what we know so far suggests that signers use more conventionalised strategies in introductions; this makes the use of unframed CA unexpected as it capitalises on context. However, as pointed out by Hodge et al. (2019), less conventionalised strategies are harder to code for, harder to agree

upon among coders and even harder to identify in the data. This suggests that strategies may not be as low frequency as our (or previous) data suggests, and instead may simply slip through the coding process. In order to successfully identify these cases, we may need to adopt more fine-grained methods, such as reviewing narratives with both signer and addressee. More dedicated attention to these strategies may help clarify what motivates their use, and possibly reveal differences in use among communities with varying degrees of shared context.

5.6 Sources of shared knowledge

We found that PISL signers draw on a range of different sources of shared knowledge when introducing referents. These sources can be distilled down to three broad categories. Firstly, signers draw on **conventional linguistic knowledge**, most centrally the understanding that specific forms link to specific meanings. These forms include conventional signs from PISL, but also mouthings from Spanish and Creole. Secondly, signers draw on a vast well of **community-based knowledge**. This includes knowledge about particular community members, such as their role in current events, their personal histories, their family relationships, their physical features and mannerisms, their occupation(s) and their habitual locations. Crucially, signers also draw on common ground that is built up through the discourse, that is, **discourse context**. Signers monitor the topic of the conversation and the characters already introduced into the discourse, and relate these to new characters as they are introduced in first reference.

Weaving together these distinct sources of information to produce and interpret first reference is a remarkable communicative achievement – yet it is the stuff of everyday conversation performed around the world. Communicators across cultures show

sensitivity to the types of information available to participants in the discourse, and it is utterly normal for them to design references tailored to understanding of their recipient (Sacks & Schegloff 2007). If this is the case, the question remains, why have micro-community sign languages established such a strong reputation for context dependency?

Our study of first reference has pointed us to several key reasons. First, most studies of micro-community sign languages, including the present one, are done by outsiders to the community. This puts researchers in the position of lacking background information to resolve reference, or at the very least highlights the importance of community knowledge in reference resolution (Washabaugh 1986; Sandler, Meir, et al. 2011). Nonetheless, it is certainly possible that use of highly context-dependent referring strategies is not simply an artefact of the researcher's gaze. It is highly conceivable that community size and structure can affect the scope of contextual information available to signers, and in turn, influence the decisions of signers to use more context-dependent strategies. Take the example of shared geospatial knowledge. While a macro-community signer may have small circles in which this is shared e.g., the neighbourhood or the office, a PISL signer is likely to share spatial knowledge with all of their fellow islanders. The difference in use of specific strategies that draw on shared geographic context may simply be one of scale: signers in small-scale communities may invoke these strategies more frequently than signers in large-scale communities, because the relevant knowledge is more pervasively shared across their language community.

In addition, the way researchers collect sign language data from macro-community sign languages might supress context-dependent referring strategies, or make them difficult to recognise in the collected data. In urban settings, spontaneous conversation is often recorded in a closed room with a greenscreen backdrop, while

choices like what to wear and whom to sign with are highly controlled (cf. Schembri et al. 2013). In rural settings such as our own, filming takes place in homes: participants chat with their neighbour on the porch, as people pass in and out of the house and drive past on the street in front. Clearly the amount of context available – both to the signers in conversation, and to the analysts reviewing the recordings – is very different across these situations.

Finally, we observe that topic and conversational setting clearly influence how signers draw upon context in their referring strategies. De Vos (2012: 422) notes that when signers of Kata Kolok were asked to perform elicitation tasks that involved unknown individuals for whom they could not invoke via known habitual locations, they did not point, but instead used list buoys, a strategy that associates topics or people with the fingers on the hand. Similarly, Bauer (2014: 153) found that when signers of Yolngu Sign Language were taken away from their home settlements to a nearby city and asked in an elicitation session to discuss familiar referents, they also made use of strategies that did not rely on knowledge of the space immediately surrounding them. Thus, when contextual information is not readily available to ground referring, signers of micro-community sign languages appear to draw upon more conventionalised strategies and use them in ways similar to those used by signers of macro-community sign languages. Given this observation, de Vos (2012) hypothesises that when placed in situations where rich context is available, macro-community sign language users may also capitalise on this by using more context-dependent strategies.

While PISL signers use several sources of contextual knowledge to scaffold referring expressions, the use of community-based knowledge in particular appears to have led to PISL's reputation as context-dependent. Shared community context allows

signers to tailor expressions to their interlocutors, facilitating precision in referring. This kind of recipient design is also likely to be utilised in tight-knit groups of macro-community sign language users, however linguistic data from these languages is collected in very different settings which may suppress these strategies. We therefore suggest that context dependency is better described not as a feature of a particular language, but a feature of language-in-use: all languages can be used in more or less context-dependent ways, given the communicative setting.

6 Conclusion

This paper describes the diverse semiotic strategies signers of Providence Island Sign Language use when performing initial reference to non-present people. Using spontaneous conversational data, we analysed how PISL signers design referring expressions. We find that signers use semiotic strategies common to many sign languages, yet deploy them in ways that reduce ambiguity by maximising shared context. By combining context-independent strategies like conventional signs with context-rich strategies like pointing, signers balance out the referential ambiguities of both. Referring strategies are also shaped by signers' day-to-day communicative practices, leading to strategies that may be to some extent typologically unusual, such as the use of stand-alone mouthings.

These findings add diversity to a body of literature on sign language reference that is dominated by macro-community sign languages. Our study focuses on spontaneous signing in a small tight-knit community and examine exactly what context dependency looks like in practice. By describing the strategies signers use to refer, we show that many context-dependent features of PISL can be explained by general communicative

principles, such as recipient design. Signers adjust to their interlocutor's knowledge and strive to incorporate as much of that knowledge as possible when referring. We point out that this phenomenon, while centred in our data, may be obscured in parallel research in urban settings where signers are given specific communicative tasks or recorded in highly controlled environments, and therefore have very little context to draw on.

Our study raises the question: how do urban signers make use of context when it is available? While macro-community sign language data is often collected in context-poor settings, there are also existing corpora that target maximally informal signing. These datasets, such as the Argentine Sign Language corpus used by Manrique (2016) and the Sign Language of the Netherlands Interactive Corpus used by de Vos et al. (2015), focus on informal recordings among friends in familiar spaces including deaf clubs and homes. Examining referring strategies in these corpora may provide insights into just how signers in urban settings capitalise on context when it is available to them, potentially revealing similarities with our PISL signers or other small-scale signing communities.

Chapter Four

Other-initiated Repair in Providence Island Sign Language

Chapter adapted from:

Omardeen, R. & Manrique, E. (in preparation). Other initiated repair in Providence Island Sign Language.

Abstract

Across signed and spoken conversations, people are often met with the experience of not understanding, hearing or seeing what their interlocutor wishes to communicate to them. Addressing these problems is critical to restoring mutual understanding to the exchange and is done using a set of practices called other-initiated repair (OIR) (Schegloff et al. 1977). OIR is highly common in casual conversation, while these practices show surprising cross-linguistic and cross-modal similarities, repair is achieved in each individual language using its own particular infrastructure. In this paper we examine how deaf signers of Providence Island Sign Language perform OIR. While repair has been noted to be rare in PISL signing particularly among deaf signers (Washabaugh 1986), there has been no systematic study so far. We examine 62 minutes of dyadic conversation among deaf signers and analyse 224 instances of repair. We find that PISL signers perform OIR frequently in conversation, and we describe the range of strategies they use. We also discuss the important role that eye gaze plays in the organisation of repair in PISL. Our findings not only advance description of linguistic and interactional features of this under-investigated sign language, but also contributes the first ever description of repair practices in a micro-community sign language, thus making an important contribution to the landscape of pragmatic typology and interactional linguistics.

1 Introduction

It has become increasingly evident that while there are great differences across the structures of the world's languages, there appear to be major similarities in how people co-ordinate language in use. A prime example of this is the use of other-initiated repair (OIR), a set of practices used to restore mutual understanding, when problems of understanding, or perceiving the message disturb the flow of conversation (Schegloff et al. 1977). Cross-linguistic studies into OIR have shown that while users of several unrelated languages all use language specific structures (e.g., words, prosodic patterns, gesture) to initiate repair, they all do so with comparable frequency and using similar basic strategies (Dingemanse et al. 2015).

Claims of pragmatic universals in this domain are, however, subject to sampling limitations. Despite including a range of diverse spoken languages, these cross-linguistic studies have been dominated by spoken languages, including at most a single sign language (e.g. Enfield et al. 2012; Dingemanse, Torreira & Enfield 2013; Floyd et al. 2016). Sign languages, particularly sign languages used among small, tight-knit communities, are notably unrepresented. In this paper, we provide a case study of one such small sign language, examining OIR strategies in Providence Island Sign Language.

Providence Island Sign Language (henceforth PISL) is used by a community of deaf and hearing signers in the island of Providence (Spanish: Providencia). The small Caribbean island has a population of just 4,500 people (DANE 2018), who live distributed across the several villages situated around the coast of the 17km^2 island. Despite being politically joined to Colombia, Providence is culturally, linguistically and ethnically distinct from the mainland.

The island's history of deafness stretches back until the late 18th century when the first known deaf islander was born (Washabaugh 1986: 18). Since then, there have been many deaf people born in different villages across the island and a rich tradition of signing has developed, fostering the emergence of a local sign language. Today, PISL is used by the 13 deaf residents of the island, along with a subset of hearing islanders with varying fluency.

PISL, like many sign languages used within small communities, is relatively under-documented. Most research on PISL has been published in the 1970s and 80s, and focuses on rich descriptions of the sociolinguistic situation of deaf islanders, alongside limited documentation of the linguistic structure (Washabaugh et al. 1978; Washabaugh 1979a; Woodward 1979; Washabaugh 1980b; 1986). Today, many of the early observations and claims about PISL invite scrutiny, particularly against the recent backdrop of increasing research into sign languages used in small communities (Kusters 2010; Nyst 2012; de Vos & Pfau 2015).

PISL is an excellent case study for investigating other-initiated repair for several reasons. Firstly, PISL fills a socio-demographic gap in the set of languages under study. While previous research into small Caribbean speech communities have revealed interesting insights into repair systems (see Sidnell 2007b; 2008), similar investigations into either small sign communities or Caribbean signing communities do not yet exist.

Second, certain linguistic features of the language may result in interesting language-specific patterns of repair. For example, unlike many signed and spoken languages that have many question words that are specialised for different thematic categories (Cysouw 2004; Zeshan 2004), PISL signers have been observed to use a

single, more general question sign with a wide scope of use. How this distribution of question signs affects repair initiation has not yet been investigated.

Finally, there have been observations about interactional practices among PISL signers that may be relevant to repair initiation. Washabaugh (1986: 113) notes that signing among deaf islanders is characterised by frequent eye gaze aversion, which might make other-initiated repair difficult. Perhaps most intriguingly, Washabaugh (1986: 119) has explicitly claimed that repair practices are rare in deaf-deaf conversation. Nevertheless, there has been no systematic study of how signers organise, coordinate and perform conversation in PISL (see, however Omardeen et al. 2021).

In this study, we investigate the use of OIR in conversation among pairs of deaf PISL signers. As described in the literature, PISL presents a case study that potentially differs significantly from other languages for which OIR has been studied both in the language-internal structural tools for initiating repair (i.e. a single wh-question) but also the interactional patterns thought to be universal (i.e. high repair frequency). Thus, this study contributes an important underrepresented data point in the study of repair, and gives us the opportunity to closely examine existing claims against current conversational data.

This paper is structured as follows: Section 2 reviews the relevant literature on other-initiated repair in signed and spoken languages. Section 3 outlines study design and methods. Section 4 and 5 present results concerning types and sequences of repair initiations respectively. Section 6 discusses these results and Section 7 concludes.

2 Background

2.1 Other-initiated repair

Repair refers to the practices used to target problems of producing, perceiving and understanding in conversation (Sacks & Schegloff 2007; Manrique 2016). These practices stop the sequence of turns in progress and require a resolution before the conversation can continue. Repair can be initiated either by the producer of the trouble source turn, termed *self-repair*, or the addressee of the trouble source turn, termed *other-initiated repair* (OIR) (Schegloff et al. 1977). In the case of OIR, the addressee uses a *repair initiator* to signal trouble with perceiving or understanding the previous turn. The repair is resolved when a *solution* is provided by the producer of the turn containing the *trouble source*.

In its most canonical form, an OIR sequence is composed of these three major parts: trouble source, the repair initiation and the solution (Figure 4-1). These are sometimes termed T-1 (trouble), T0 (repair initiation) and T+1 (solution) in the literature (see Dingemanse, Kendrick & Enfield 2016). These canonical or *simple* three-part repair sequences however can also be expanded into *multiple* repair sequences (see also Figure 4-1) in situations where the solution given at T+1 is either insufficient or becomes a trouble source in its own right and multiple repair initiations are used before progressivity is restored to the conversation (Skedsmo 2020a).

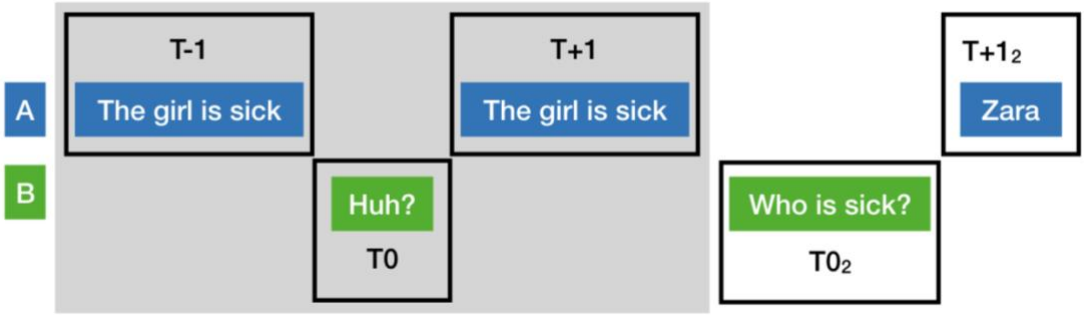


Figure 4-1: An example of OIR in a fictional conversation between two people, A and B. Area in grey represents a simple OIR sequence, the larger image represents an extended multiple OIR sequence with two repair initiators, T0 and $T0_2$.

The basic sequential structure of repair sequences has allowed for classification of repair initiations (henceforth RIs) into different categories based on how they relate to the other parts of the sequence as well as form of the repair initiation itself. The resulting classifications are summarised in Figure 4-2, and concern three things (i) how the RI relates to the trouble, (ii) the form(s) used in the RI and (iii) how the RI relates to the solution.

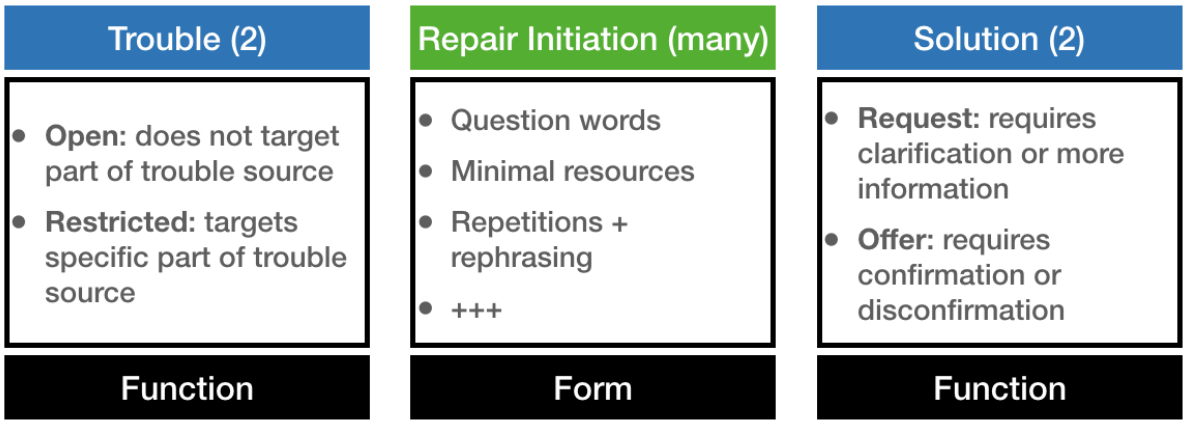


Figure 4-2: Relevant dimensions of variation for classifying repair initiations based on form and function

The first dimension of classification is a functional one, concerned with how the RI relates to the trouble source (Drew 1997). Repair initiators that are formulated to pinpoint the trouble source are termed *restricted*. Examples of restricted RIs in English include so called *wh-questions* such as "who?" or "what?". *Open* repair initiators, on the other hand, do not point to the source of the trouble in the previous turn. These include forms such as the English "huh?" or "pardon me?".

The second dimension of classification is concerned with form(s) used to construct the repair initiation. Some of these forms are specialised to perform the task of repair initiation in language. For example, in spoken languages, interjections, such as the English "huh", are specific words that are used in initiating repair. These interjections have been shown to share properties across languages. In a study of 10 spoken languages, Dingemanse and colleagues (2013) find that they are most often monosyllabic and made up of a glottal constriction followed by a low front unrounded vowel. Question words are another form that is specialised for repair initiation. Across languages we find wh-questions that target specific semantic categories, such as person (English "who") or place (English "where").

Important to note is that the same form can be used in different ways to target the trouble source. For example, the English word "what" is specialised for targeting the category of *thing*, e.g., "What did she hit him with?". However, it can also be used to perform more general repair: simply saying "what" invites the interlocutor to repeat their trouble source turn. Aside from these specialised forms, repair practices build on other forms present in the language and use them in repair. This means that the forms used in repair exist independently in a language and can be used for various unrelated social actions. For example, while repetition is a commonly used technique to initiate repair, repeating a previous turn may also work to express surprise or teasing. These social actions are not mutually exclusive: initiating repair often goes hand in hand with other actions (see e.g., Kendrick 2015).

The third dimension of classification is another functional concern: how the RI relates to the solution, or more specifically, what type of solution does the RI require. Take for example, the trouble source "Carla is getting married". The RI "Who is getting

married?" requires a solution that repeats or elaborates on the person getting married. These kind of RIs are called *requests*, because they ask for more information. On the other hand, the RI "Carla's getting married?" requires a yes/no answer. These are called *offers*, because they offer a hypothesis for the trouble source, that can be confirmed or disconfirmed.

One problem with classifying RIs based on their relationship to the solution is that multiple solutions may be given to a particular repair initiation. For example, Dingemanse and colleagues (2014: 24) present an example of a repetition type initiation that is answered with both confirmation and further specification. In this case, it is not possible to exclusively classify the RI as an offer or a request based solely on the solution. Another problem is that solutions may be ill-fitted to the RI. For example, Rossi (2015) notes that while repetitions in Italian can be used as both requests and offers, the two of which are often distinguished by intonation, request formatted repeats are sometimes treated as offers and thus responded to with confirmation.

These general dimensions of variation have been reinforced by the cross-linguistic study of repair initiation. While OIR research began with a focus on English, today it has been studied across various different languages from across the world. By directly comparing repair practices across languages, several basic forms of repair initiation have emerged. These categories are summarised in Figure 4-3, taken from a cross-linguistic study that examined OIR in 10 languages (Dingemanse & Enfield 2015).

Open. Open type repair initiators are requests that indicate some problem with the prior talk while leaving open what or where the problem is exactly.

- *Interjection*. An interjection with questioning intonation.
- *Question-word*. An item from the larger paradigm of question words in the language. Usually a thing interrogative, sometimes a manner interrogative.
- *Formulaic*. Expressions not incorporating interjection or question-word, often managing social relations or enacting politeness.

Restricted. Restricted type repair initiators restrict the problem space in various ways by locating or characterising the problem in more detail.

- *Request type (asking for specification/clarification)*. Typically done by content question-words, often in combination with partial repetition.
- *Offer type (asking for confirmation)*. Typically done by a repetition or rephrasing of all or part of T-1.
- *Alternative question*. Repair initiator that invites a selection from among alternatives.

Within restricted, *external* repair initiators address problems about unexpressed elements of T-1; this 'external' function can be performed by all of the listed format types for 'restricted'.

Figure 4-3: Basic types of repair initiations, as presented in Dingemanse and Enfield (2015)

These types also can be placed on a continuum of different levels of understanding and specificity towards the trouble source (Schegloff et al. 1977; Dingemanse et al. 2014). While open requests like "huh" do not indicate that the trouble source was understood (even perceived) properly at all, restricted requests imply that the receiver has perceived and understood a great deal of the trouble.

In addition to identifying basic types of repair initiations, cross-linguistic research has also revealed trends in repair sequences across languages. For example, in a study of 12 languages, Dingemanse and colleagues (2015) find that while open repair initiations are more likely to be used in contexts with interference, such as overlapping noise, talk or parallel activity, they are less likely to be used when the trouble source is relatively long or if there is intervening material between trouble source and repair initiation. They also find that sequences of multiple repairs tend to become more specific as they progress: open repair initiations are more likely to be upgraded to restricted types. In terms of frequency, they find that repair occurs at a high rate, on average once ever 1.4 minutes across the sample.

Thus, the study of other-initiated repair has demonstrated considerable similarities across languages, for example, with respect to rate of repair and categories of repair initiators. All languages appear to make use of this mechanism to address trouble, with the specific means of repair initiation differing based on language internal properties. While repair has been studied in a range of spoken languages, however, it has only been examined in a handful of the world's signed languages.

2.2 Other-initiated repair in sign languages

A relatively new addition to the field has been the systematic study of repair practices in signed conversation. Very early work, based on anthropological interviews and classroom interactions in American Sign Language have laid the foundation for the study of OIR in sign languages (K. Johnson 1991; Dively 1998). More recently, OIR has been further examined in classroom and interpreted settings in Swiss-German Sign Language (Girard-Groeber 2020) and researchers have also used corpora of spontaneous conversational data among deaf adults to describe repair practices in Argentine Sign Language (LSA) and Norwegian Sign Language (NTS) (Manrique 2016; Skedsmo 2020b). These studies suggest that many of the basic cross-linguistic elements of repair initiation, such as the use of open/restricted and request/offer types, are also used in the visual-gestural modality. For example, studies of LSA and NTS have highlighted familiar techniques such as open repairs that use question signs, and restricted strategies that use repetition (Manrique 2016; Skedsmo 2020b).

Studies of sign language repair have also contributed new insights. For example, they have highlighted the central role of non-manual articulations, that is articulations of the face, head and body, in signed OIR. For example, Skedsmo (2020b Extract 1)

presents an example of a Norwegian signer combining mouthing (articulation of spoken words), squinting and eyebrow lowering to initiate repair in NTS. In addition to the importance of non-manuals, sign language research has also highlighted that withheld action can also initiate repair. Manrique (2016) introduces the term *freeze look* to describe the way LSA signers hold manual signs and non-manual articulations in place until solutions are given.

The contribution of sign language research to our understanding of repair has already been substantial to de-centre speech and encourages a more holistic and multimodal approach to investigating repair initiation. For example, the finding about non-manual bodily holds in LSA inspired a cross-linguistic study on holds across spoken and signed languages, which found that holding visible behaviour is also part of gestural accompaniments to repair in spoken language (Floyd et al. 2016).

Nevertheless, research on sign language repair is still in its infancy. One major issue is the with typological scope: all sign languages for which repair has been studied have been large, institutionalised sign languages used on a national scale. Such languages are also called *macro-community sign languages* and are distinguished in the literature from *micro-community sign languages*, the many non-institutionalised languages used among diverse small, tight-knit communities around the world (Schembri 2010). Aside from having very different socio-demographic profiles, many micro-community sign languages have also been noted to use linguistic and pragmatic structures differently than macro-community sign languages (de Vos & Pfau 2015). The interactional features of micro-community sign languages have been considerably underexplored, and there has been no study to date that examines OIR in a micro-community signing context.

3 The present study

The present study aims to describe in detail how signers of PISL perform other-initiated repair using conversational data. OIR practices have so far been studied in spoken languages from various settings but in very few signed languages. The sign languages for which it has been studied are those used across relatively large signing communities, with data collected from urban centres. We know very little about how repair is done in other signed contexts. PISL, a micro-community signed language used in a tight-knit island community, provides the perfect case study to complement existing research on OIR in signed languages.

In addition to the sociolinguistic setting, key observations about PISL make it a particularly interesting candidate for the study of repair. First, as previously mentioned, it has been explicitly claimed that PISL signers both make little use of repair, and adopt interactional styles that make repair difficult of (averting eye gaze while signing). Furthermore, the linguistic organisation of PISL with respect to its single wh-question sets it apart from any other signed or spoken language in which repair has been studied so far.

To examine how these and other features play a part in the repair practices of PISL we seek to answer the following research questions:

What strategies do PISL signers use to initiate repair in conversation?

How often do PISL signers initiate repair in conversation?

How do PISL signers combine strategies to initiate repair in conversation?

3.1 Data collection

The data for this study came from five dyadic conversations among six different PISL signers. Data was recorded in 2019 during a three-month fieldtrip as part of a language documentation project (Omardeen 2019; 2021), by the hearing first author and a deaf co-researcher, Ian Dhanoolal (ID). The purpose of collecting this data was to record naturalistic conversation among deaf islanders.

All six participants were deaf residents of Providence, who lived in different parts of the island (see Figure 4-4). Two were men and three were women and their ages ranged from 28 to 81. Participants were matched up in pairs based on familiarity and willingness to converse with each other. This resulted in different pairings: one pair were neighbours, another pair were cousins, a third pair were friends of the same age.

All recordings were made outdoors, and in familiar settings, either at participants homes or workplaces. In the recording session, signers were seated across from each other and asked to simply chat about whatever they liked. Signers exchanged stories resulting in recordings rich in narratives, or exchanged the latest news about friends/neighbours/acquaintances. Where conversation was slow to start, they were prompted by ID with particular topics, for example family histories. For the majority of the recording, the researchers sat out of view, until the participants signalled that they were finished talking. Recordings were made using two Canon Legria cameras, set up so that one camera faced each participant.

For this project, we cross-sampled five recording sessions, resulting in a total of 62 mins of data. For each session we examined between 11 to 14 minutes of conversation (see Table 4-1). We sampled in rounds, sampling a clip of 1-5 mins from each session in round 1, then a similar length clip in round 2, and round 3. Some clips were shorter than others, and some but not all clips were consecutive in the conversation. We sampled

according to two criteria: (i) we prioritised sampling from the segments of the conversation that we understood well and (ii) whenever possible we took clips not from the very start of a conversation, so the participants had time to warm up.

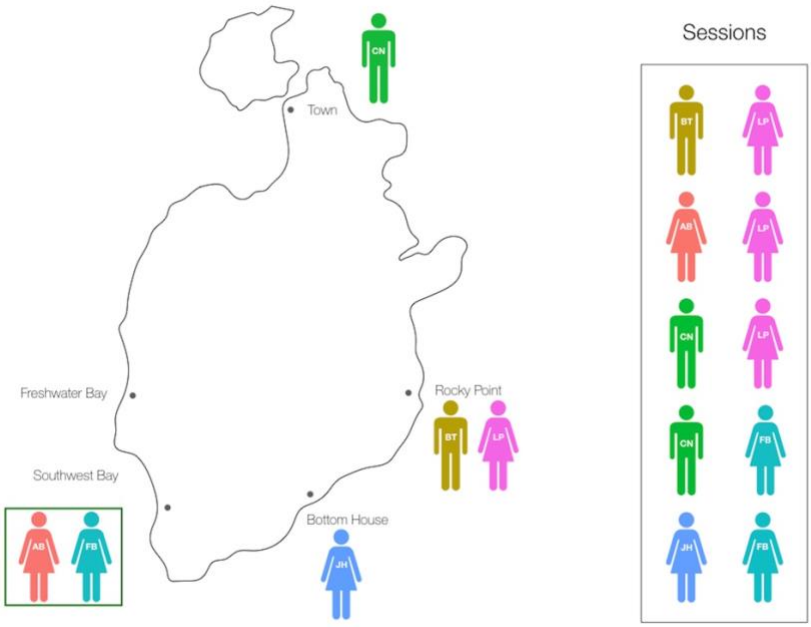


Figure 4-4: Distribution of signers around the island and composition of conversational dyads

3.2 Identifying OIR

To identify OIR sequences and RIs, we examined the data for cases in which a signer appeared to address trouble with perceiving or understanding something previously mentioned in the conversation. Once one such instance was identified, we employed the next-turn-proof procedure, a common tool in conversation analysis, that involves examining the subsequent response of the interlocutor to understand the action performed by the previous turn (Sacks et al. 1974; Sidnell 2013). For a case to be classified as a repair initiator, it had to be treated as such by the conversational

participants, receiving a solution, or a response from the interlocutor. Thus, our focus was on successful attempts at initiating repair.

Identifying successful initiations of repair based on this criterion was not always straightforward. Some behaviours were produced in response to trouble, and received solutions, but were not actively soliciting an answer. For example, one signer habitually gazed off into the distance when asked a question, to think before formulating a response, which often prompted his interlocutor to add further clarification. Because actions like these were not actively initiating repair, they were excluded. Relatedly, we focused only on explicit strategies in which signers actively produced a change in manual or non-manual signals to initiate repair. We therefore excluded implicit strategies such as the *freeze look* practice described by Manrique and Enfield (2015) from the coding.

Repair initiators must also target some identifiable trouble source in previous turn or turns (Schegloff 1997). We found some instances where utterances were formed much like a repair initiation and received a solution, however it was difficult to identify an initial trouble source. Without an explicit target of trouble, this made it difficult to distinguish these from more general question-answer sequences, therefore we did not include them.

Finally, we excluded some cases on the basis of translation. Other studies of repair in a sign language have relied on the expertise of deaf signers from the language community for translation of signed data (Manrique 2016; Skedsmo 2020b). Such language support from PISL signers was unavailable in our case and the translation of this data was instead done by the first author in collaboration with ID. Because of this we took a conservative approach in identifying OIR excluding cases of repair where we could not provide a satisfactory translation of the entire sequence, including the trouble, the repair and the solution.

In summary, for an instance to be included in our collection of repair initiations, it had to: (i) actively seek to address trouble in the conversation, (ii) be treated like repair, with the interlocutor providing a solution, (iii) be linkable to an identifiable trouble source and (iv) be in a sequence that was translatable by the researchers. After examining the data, we found 224 instances that satisfied these criteria: this collection of cases comprised our final dataset. Table 4-1 outlines the distribution of data and tokens from each session.

Table 4-1: Distribution of data and RIs

Session	Total time sampled (hh:mm:ss)	Number of RIs
FBJH	13:00	42
CNLP	14:00	64
CNFB	13:00	61
BTLP	11:00	25
ABLP	11:15	32
Total	01:02:15	224

3.3 Coding OIR

We used ELAN (*ELAN [Computer software]* 2020) to annotate and code the video data. For coding different categories, we adapted the coding schemes from Dingemanse et al. (2016), Manrique (2016) and Skedsmo (2020b), using several time-aligned ELAN tiers to classify RIs.

First, we used a coding tier to distinguish between open and restricted types, with different types within each category. The categories are presented in Table 4-2 with examples of each. Within open class we identified (i) non-manual only formats: those that

employed solely non-manual resources to initiate repair, (ii) **question word** formats: those that employed a question sign to initiate open repair, and (iii) **formulaic** formats: those that used manual signs other than a question sign to initiate open repair. Within the restricted class, we identified (iv) **content wh-question** formats: in which wh-questions (signs or mouthing) were used to prompt specification and (v) **alternative question** formats: those in which two or more candidates were presented as potential solutions to be confirmed. We also identified (vi) **repetition** formats: those in which partial or full repetition of the trouble was either used to prompt specification, or presented to be confirmed or disconfirmed and (vii) **candidate understanding** formats: those that presented an interpretation of the trouble source for confirmation or disconfirmation.

Table 4-2: Types of repair initiators

Type	Sub-Type	Description
Open	Non-manual only	Only non-manual resources used
	Question sign	Use of a question sign without accompanying manual signs
	Formulaic	Strategies that do not use question signs or rely solely on non-manual resources
Restricted	Content wh-question	Content question formulated using a wh-question (sign or mouthing)
	Alternative question	Question that presents two or more options
	Repetition	Partial or full repetition of a trouble source (using the same lexical signs) without any additional information
	Candidate understanding	Interpretation/explanation of the trouble source that may include repeated material

We also included a coding tier that captured information about the repair sequence in which the repair initiation was embedded. Repair does not always occur in a

prototypical simple sequence. It can also be embedded in a longer sequences in which multiple repair initiations are required to resolve the trouble and resume progressivity (e.g. Skedsmo, 2020b). We included a tier to mark whether the repair was part of a simple or multiple sequence of repair, and if the latter, which position in the sequence it had. Thus, if a repair initiation was part of a simple sequence of trouble followed by repair initiation followed by solution, it was labelled (*s*). In the case of longer sequences in which many repair initiations were used, the first in the sequence was labelled (*c1*), the second (*c2*) and so on. Because some multiple sequences included failed repair initiations, we included these failed attempts in annotation, but not in the analyses. They were coded as failed (*f*).

Repair initiators often use tools that are common to accomplishing other actions in conversation. For example, non-manual repair initiations may make use of eyebrow raising and body leaning, signals that are also commonly used to express surprise. In fact, repair initiators can perform multiple actions, such as initiating repair and expressing surprise, at the same time. Following Kendrick (2015) and Schegloff (1997), we included all cases that performed repair initiation in our final dataset, regardless of whether they also performed additional actions.

4 Types of repair initiations

We found a total of 224 repair initiations in the data. Some conversations had relatively many repair initiations and others had relatively few. Of this set of 224 cases, we report the various sub-categories and their frequencies (see Table 4-3).

Open class repair initiations do not target the trouble source, but flag lack of understanding more generally. We found 22 cases of open class repair initiations, making

up roughly 10% of all repair initiations in the sample. These were broken down into three sub-types: (i) non-manual only, those that solely use signals of the face and body without use of the hands, accounted for 16 of these cases. Of the remaining six cases that did involve the hands, (ii) question sign types that used the general interrogative sign, glossed as WH[9], accounted for 5 cases and (iii) one case used the sign COME.

Restricted repair initiations all targeted the trouble source in some way. These were much more common in the data, accounting for 90% of all cases (n=202). Of these restricted strategies, both content wh-questions (n=15) and alternative questions (n=4) were relatively uncommon. Highly common, on the other hand were restricted offers. Repetitions accounted for 51 cases, and candidate understandings were by far the most common, accounting for 131 cases.

Table 4-3: Overview of type distribution

Type	**Subtype**	**Number**	**Percentage**
Open	Non-manual only	16	7.14
	Question sign	5	2.23
	Formulaic	1	0.45
	Total Open	**22**	**9.82**
Restricted	Content wh-questions	15	6.70
	Alternative questions	4	1.79
	Repetitions	52	23.21
	Candidate understandings	131	58.48
	Total Restricted	**202**	**90.17**
Total		224	100%

[9] In line with conventions in the field, we gloss signs using small caps.

4.1 Open types

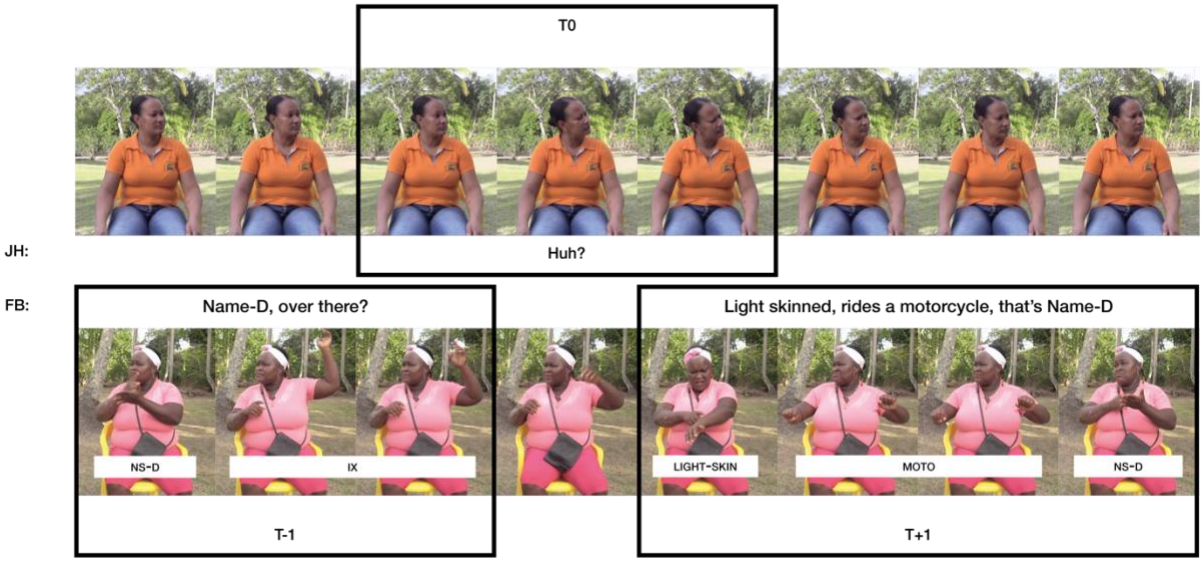
4.1.1 Non-manual only

Minimal resources are commonly used to perform open class repair initiation in conversation. In spoken languages, this is often done using interjections such as English "huh" (Enfield et al. 2012). However, speakers have also been demonstrated to do open repair using small movements of the face and body, such as furrowing eyebrows, tilting heads or frowning (e.g., Dingemanse 2015; Kendrick 2015). In signed languages, these non-manual resources such as furrowed eyebrows, body leans are often used to initiate repair (e.g., Manrique 2016). Signers also can use the standalone articulation of spoken words, known as *mouthing*, to initiate repair solely non-manually (e.g., Skedsmo 2020b).

Non-manual only repair initiations were the most common type of open class repair initiations in our data, and made up roughly 7% of all repair initiations. We found several different non-manual resources used in our data to initiate repair, including eyebrow movement, head tilt and body lean. These non-manuals were often combined to form repair initiations. We also found the same articulator could be used to initiate repair in different ways. For example, some repair initiations featured the body leaning forward, others the body leaning backwards; some featured raised and others furrowed eyebrows. Non-manual repair initiations were most frequently used when there was eye contact between both signers, and usually received swift solutions when recognised by signer who produced the trouble turn.

A prototypical example can be found in Extract 4-1 where JH uses a head tilt to initiate repair on a person reference made by FB. FB describes to JH her childhood experiences of getting into fights with hearing primary school classmates, who teased her

for being deaf. After referring one bully by using the name sign NS-C[10], FB moves on to discuss a second person referred to as NS-D. The name sign NS-D presents a trouble source for JH (T-1), because she does not recognise the referent associated with the name sign. JH initiates repair using only non-manual means (T0): tilting her head sideways and furrowing her eyebrows. Noticing JH's repair initiation, FB quickly provides more descriptive information about the referent (T+1).



Extract 4-1: Non-manual repair initiation. Components of the repair sequence are delineated with boxes (T-1 for trouble source, T-0 for repair initiation, T+1 for solution)

This example illustrates many prototypical features of non-manual repair in our data. Because eye gaze is established between the signers, FB responds almost immediately to JH's non-manual repair initiation. JH, in turn, holds the head tilt only until she sees FB begin providing a solution (T+1), upon which she releases the hold.

[10] To refer to individuals, FB uses several *name signs*: these are single signs, used for third person reference to individuals. We gloss them using the prefix NS (e.g. NS-C, NS-D).

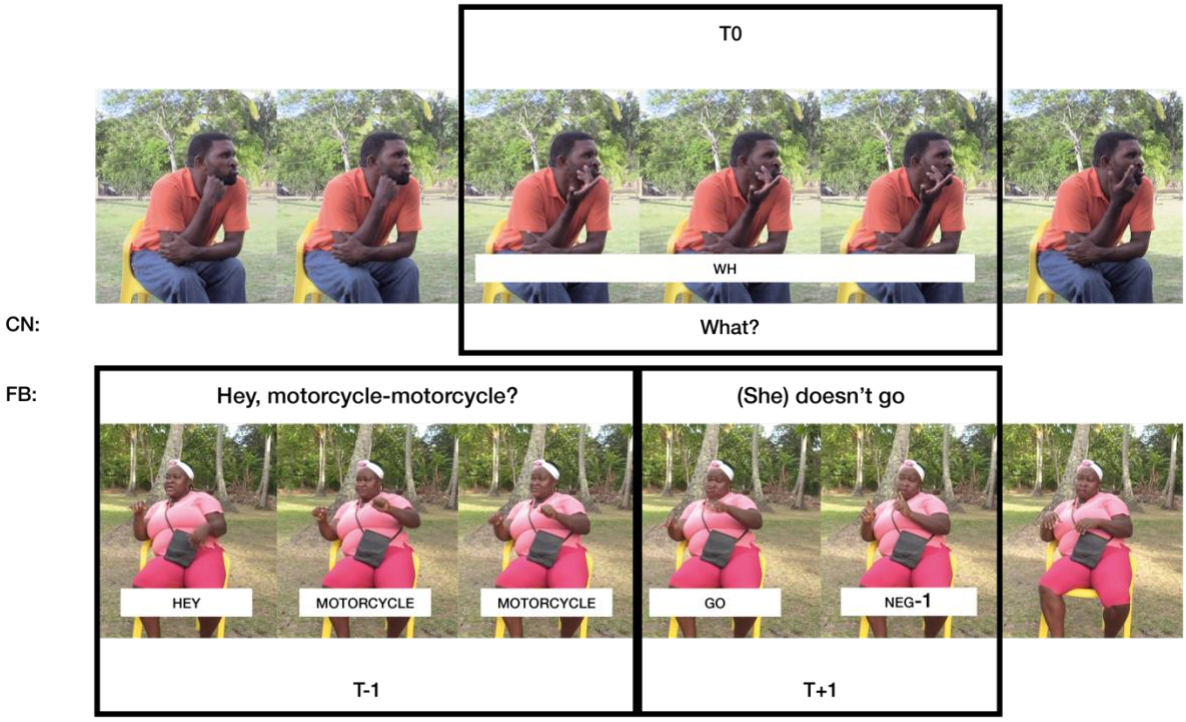
Non-manual repair initiations in our data resolved trouble quickly, with minimal disruption to the conversation. However, these non-manual repair initiations appeared to be most effective when eye contact was established at the moment the trouble source was produced.

4.1.2 Question signs

In spoken and signed languages, an interrogative (often *what*) is usually borrowed from the question word paradigm to be used for open repair initiation (Dingemanse et al. 2014). In PISL, it is reported that there is only one general interrogative question sign, glossed WH (Washabaugh et al. 1978). This was the sign we found most frequently used for open repair initiation. We found 5 open repair initiations that used this question sign, accounting for roughly one quarter of all open cases, but a relatively small proportion of all RIs. Open RIs using WH were almost always combined with non-manuals, except for a single case where the sign WH was used without non-manual marking.

This case is presented in Extract 4-2, taken from a sequence in which two friends FB and CN are talking about getting around in the neighbouring island San Andres. The example represents the first repair attempt in a longer sequence in which CN initiates repair several subsequent times (not pictured). After discussing that FB's cousin uses taxis to get around San Andres, FB tells CN that she doesn't take motorcycle taxis, she takes car taxis, which are expensive. She begins the sequence by getting his attention and signing HEY MOTORCYCLE (T-1) to introduce the topic of motorcycles as transport means. This causes trouble for CN, who then initiates repair using the manual sign WH, with no additional non-manual markers (T0). FB then attempts to clarify by signing GO

NEG-1 (T+1), (translation: “She doesn’t go (by motorcycle)”) which ultimately requires more subsequent clarification from CN (not pictured).



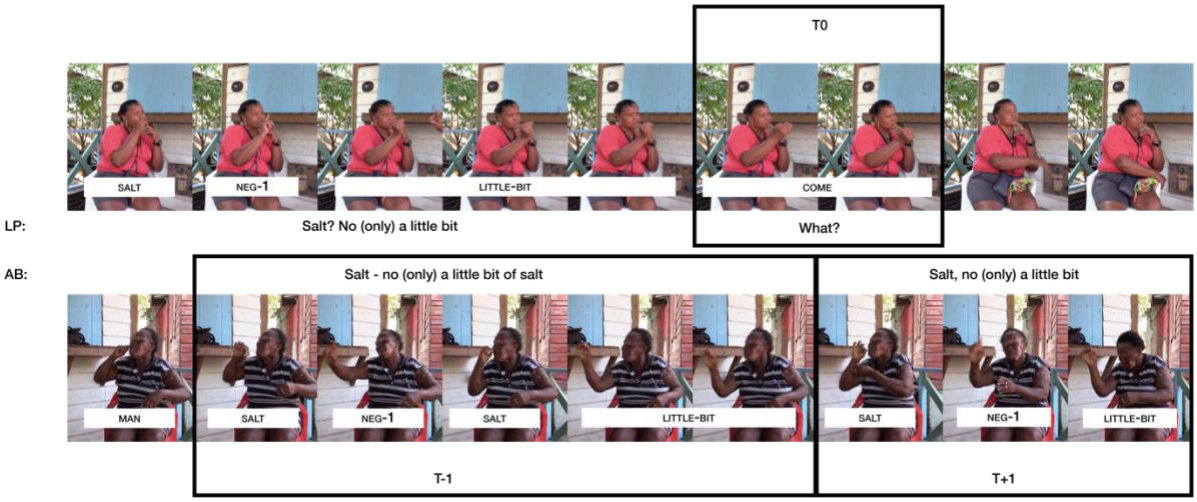
Extract 4-2: Open wh-question repair initiation without non-manuals

4.1.3 Formulaic

Formats that do not use minimal resources like interjections/non-manuals and do not use question words are referred to as *formulaic*. These strategies often manage social relationships or enact politeness when initiating repair, as is the case of “sorry” in English (Dingemanse et al. 2014). We found one case in which a signer uses a manual sign that is not the general interrogative to initiate open repair: specifically, the sign COME.

This example is presented in Extract 4-3. This case is embedded in a longer sequence with multiple repair initiations (not pictured), here we focus on the latter part of the sequence. In the conversation, AB and LP are discussing cooking recipes. AB describes preparing a particular dish and mentions that she adds little bit of salt. LP, who

is concerned with healthy eating, quickly attempts to remind AB that she shouldn't use salt, and asks if AB uses just a little bit. AB agrees, repeating LP's assertion that salt shouldn't be used and assures her that she uses only a little bit (T-1). This repetition causes confusion for LP, and is followed by LP initiating repair (T0): she furrows her eyebrows, leans her head forward and uses the sign COME (Extract 4-3). AB then repeats what she previously signed, that she puts only little salt (T+1).



Extract 4-3: Formulaic open repair initiation

The use of the sign COME appears to be unambiguously interpreted by AB as a request for clarification, albeit one that is not targeting any specific aspect of the trouble source. This is evidenced by AB's response: she repeats her utterance almost verbatim. This use of COME may be similar to the English expression "come again" which is specialised in eliciting repetition of previous turns. Nevertheless, the fact that this format only appears once in the dataset makes it unclear whether it an idiosyncratic practice used by LP or a more widespread technique of formulaic repair initiation among PISL signers.

4.2 Restricted types

4.2.1 Content wh-questions

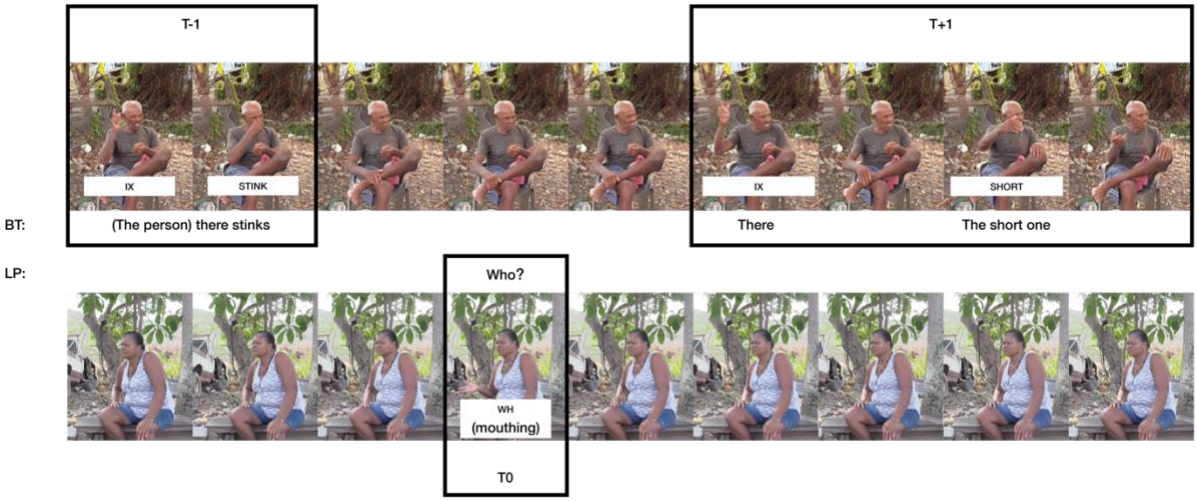
All languages for which repair has been studied have content-specific words for asking questions: these are words such as English “where” or “when” that narrow the semantic domain of the trouble source. PISL has been reported to have only a single general interrogative, the sign WH, that is used across various semantic contexts (Washabaugh et al. 1978).

We found 15 cases of restricted repair initiations that used wh-questions to target trouble. In these cases, signers used two strategies: (i) the general interrogative sign WH, and (ii) a content question sign specified for number that has not yet been reported in PISL, that we gloss as HOW-MUCH. While the sign HOW-MUCH was found on its own as a single-sign repair initiation, the sign WH was always combined with additional information to further target misunderstanding. Firstly, signers use mouthings to add semantic specificity: we found cases where WH combined with clearly articulated mouthings of content questions such as “why” and “how much”. Secondly, signers combined WH with other manual signs to form multi-sign utterances to specifically target trouble: this resulted in combinations such as WH + TELL (what did you say) or WH + THINK (what did you think). [11]

Extract 4-4 exemplifies the use of the general interrogative WH, here combined with a reduced mouthing. In this extract, BT is commenting to LP that a mutual

[11] These findings also contrast with observations that PISL signers do not combine the general interrogative with specifying information (Washabaugh, de Santis & Woodward 1978: 101)

acquaintance of theirs smells bad (T-1). LP uses the question sign WH combined with an unidentified mouthing to request more specification (T0). BT responds with further description of the person, pointing to where they live and indicating their height (T+1). While the manual sign that LP used is a general one (WH), it is interpreted by BT to target the category of person: we find evidence for this in the solution (T+1) where he provides additional information about the person. One reason he interprets it to target the category of person could be the mouthing that accompanies LP's sign: while the mouthing is very reduced and hard to interpret, it resembles a "who" mouthing.



Extract 4-4: Restricted content wh-question repair initiation

In addition to the general interrogative combined with mouthings, we found the use of one semantically specified content question that have not been mentioned in the literature so far, the sign HOW-MUCH (see Figure 4-5). We found a single instance used by one signer.[12]

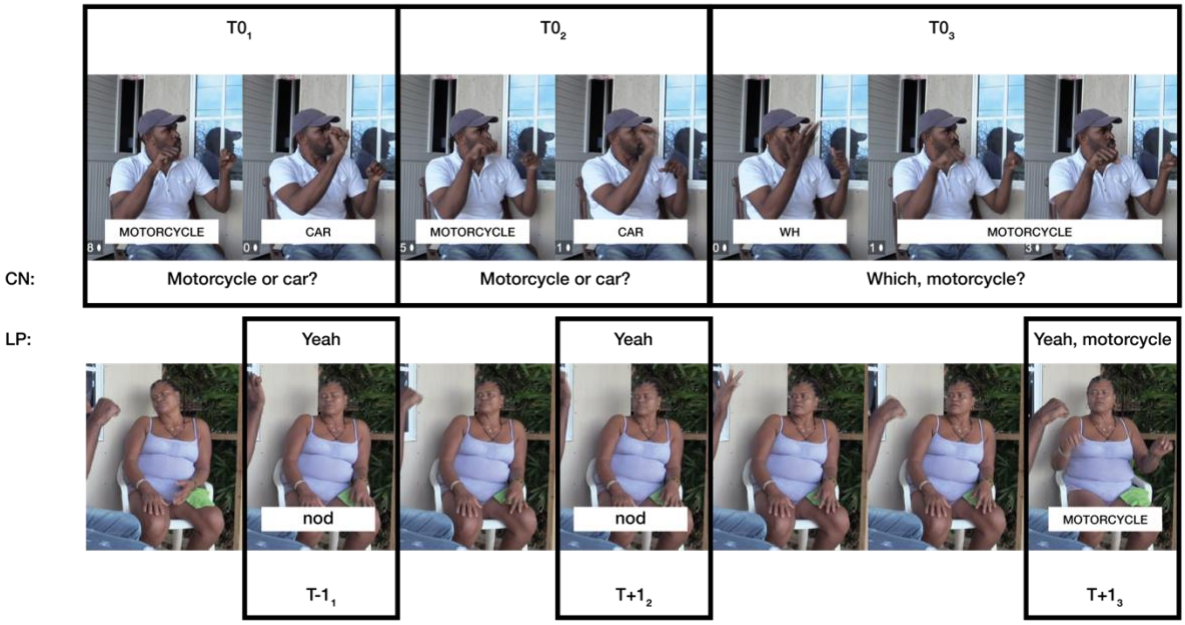
[12] Other instances have been observed in the same conversational data used by other signers in non-repair contexts.

Figure 4-5: HOW-MUCH with mouthing “how much”

4.2.2 Alternative question type

Alternative questions are strategies in which two or more options are presented as candidates for understanding. These were relatively infrequent accounting for less than 2% of total repair initiations, and all 4 instances were produced by the same signer.

An example of this format is presented in Extract 4-5. CN and LP are discussing an acquaintance who recently moved to the neighbouring island San Andres. LP outlines the person’s new daily schedule, that he will go to his work at the airport and then will return to his family’s house by taxi (T-1, not pictured). CN is not clear whether this is a motorcycle taxi or a car taxi, and initiates repair using an alternative question ($T0_1$). When his question doesn’t get a satisfactory solution, he repeats it ($T0_2$), then switches technique and tries another strategy ($T0_3$).



Extract 4-5: Alternative question

CN begins his repair initiation ($T0_1$) using the alternative question MOTORCYCLE CAR (translation: "Does the acquaintance take a motorcycle or car taxi?"*).* However, as he presents the first option, MOTORCYCLE, LP already begins to affirms it with a deep nod with her eyes closed ($T+1_1$) and she misses the second option CAR. He repeats the alternative question ($T0_2$) and again, LP nods to affirm MOTORCYCLE ($T+1_2$). However, this time, her nod overlaps with the second option signed by CN, CAR. This overlap appears to confuse CN, as evidenced by his move to upgrade his repair initiation by restricting the scope further. Instead of asking which of the two, he simply asks: WH MOTORCYCLE? ($T0_3$). In response to this restricted offer, LP confirms with a nod and repeats MOTORCYCLE ($T+1_3$). CN then displays non-manual signs of resolution, suggesting that the repair solution was sufficient: he blinks, averts his eye gaze and changes body position (not pictured).

The issues of timing and overlap in this extract were common to most other instances of alternative questions. In the example above, LP already nods, closing her

eyes, in response to the first of two options MOTORCYCLE, and as a result does not see the option CAR. Therefore, while CN means to present an alternative question, LP effectively sees a single option or candidate, which she confirms. Indeed, there is a certain amount of negotiation that takes place before the trouble is resolved at $T+1_3$ (not pictured), and CN must upgrade to a more specific strategy to get a satisfactory solution. Much like this example, all alternative questions that we found were embedded in longer strings of multiple repairs, where ultimately a different repair initiation strategy was necessary to find a final solution.

4.2.3 Repetition

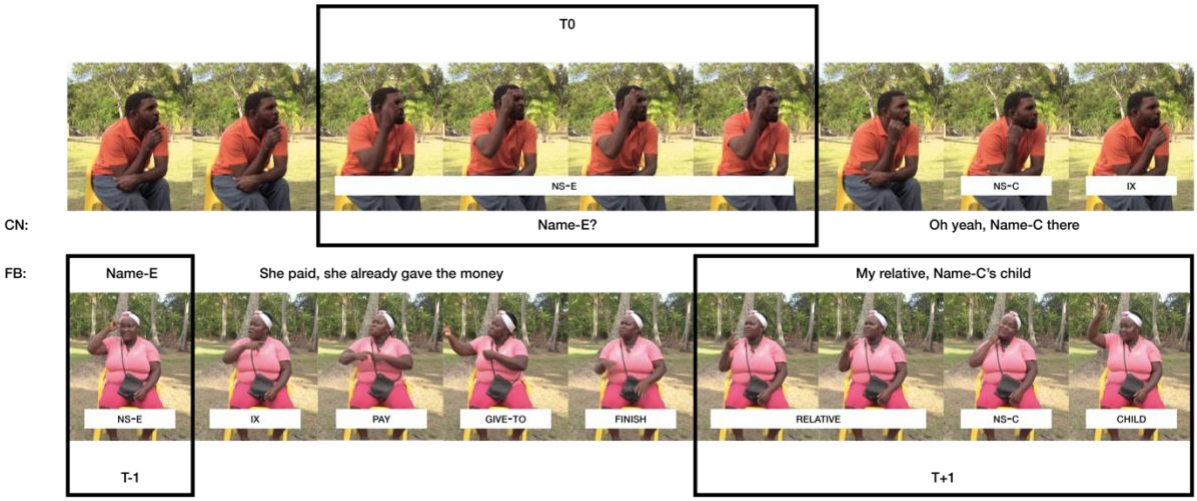
Repetition is a commonly used strategy when initiating repair across languages. Many repair initiations include or are composed entirely of repeated material. We found our signers used repetition in two different ways: as a request type and as an offer type. While the distinction between the two types was sometimes clear, in other cases was difficult to determine which sub-type fit. This was because either (i) the solution did not appear clearly fitted to the repair initiation e.g., the signer initiating repair appeared to want more information but the solution given by the interlocutor was a simple confirmation or (ii) the solution included first a confirmation followed by more specifying information. In this section we discuss the two clear sub-types, repetition as a request type and repetition as an offer type.

4.2.4 Repetition as a request type

In the cases when repetition was a request, signers repeated part or all of the trouble-source turn and were provided with clarification in the solution. These so called *trouble-*

presenting repeats (Dingemanse et al. 2014) were sometimes found in the data accompanied by expressions of confirmation.

Extract 4-6 exemplifies a trouble-presenting repeat of a single sign. In this example, FB explains to CN that she has given her mobile phone to her niece (T-1), who will repair it for her. CN does not recognise the niece's name sign and thus has trouble resolving the reference. Consequently, he initiates repair by repeating the name sign (T0) and holding the sign until FB offers further specification about the individual (T+1).



Extract 4-6: Repetition as restricted request

Several features of this example are prototypical of the request formatted repetitions in our data. First, trouble-presenting repeats were often accompanied by non-manuals. In this example, CN's repetition is accompanied by a backwards body lean, an open mouth and a brow furrow. CN's repair initiation is produced in overlap with FB's signing, and as a result, she does not immediately notice it because she averts her eye gaze to continue signing. CN holds the repeated sign not just until FB notices it, but until she begins to provide a solution. Once the solution begins, CN leans forwards again,

releasing both the sign and the non-manuals. Similar to this example, repetition as requests were often comprised of single signs or short utterances and were held until a solution began.

4.2.5 Repetition as an offer type

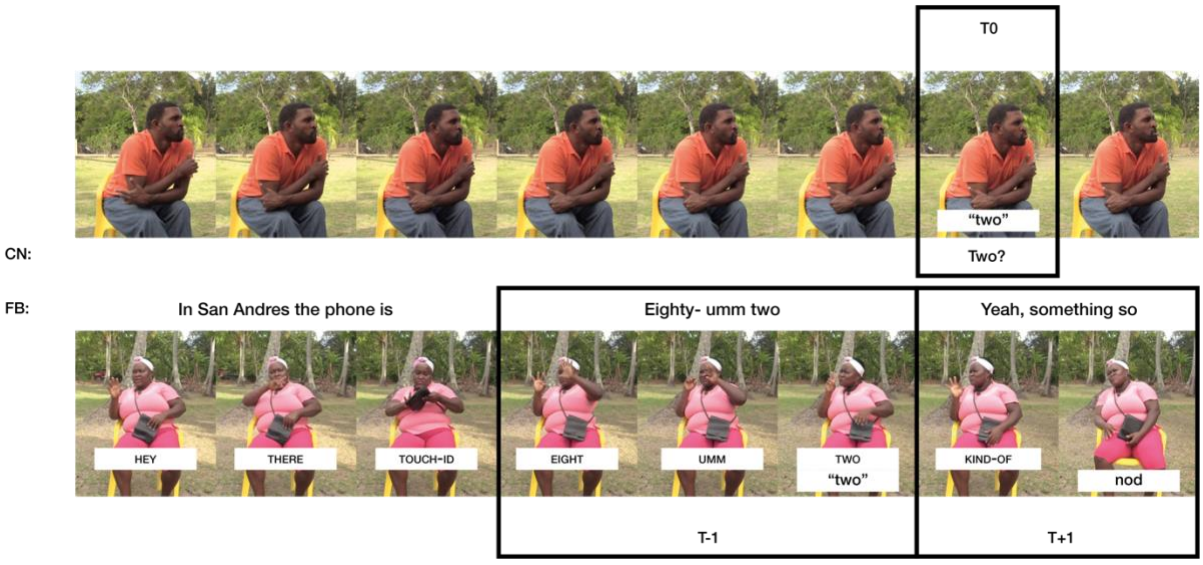
Repetition was also found in offer type repair initiations. In these instances, the repetition was treated not as a request for more information, but as a *restricted offer* to be confirmed or disconfirmed. This use of repetition was considerably more common than repetition formatted as a request.

A typical example is presented in Extract 4-7 in which FB makes a statement, then JH repeats it and FB emphatically confirms it. The extract is part of a longer conversation in which JH tells FB that her friend told her daughter about an embarrassing childhood experience. After establishing that the friend remembered the experience and told JH's daughter, JH assures FB that the friend has a good memory and doesn't forget things (T-1). FB opens her mouth in surprise and repeats the beginning of JH's utterance FORGET NEG-1 (translation: "She doesn't forget?") (T0). JH then emphatically shakes her head, to confirm that the friend doesn't forget (T+1).

Extract 4-7: Repetition as a restricted offer

FB's repair initiation at T0 is prefaced by an open mouth, and accompanied by a smile. This exemplifies a common feature of offer type repetitions: they were often accompanied by non-manual markings that appeared to signal surprise or affirmation, suggesting high levels of understanding. Also notable is the overlap between repair initiation (T0) and solution (T+1). As FB produces the final sign of her utterance (NEG-1), JH already shakes her head to confirm the statement.

Repetitions were also not limited to manual signs, and we also found one example where a signer produced a partial repetition reproducing the original mouthing but omitting the manual sign. This can be seen in Extract 4-8, where FB is telling CN about the cost of a mobile phone in the neighbouring island of San Andres. She uses the manual sign TWO and the mouthing "two" (T-1). CN then initiates repair (T0) by repeating only the mouthing but not the manual sign "two", which FB confirms by signing KIND-OF with a head nod (T+1).



Extract 4-8: Partial repetition mouthing only

In sum, repetition was used in different ways to target trouble. In request types, repetitions were often short and occur right after the trouble source turn (Extract 4-6). In offer types, they were either also short repetitions (Extract 4-8) or took longer verbatim repeats of parts of the trouble source (Extract 4-7). For offer types, the presence of non-manual markers such as smiling and nodding suggest that these repetitions were also used for other social actions such as surprise or registering receipt.

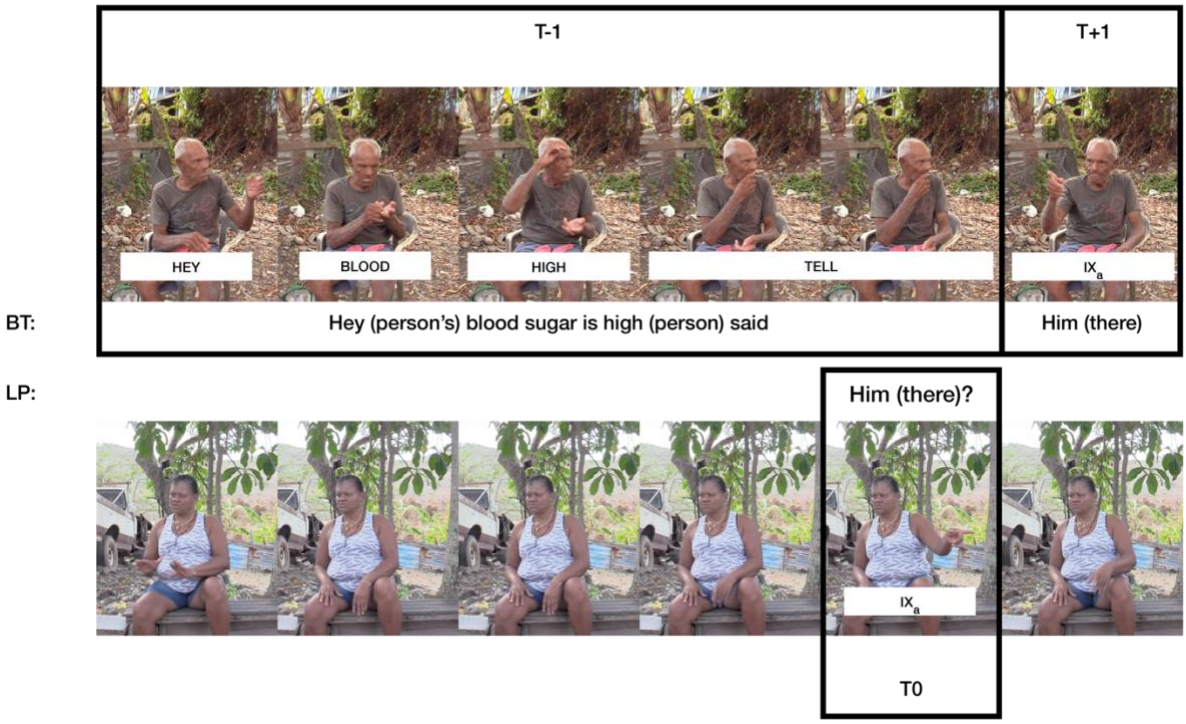
4.2.6 Candidate Understandings

At the high-understanding end of the repair spectrum are candidate understandings. These are used across languages to present hypotheses about the trouble source. In our data, this strategy accounted for 58% of all repair initiations, and had very different manifestations, ranging from using a single sign to summarising a whole story. We describe the most common of these strategies below: pointing, other-paraphrasing, repetition with paraphrasing.

4.2.7 Pointing

One type of candidate understandings was achieved by pointing. Pointing was particularly used when the trouble sources was reference to a person or place. In these situations, signers used *metonymic pointing*, that is pointing to a location to index a referent associated with that location, to present candidate understanding of the referent. This is exemplified in Extract 4-9, where BT introduces a new referent to the discourse and LP uses a point to present her interpretation of the identity of the referent. BT introduces a referent with high blood pressure but does not specify the person (T-1). To make sure she understands, LP initiates repair by pointing in the direction of a nearby

house (T0), where the referent she thinks BT is talking about lives, and BT confirms by repeating her point (T+1).[13]



Extract 4-9: Pointing candidate understanding

4.2.8 Summarising

Another commonly used strategy was to summarise a longer story as a confirmation check, a technique often used to target misunderstanding embedded in a longer turn. Signers would first wait for the storyteller to finish, and then would attempt to initiate repair by summarising all or part of the story. This could happen either in a single turn or as part of a sequence of repair initiations.

An example can be found in Extract 4-10. FB has just finished recounting a long story of her childhood escapades where she snuck out without doing her chores and

[13] While the signers appear to point in different directions in the images, this is because they are filmed by two separate cameras pointing in opposite directions.

upon her return home, her father punished her (T-1, not pictured). After the story is complete, JH takes the opportunity to summarise her understanding of events. She begins by summarising the first part of the story ($T0_1$), which FB confirms ($T+1_1$), then continues to offer her interpretation of the story ($T0_2$) which FB also confirms ($T+1_2$).

Extract 4-10: Summarising as a candidate understanding

JH uses two candidate offers. In the first repair initiation ($T0_1$), she summarises the order of events as FB recounted them to her, providing a *candidate hearing* (Schegloff et al. 1977) of the trouble source. As she is signing, FB produces an overlapping response ($T+1_1$), nodding and confirming that her father grabbed and beat her. JH makes a slight prosodic pause before beginning her second candidate ($T0_2$) which is slightly different than the first. While FB did not explicitly say that she didn't expect to get caught, JH interprets this and presents this a *candidate interpretation* (Rossi 2015) for FB to confirm. FB readily confirms the interpretation, with a headshake that overlaps JH's final sign ($T+1_2$). JH's subsequent turn is accompanied by a smile, suggesting that she has now fully understood (not pictured). Non-manuals that suggest high understanding, like the

smiling and nodding found in JH's repair initiation, were a common feature of summarising candidate understandings.

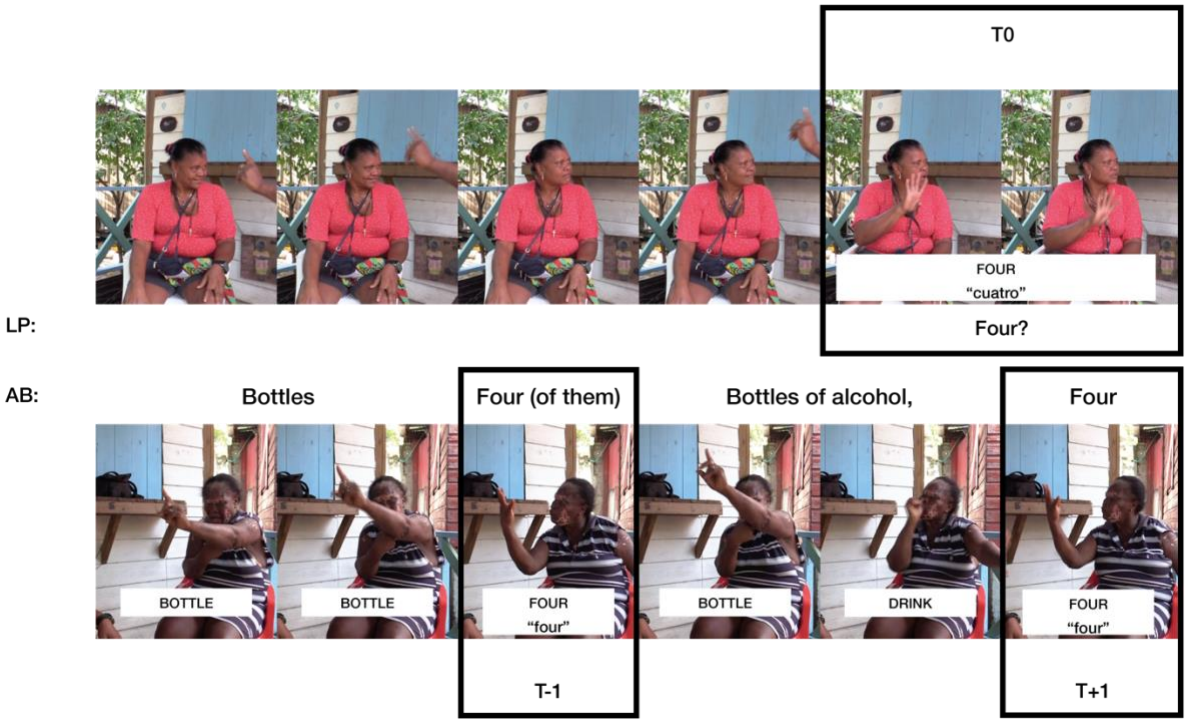
4.2.9 Candidates with repeated material

Candidate understandings also sometimes included repetition of the trouble source. Examples of this were found across several conversations where signers used repeated material from the trouble source combined with specifying information in the form of mouthings, lexical variants and non-manuals.

Mouthings were used in two different ways in combination with manual signs in these strategies. First, they could be added to manual signs that were repeated from the trouble source. In these cases, signers repeated manual signs, adding mouthing where there was previously none. In doing so, they combined the repeated manual sign with a candidate understanding of the sign's meaning presented via mouthing. Second, mouthings that accompanied the trouble source could also be modified with repetition.

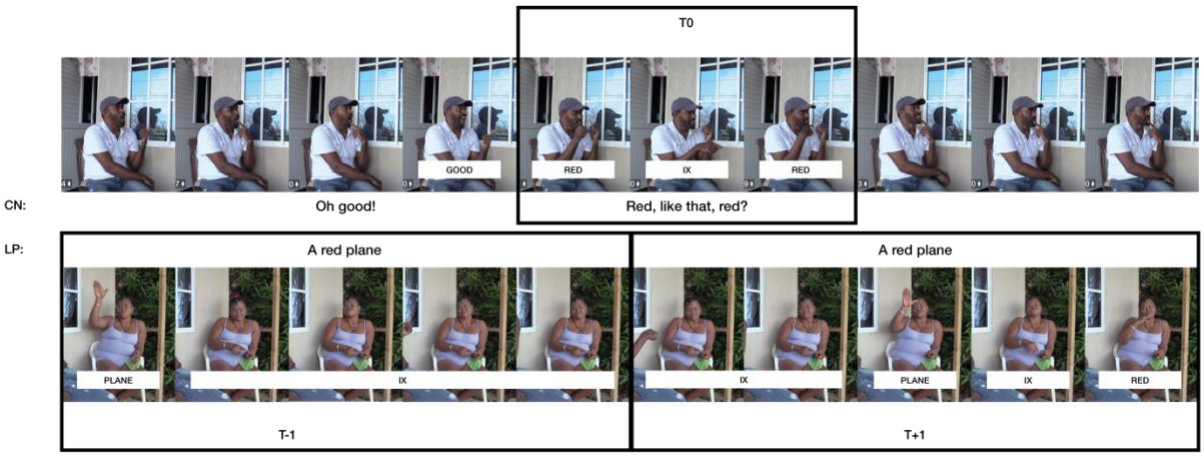
In a case of the latter, presented in Extract 4-11, a signer partially repeated a trouble source and modified the mouthing, replacing it with semantically equivalent mouthing in a different language. AB first signs the manual sign FOUR and the Creole/English[14] mouthing "four" (T-1). LP then initiates repair on this trouble source by signing FOUR and Spanish mouthing "cuatro" (translation: "four") (T0). In this way, the signer replaces the mouthing with a semantically equivalent mouthing in another language that is part of the island's communicative ecology.

[14] Given the lexical and phonological similarities between the Creole spoken in Providence and English, it is not possible to distinguish whether the mouthing stems from one or the other.



Extract 4-11: Combination of repetition and candidate understanding

Signers also combined repetition with candidate understandings in ways that did not involve mouthing. In these instances, signers combined repetition of a sign from the trouble source with another semantically equivalent candidate understanding. This could be by using a different lexical variant. An example of this can be found in Extract 4-12. LP uses her fading red nail polish to index the colour *red*, as she tells CN about a red plane (T-1). To confirm the colour, CN uses a lexical sign RED (T0), which LP confirms by nodding and re-indexing her nail colour (T+1). In this case, CN presents the lexical sign as a confirmation check, to make sure he understands the correct colour. This method was also found often when signers had two different means of expressing a concept, such as two distinct lexical variants.



Extract 4-12: Candidate with repetition

While candidate understandings demonstrate a very high level of comprehension (Dingemanse et al. 2014), they can be critical for addressing genuine misunderstandings. In Extract 4-13, for example, FB is recounting to JH her memories of sign language researchers visiting Providence while she was a child, and her experience teaching local signs to a white foreigner. JH follows along the story, then uses a candidate understanding to clarify whether FB taught the foreigner or vice versa. She first asks if FB didn't know the signs ($T0_1$) to which FB begins to disconfirm ($T+1_2$), but JH already continues by asking IX TELL-YOU (translation: "She told you?") ($T0_2$) and FB repairs to clarify NEG-1 IX-1 TELL-HER (translation: "No, I taught her!") ($T+1_2$).

Extract 4-13: Candidate understanding disconfirmed

In sum, candidate offers were very frequent and varied in their form. Some were quite minimal, using a single sign, point, or non-manual to offer opportunity for resolution (Extract 4-9, Extract 4-11). Others could comprise multi-sign utterances that may include summaries as well as repeated material (Extract 4-10). Like offer formatted repetitions, many candidates offers were accompanied by non-manuals that suggest they were performing surprise or registering receipt.

5 Sequences of repair initiations

In addition to examining categories of repair initiations, we also examined frequency at the level of repair sequence. Here we present results focused on three major questions: (i) how frequent were independent repair sequences (i.e., a multiple sequence with 3 RIs would only count as a single independent sequence), (ii) what was the relationship between RI type and place in sequence and (iii) how was it possible to categorise those sequences.

5.1 Quantitative results

Firstly, we examined independent repair sequences by counting the number of single and first component (c1) RIs. We found that independent repair sequences were quite frequent, occurring on average every 28 seconds (at a rate of 2.1 repair sequences per minute).

In addition to this, we found that multiple repair sequences, those in which more than one RI was used to resolve misunderstanding, were highly frequent in (n=149) about twice as common as single repair sequences (n=75). While sequences were most often limited to two (n=55) or three (n=28) repair initiations in a row, we did find instances in which four (n=9) and five (n=1) repair initiations were used one after another.

We observed connections between where a RI was found in a multiple sequence and the type of format it was. Open RIs were found only in either simple repair sequences, or at the beginning of a multiple sequence (in position 1 or 2), suggesting that later in a sequence RIs are more likely to be restricted. Restricted repair types were used both throughout multiple sequences, appearing often in first and subsequent positions, as well as in single sequences. Figure 4-6 summarises the findings related to RI type and sequence position.

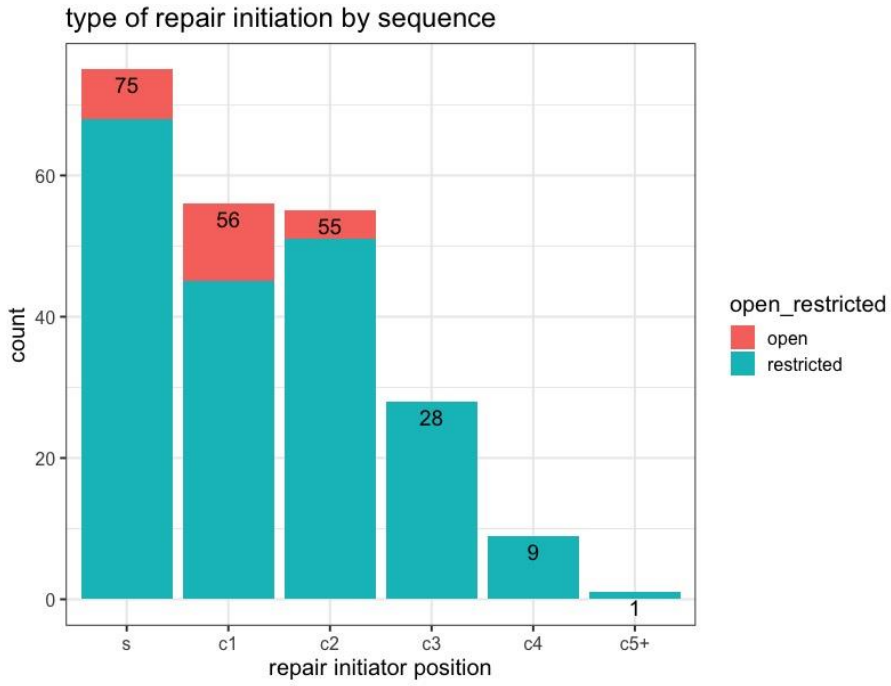


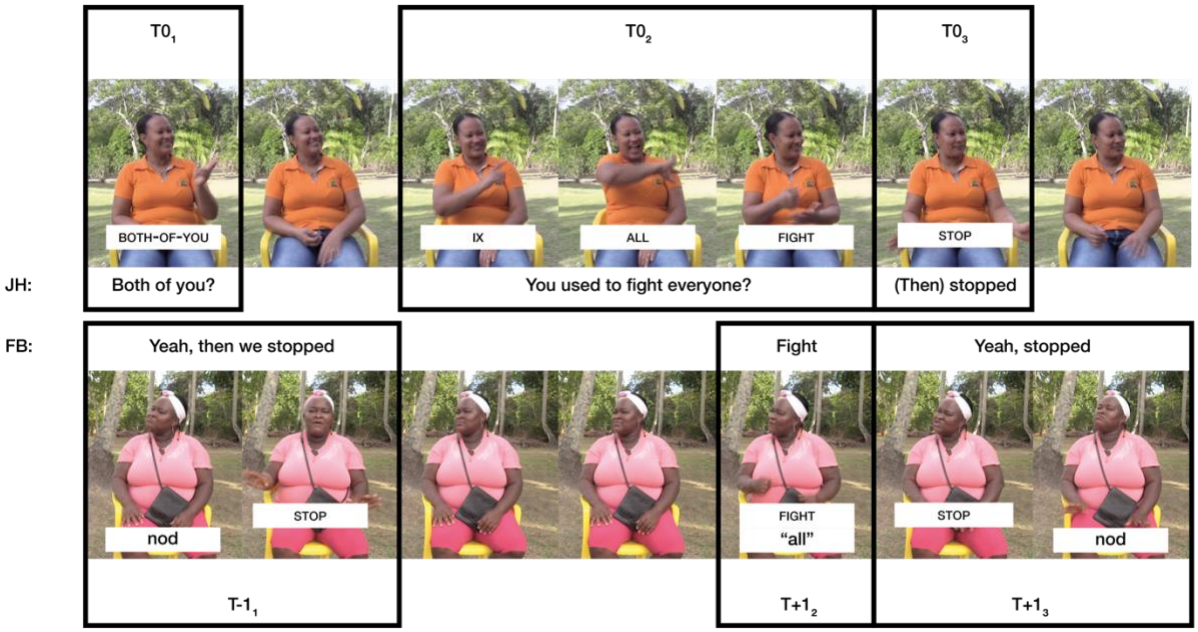
Figure 4-6: Repair initiator position by type

5.2 Qualitative results: multiple sequences

We found repair sequences that followed a simple trajectory (see Extract 4-1, Extract 4-9, Extract 4-11), as well as those that consisted of multiple embedded repair initiations (see Extract 4-10, Extract 4-5). Of the latter, we noted some specific patterns.

First, signers often used several candidates, either to target either a story (summarising) or to resolve a precise person or place reference. The most common type of multiple sequence was composed of multiple candidate understandings: stepwise summaries or interpretations of a story, presented in chunks for confirmation or disconfirmation. In these cases, all of the repairs target the same trouble source, which was usually a longer story. This is exemplified by Extract 4-14, in which FB has just finished recounting that her and her sister got into fights with everyone when they were younger (T-1, not pictured). JH repeats the story in three candidates, first clarifying who used to get into fights, with whom they used to fight and that they have now stopped

fighting everyone. Each RI is separated by a prosodic pause from JH, in which FB confirms them.



Extract 4-14: Multiple stepwise summary

Each of these targets the same trouble source, namely FB's story about her and her sister beating up people when they were younger. However, the trouble source is broken into constituent parts, and only when one part is confirmed, does JH offer another stage of repair initiation. In these cases, it is not that the solution is unclear or insufficient, instead the solution allows the person initiating repair to move on to clarifying the next part of the story. This example also shows another characteristic feature of many summarising or rephrasing RIs: overlapping signing between the T0 and T+1. In the solutions produced by FB at $T+1_2$ and $T+1_3$, she repeats the sign used by JH immediately before in the $T0_2$ and $T0_3$, with only a very short lag (this is why the two appear in the pictures to be signing the same thing at the same time for the signs FIGHT and STOP).

Another common form of multiple candidates was the use of an incremental approach to resolving reference to persons/places or things. For example, to deal with a

trouble in person reference “The woman who works at the ferry”, a signer may try first “The pretty one?”, then followed by “Who lives in San Andres?”. Much like in Extract 4-13, the candidates build on each other, each providing more information to resolve the trouble.

Other recurrent forms of multiple sequences included those that became more targeted as the sequence progressed. Such sequences started with open repair initiations, which were then upgraded to restricted initiations. We also saw sequences which comprised of candidate understandings followed by the sign WH with the mouthing “why”. In these cases, signers summarised their interpretation of a sequence of events then explicitly asked for the reason behind specific actions/events. Finally, we found one complex sequence in which initiating repair became a trouble source in its own right.

In sum, multiple sequences were highly common. They most often involved strings of candidates, summarising previous material. These sequences worked to address misunderstanding but also appeared to help demonstrate active ‘listenership’ or participation in conversation.

6 General discussion

This study examined naturalistic conversation among deaf signers of PISL and identified and described strategies, rates and sequences of repair initiation. In examining strategies, we find that like all other languages studied PISL signers employ a mix of open and restricted strategies to perform OIR. Open strategies were altogether less common, accounting for less than 10% of the data, and this set comprised mostly non-manual only repair initiations. Wh-questions and formulaic strategies were also attested but relatively less frequent. Restricted strategies accounted for over 90% of repair initiations. Among

these, the dominant form was candidate understanding, which made up more than half of all repair strategies found in the data. Repetitions were also common, whereas content wh-questions and alternative questions were relatively infrequent.

Next, we examined the sequences of repair, finding that both individual instances of repair initiation and independent repair sequences are highly frequent in conversation among deaf PISL signers. Looking at overall patterns, we found that multiple sequences were more common than single sequences, and that open types were more commonly found in the beginning of a sequence (first or second repair initiation). We also describe the most common type of sequence, the use of multiple candidate understandings.

These results support assertions about the universality of pragmatic categories (Dingemanse et al., 2015), while at the same time suggest some specific ways in which modality and linguistic features of PISL might influence design and frequency of repair strategies. In the rest of this section, we discuss these findings, with special attention to the role of modality and community structure.

6.1 Eye contact plays a critical role in initiating repair

Our results highlight the critical role that eye contact plays in initiating repair in a signed language. Visual attention is critical to perceiving a signed language, and previous research has showcased how breaks in visual attention to the active signer have been be central to conversational trouble: for example, looking away during signing may lead to missing a portion of signing, and requiring clarification (e.g., Skedsmo 2020b). However, not discussed in detail is the role of visual attention in achieving the communicative act of repair initiation. While visual attention is critical to perceiving signing, it is not critical to producing and communicating a signed message. In other words, when signing, it is not

necessary for the active signer to maintain eye contact with their interlocutor in order to be understood. Initiating repair on the other hand is a two-way communicative task, and both signers must engage in joint eye contact to ensure that the repair initiation is perceived by the signer who produced the trouble source. This has implications both for when in conversation repair is possible, and what types of repair initiation works, as we can observe in the PISL data.

6.1.1 Eye gaze allows for overlap

Joint eye gaze allows both signers to perceive the other's language production, thus opening up the opportunity for overlapping signing in different parts of the repair sequence. In our data, we find that signers produce repair initiation that overlaps with the trouble source, particularly when using non-manual repair initiation (Extract 4-1). This allows signers to quickly respond to trouble, and despite the non-specific nature of open OIR, the temporal overlap between the non-manual and the trouble source might help link them.

We also find that joint eye contact during repair initiation allows interlocutors to provide solutions that overlap with repair initiations. This manifests in different ways. We find turn-final holds in the data, in which the final sign of a repair initiation is held in place until a solution is provided. We also find when restricted offers are used, interlocutors provide solutions of confirmation or disconfirmation that often overlap with the repair initiation.

This opportunity for overlap appears to speed up resolution in some sequences but delay resolution in others. With the case of candidate offers, interlocutors often begin to produce (dis)confirmations or other-repetitions already while the repair initiation is in

progress (as seen in Extract 4-5, Extract 4-7, Extract 4-10, Extract 4-13 and Extract 4-14), allowing allows the sequence to progress quickly. Conversely, in the case of alternative questions, overlap appears to hinder progress. This is because for alternative questions it is important to perceive the full repair initiation before producing a solution. Other sign languages have established formats to flag alternatives, such as using a specialised sign for "*which of two*" that prefaces options, or using space to structure two options on a left-to-right axis (Zeshan 2004). In PISL, we don't observe use of a specific sign, or spatial modifications when using alternative questions in conversation and instead, signers use a prosodic pause between the options. From our data, it seems that interlocutors identify this this pause as the end of the utterance (a transition relevant place, see Sacks et al. 1974) and begin to produce solutions that then overlap with the second option. In this way, the interlocutor responds to the first option as if it were a candidate understanding to be confirmed or disconfirmed, and does not wait to see the two options to choose between (see Extract 4-5). As a result, alternative questions do not seem to be an effective means to initiate repair in PISL.

In general, these observations about overlapping in PISL are not surprising, as overlap between repair initiation and solution have been observed in both spoken and sign languages. For example, visible elements of repair initiation, including co-speech gestures and signs, are held and often released once a solution is forthcoming (Floyd et al 2016) data in Extract 4-1, Extract 4-2, Extract 4-6 and Extract 4-11. In sign languages, we also see overlapping of repair initiation with solution that do not involve holds but instead involve simultaneous active signing. Overlap in signed languages in possible because it is easy to perceive and produce language at the same time (C. Baker 1977; Coates & Sutton-Spence 2001), and studies of turn-taking in sign languages show that

signers frequently overlap to provide answers to questions (Lackner 2009; Girard-Groeber 2015). Studies of OIR in sign language have also showcased overlap. For example, Skedsmo (2020b: 12 Extract 4) presents an example from Norwegian Sign Language in which one signer produces a fingerspelled candidate as a repair initiation (T0) and the other signer repeats the fingerspelling to affirm it (T+1), overlapping with the original repair initiation. In an investigation of cross-signing, Byun and colleagues (2018) describe *fast track repair sequences* in which solutions overlap with repair initiations, speeding up repair sequences.

Our observations highlight the need for more research into the overlaps between repair initiations and solutions. Here, like in the study of holds, cross-linguistic research incorporating both sign and spoken language is critical as it may provide new insights. For example, in multimodal spoken communication, non-manuals such as head movements (Kendrick 2015) and blinks (Levinson 2015) have also been demonstrated to be used in repair solutions: these are articulations that can easily overlap with speech without interference. There is great potential to explore similarities in form and timing of similar articulations across languages and modalities.

6.1.2 Eye gaze affects timing, rate and distribution of repair

Joint visual attention can also affect rate and rhythm of repair in conversation. Signers can only initiate repair when joint gaze is established, however, our data contains many stretches in which the active signer breaks eye contact during signing, and as a result the trouble source is uttered by a signer who is looking away. Interlocutors must then wait until eye gaze is re-established before initiating repair. This often leaves signers no choice but to wait and initiate repair once joint eye gaze is re-established.

Not all breaks in eye gaze cause much disruption. Gaze is multifunctional in signed communication, and in addition to its discourse regulating functions (e.g., C. Baker 1977), it plays a part in lexical formation (e.g., Sutton-Spence & Woll 1999), referential shift/constructed action (e.g., Pyers & Senghas 2007) and indexing (e.g., Garcia & Sallandre 2020), among other processes. In our PISL data, we see instances where signers use eye gaze to complement directional verbs (see Extract 4-6) or to reinforce a pointing sign (see Extract 4-9, Extract 4-12). These short interruptions of mutual gaze can create a slight delay between producing the trouble and when the trouble can be repaired (as seen in Extract 4-6).

However, in other cases, breaks in eye gaze may last longer, and gaze may only be re-established a long time after the initial trouble source. Breaks in eye contact are a common feature of a technique called *constructed action*, in which they embody and demonstrate the thoughts, feelings or actions of a referent (Cormier et al. 2015), which is commonly used in storytelling. In our data, we find constructed action sequences in which signers break eye contact are very common. While it is not clear whether this leads to more or less repair initiation overall, we believe it does lead to different patterns. For example, in several cases, when signers initiate repair after a stretch of storytelling, they appear to make use of longer sequences incorporating multiple repair initiations (see Extract 4-10, Extract 4-13, Extract 4-14). These interactions seem to follow a general pattern. First, the interlocutor waits for a long story to be finished, then the floor is ceded, then interlocutor requests confirmation.

We also see strong individual variation among signers in how they use storytelling, constructed action and breaks in eye gaze. Two signers in particular, both women over 50, made frequent use of long stories in which they break eye gaze. These signers both

also appeared to consciously use eye gaze to retain the floor while storytelling. In several instances, their interlocutors attempted to interrupt long turns presumably to request clarification but these signers refused to cede the floor, until their storytelling was finished. These signers also often adopted a more monologuing style in conversation, with little turn-by-turn talk.

In summary, we found mutual eye gaze to affect when repair could be performed, and also to influence the sequences of repair initiations that were used. What governs eye gaze patterns in complex: the type of interaction can play a part (turn-by-turn talk versus storytelling), but also there is lots of individual variation, particularly to how signers use techniques such as constructed action.

6.1.3 Eye gaze affects type of repair

We see a clear pattern that open repairs are less frequent than restricted ones, this can be explained in part by eye gaze. One explanation comes from examining eye gaze to the active speaker. Open repairs are often used in problems of perception. In signed conversation, not seeing something is a frequent trouble source for open repair, and signers may initiate repair when they miss a part of the previous utterance (Manrique 2016). This is often caused by breaks in eye gaze to the active signer and these breaks are more likely in situations where switching gaze is necessary, for example in the context of multitasking e.g., eating and signing, or in multiparty interactions where eye gaze must switch between multiple interlocutors. Our data minimises gaze switching: signers conduct conversations in relatively 'quiet' places with limited distractions, without other parallel activities and in a dyadic setting that doesn't involve managing multiple interlocutors. This results in relatively few breaks in eye contact to the active signer that

would require an open repair initiation to resolve. Supporting this is the fact that in other sign language repair studies with data from multiparty interactions, the rate of open repair initiation seems to be higher than in our PISL data (Manrique 2016; Skedsmo 2020b).

Nevertheless, despite few visual interruptions, there are many instances in our data where the active signer averts eye gaze, and this may also affect relative distribution of open versus restricted strategies. We see in our data that open repairs work well when joint eye gaze is established: repair initiations are temporally link to trouble source and trouble is quickly resolved. However, when breaks in eye gaze from CA, then re-establish later on, in order to target embedded trouble, the signer must use more specific means for repair initiation. This may lead to the hight rate of restricted strategies, particularly in the conversations with lots of constructed action and storytelling.

Looking further at the breakdown of sub-categories, we see that candidate understandings are by far the most common. This may also be explained in part by eye gaze, as candidates are well-suited to target far-away trouble (Dingemanse et al. 2014). In many instances where there is little opportunity to interrupt a story to ask for clarification, candidate offers give the signer initiating repair the opportunity to recount the story and focus on problem areas to establish clarification. This strategy might be particularly suited to specific individuals' signing style, as many stories incorporate long sequences of constructed action in which the active signer breaks eye contact with their interlocutor.

6.1.4 The contribution of eye gaze in repair

While these concerns of eye gaze are amplified in signed languages, it is possible that joint visual attention also influences repair initiation type, rate and timing in spoken

languages. Eye gaze is an important component of social interaction, and particularly in question-answer sequences, it appears to play a key role. In spoken conversations, questioners tend to make sustained eye contact while asking a question (Rossano, Brown & Levinson 2009; Rossano 2012). The resulting joint visual attention has been found to correlate with faster response times in question-answer sequences (Stivers et al. 2009). Furthermore, Rosanno et al (2009) find that questions that go unanswered in conversation are most often those produced without joint eye gaze, in cases when the recipient is not visually attending to the speaker. Taken together, these suggest that even in cases where visual attention is not critical to perceiving language, eye gaze can affect repair.

Embodiment techniques are also used in multimodal spoken communication and eye gaze is commonly used in these sequences as well to mark referential shift (Sidnell 2006; Stec, Huiskes & Redeker 2016). Further research remains to examine whether joint eye gaze correlates with rate and type of repair initiation and to more closely examine overlaps between parts of the repair sequence.

6.2 Context underlies the design of OIR strategies

PISL signers draw on resources that are common to the cultural and communicative context to perform OIR. They use semiotic techniques that incorporate formal conventions with shared knowledge, for example pointing to in the direction of someone's house to resolve person reference. They also use their knowledge of local sign variants to specifically target trouble and incorporate mouthing from both Spanish and Creole/English (Extract 4-6, Extract 4-11). These practices demonstrate that signers are sensitive to the needs of their interlocutors when selecting and designing repair initiations.

These sensitivities also may help contextualise patterns we observe within repair sequences.

We also know that in formulating repair initiation, people are sensitive to minimising work on the part of the interlocutor, and as a result tend to provide the most informative repair initiation as possible. In our data, we find that highly specific restricted offers are the overwhelming majority of repair initiations, and this may be related to the high degree of shared context among signers.

Take for example, the most common type of repair initiation used by signers, candidate understandings. These demonstrate both high understanding, and high specificity on the part of the repairer, and simply require a confirmation or disconfirmation. Less frequent in our data is the use of restricted requests in the form of content wh-questions (e.g., *who*) and trouble presenting repeats (see Extract 4-6), which require more complex descriptive solutions. This is particularly observable in the context of resolving person reference, place reference, thing reference. For example, instead of targeting a troublesome person reference by signing "who", a more common strategy in the data was to use the suspected knowledge about the referent and offer a description or a point to the referent's house as a suggestion to be confirmed.

This kind of pointing in particular might also relate to the infrequent use of content wh-questions in general. In fact, person and place reference are two of the most frequent trouble sources that content wh-questions are used for in many spoken languages. In fact, this explanation may also account for a general low use of wh-questions found in other sign languages (Manrique 2016; Skedsmo 2020b), as pointing (both to real world and signing space locations) is common for managing reference.

This shared context might also feed into the high frequency of multiple repair sequences in the data. Particularly to resolve complex reference, combining many candidate understandings that build upon one another could be a good way of starting broad and then narrowing down. In one case, to resolve a tricky place reference, the signer initiating repair began by asking if it is in the neighbouring island, then presented several consecutive candidate understandings that build up to the relevant place, including where it is in relation to various landmarks, with the interlocutor confirming at each stage the candidate understandings.

In this vein, we can compare the high incidence of candidates in our data, at 55%, with the low incidence in *cross-signing*, the ad-hoc communication used among deaf individuals who meet for the first time with no shared language (Bradford, Sagara & Zeshan 2013). Byun and colleagues (2018) find that in cross-signing sequences, the use of candidate understandings is low, at 12%. On the other hand, examining conversation among work colleagues with presumably high shared context, Skedsmo (2020b) finds that candidates account for 56% of all repair initiations. Therefore, having shared language background might make offering candidates more useful, and more likely to be successful in resolving repair.

6.3 Repair in PISL frequently accomplishes additional social actions

PISL signers are highly attentive to the role of backchanneling, feedback and establishing/demonstrating active listening. This can be observed in the number of restricted offers used, both repetition and candidate understandings. In these and other cases, repair initiations are often doing more than just repair. We also see some instances where the active signer pauses awaiting these confirmation checks (see Extract 4-1).

These instances appear to be related in form to the freeze looks described by Manrique and Enfield (2015) used to initiate repair, but are used instead to elicit repair in the form of confirmation checks. This suggests that in PISL, a conversation partner who initiates repair may be demonstrating good 'listenership'.

It is clear that sometimes understanding checks are important to correct misunderstanding (see Extract 4-13). But in many cases, signers seem to unambiguously understand the utterance of their interlocutor, but still initiate repair (Extract 4-12, Extract 4-14). This may be because repair initiations are performing other important social actions, in establishing intersubjectivity between conversational participants, for example performing surprise (Extract 4-7, Extract 4-11), or registering receipt (Extract 4-8, Extract 4-10, Extract 4-14).

Specifically looking at candidate understandings, the fact that this was the dominant subtype may be because candidates are used for not just initiating repair, but performing other social actions. Many candidates were accompanied by non-manuals that suggested understanding and confirmation such as nodding and smiling. These cases of repair initiation also appeared to perform multiple social actions such as registering receipt alongside a confirmation check (see Extract 4-12, Extract 4-13, Extract 4-14). It seems that this confirmation of understanding and receipt of information is quite important to PISL conversation, given the high rate of these understanding checks in our data. Thus, in PISL, candidate understandings may precisely emphasise the shared knowledge and are used largely as a feedbacking/backchanneling device.

6.4 Summary

In summary, we find that PISL signers coordinate various semiotic resources to produce repair initiations that efficiently and informatively flag trouble and recruit clarification. These repair initiations also often perform another important part of PISL conversation, namely providing conversational feedback through understanding checks. Finally, we find that repair initiation is heavily modulated by eye gaze. Having joint visual attention among conversation participants is a pre-requisite for initiating repair, and affects rate and type of repair initiation. In particular, averted eye gaze at the trouble source may contribute to the high rate of candidate understandings found in our data.

7 Conclusion

This study examined other-initiated repair among deaf signers of PISL, a micro-community sign language. Despite earlier claims that repair is absent from conversation in this language (Washabaugh 1986: 119), we found OIR to be a commonly used mechanism, in which signers draw on common semiotic resources, cultural conventions and social knowledge to address breakdowns in mutual understanding.

Eye gaze has been shown to be central to communicative success in both signed and spoken interaction and our study further emphasizes the importance of joint eye gaze in repair initiation. We find that (i) eye gaze affects the rate and type of repair initiation PISL signers use and (ii) joint eye gaze allows for relatively smooth overlap between turns. The importance of eye gaze in these domains may also be relevant in multimodal spoken communication, and cross-linguistic cross-modal studies may be critical to further explore the role and mechanisms of eye gaze in other-initiated repair.

Examining the relative frequency of repair categories in PISL has suggested strong community-specific preferences. First, PISL signers tend to often use repair strategies

that imply high understanding and convey high specificity, and simultaneously accomplish other social actions such as checking in. Second, they tend to use many multiple repair sequences to target the same trouble source. To disentangle whether these patterns can be attributed to cultural practices, or linguistic structure, future work is necessary to compare PISL to other sign languages with similar structures (e.g., small wh-paradigms) and similar cultural context (e.g. other Caribbean communities).

Finally, it is worth acknowledging that the results of this study provide evidence that repair in PISL is in many ways aligned with repair in other signed and spoken languages, supporting the idea that despite vast differences in linguistic structure, languages of the world broadly align in their interactional features (Dingemanse & Floyd 2014).

Chapter Five

Discussion and Conclusion

1 Introduction

This dissertation represents a unique contribution to the literature in that it provides an updated description of a micro-community sign language, that is based primarily on insights from conversational data and revisits and re-evaluates old claims. In this final chapter, I discuss the main findings of this work, the major contributions to the literature and directions for future work. I begin by providing an overview of each sub-project of the dissertation. Following this, I outline the main contributions of this dissertation and present ideas for future research that builds on the work in this project. Finally, I offer some concluding thoughts and take-home messages.

2 Summary of chapters

This dissertation sought to describe aspects of PISL through the lens of conversation, and in doing so, test existing claims made by Washabaugh about how deaf signers in this community use language. To achieve this, I collected and annotated primary data from PISL signers (Chapter Two) and performed two empirical studies on two aspects of discourse phenomena in PISL: person reference (Chapter Three) and other-initiated repair (Chapter Four).

Chapter Two provides a meta-documentation of the PISL documentation project. Documentation methods in general and sampling in particular are often not discussed in detail in the broader literature, particularly with respect to small non-institutionalised signing communities. To address this literature gap, in this chapter I provide a reflection on the creation of a corpus of PISL signing. I elaborate on the variety of signers and data types included in the corpus, discussing in detail the composition of the small sign language community and the success and challenges in collecting data from different

PISL signers. Firstly, in Providence, like in many small communities, there are very few deaf signers, each with relatively heterogeneous backgrounds. Collecting data from deaf informants was a delicate balancing act: with such a limited pool of participants, it required managing individual variation in terms of language use, availability and interest in the research project, as well as interpersonal relationships among informants. Second, in Providence like in other small signing language communities, hearing people make up a core part of sign language users. Including them in documentation efforts is therefore important to represent the demographic realities of this language community. At the same time, their status as bimodal bilinguals introduced many challenges with respect to recruiting and filming in monolingual signing mode. Finally, I discuss the successes and challenges of documenting PISL with respect to the composition of the research team involved in the project; I, a hearing Trinidadian, worked alongside a deaf Trinidadian colleague as well as a deaf Providencian colleague. This mix of deaf and hearing and local and foreign members afforded us access into different aspects of community life and language use. Given the general lack of detailed information about documentation practices in small signing communities, the case study presented in Chapter Two represents an important and rare contribution to the field of sign language documentation: this meta-documentation helps to increase transparency and provides context for the data used in linguistic research, and also provides concrete points of reference for future documentation projects of micro-community sign languages.

Chapter Three investigated how signers of PISL refer to non-present persons with a focus on initial reference, that is, the introduction of new referents into the discourse. Previously, Washabaugh has described practices of person reference in PISL as confusing, particularly because deaf signers were reported not to use name signs

(Washabaugh 1980b; 1986: 73). In this study, I revisited this claim by investigating how signers perform initial reference in conversation. Examining 1 hour and 27 minutes of dyadic conversational data from five conversations among six deaf signers, I identified and analysed 92 instances in which signers introduce a new person referent into the discourse. I found that signers' referring strategies fall into several categories: conventional signs, mouthings (in Spanish and Creole), pointing, embodiment and no explicit reference. The range of strategies is not unlike what has been found in other sign languages (e.g., Hodge, Ferrara, et al. 2019): signers balance conventionalised semiotics with more improvised strategies. Furthermore, some PISL signers also employed referring strategies that are less common in the broader literature, such as the use of unframed constructed action and stand-alone mouthings. PISL signers also combined these strategies, drawing on principles of recipient design to tailor referring expressions to the interlocutor. This study showcases the broad semiotic repertoire available to PISL signers and highlights the way signers rely on shared context to streamline communication in everyday conversation.

Chapter Four provides a first description of how PISL signers perform other-initiated repair in conversation. Washabaugh's description of deaf PISL signing as almost devoid of conversational repair (1986: 119) stands stark in contrast to recent cross-linguistic research, which suggests that repair is highly common in both signed and spoken languages (Dingemanse et al. 2015). To explore this discrepancy, this study investigated whether deaf PISL signers initiate repair in conversation, and if so, which strategies they use. Looking across 1 hour and 2 minutes of data from five dyadic conversation among six deaf PISL signers, I identified and coded 224 instances of other-initiated repair. The resulting quantitative and qualitative analysis revealed three main

findings. First, PISL signers use other-initiated repair robustly in conversation, and do so with a high frequency. Second, like in other signed and spoken languages, PISL signers use a range of strategies that include non-manual and manual elements and that vary in how they specifically they target the trouble source. Finally, like Washabaugh (1986: 113), I observe that some signers show a tendency to avert eye gaze while singing which may be related to the interlocutor using both less repair initiation during gaze aversion and higher proportions of more specific strategies to target trouble once gaze is re-established. This chapter provides one of the few descriptions of other-initiated repair in a sign language, and the first in a micro-community sign language. As a result, it makes an important contribution of diversity to the growing field of pragmatic typology and communicative interaction. The findings demonstrate both points of similarity with other signed and spoken languages when it comes to frequency and category of repair, as well as points of differences with other signed and spoken languages such as relative frequency of sub-categories and means of repair initiation.

3 Contributions of this dissertation

This work in this PhD project draws on a newly collected corpus of PISL, that comprises various data types collected from deaf and hearing signers (Omardeen 2019). Using data from this corpus, the empirical studies provide a descriptive account of different aspects of conversational interaction among deaf PISL signers, complementing previous research on PISL with descriptions of language in interaction. This dissertation makes the following four main contributions:

(i) This dissertation is one of the few descriptions of conversational pragmatics in a small sign language.

(ii) Adopting a descriptive perspective, this dissertation shows that the way people use their sign language in Providence is not so different from the way people use signed and spoken language in other communities.

(iii) Revisiting claims about PISL shows the importance of re-evaluating one-off claims about languages as this may yield different results in the present.

(iv) This dissertation emphasizes the key role of context and meta-documentation in (small) sign language research.

In the following sections, I discuss each of these contributions in detail.

3.1 Describing language based on conversational data

Research on small sign languages has so far had a strong typological focus. This has resulted in an increased understanding of how sign language structure can vary cross-linguistically, but a relatively poor picture of how languages are used in context in these communities to achieve a felicitous communication. Small sign languages are often studied using elicitation tasks that target specific linguistic domains such as argument structure (e.g. Ergin et al. 2018), phonology (e.g. Sandler, Aronoff, et al. 2011) and the lexicon (e.g. Mudd, Lutzenberger, de Vos, et al. 2020). While there is a growing interest in using signed conversational interaction as a starting point for linguistic observation (e.g. Dively 1998; Mesch 2016; Ferrara 2020), this approach has not yet been widely extended to small sign languages (see, however Safar 2019; Haviland 2020). This dissertation thus addresses a major gap in the literature by contributing description of features of a small sign language based primarily on conversational data. The studies in this dissertation blend qualitative and quantitative descriptions of conversation, providing insights into

both (i) the rich diversity of strategies used across deaf signers and (ii) the distribution and frequency of these strategies.

First, by using conversational data, the studies in this dissertation give a qualitatively broad impression of the various strategies that deaf PISL signers use to perform complex communicative tasks. While Washabaugh (1986) claims that signers do not use name signs to perform person reference or repair strategies to address misunderstanding, he offers very little explanation of what signers do instead. The studies in this dissertation seek not just to challenge the validity of Washabaugh's claims, but also to provide additional information about what signers actually do to tackle universal communication challenges. In Chapter Three, I have shown that PISL signers use a wide range of diverse semiotic strategies to refer to people in discourse; these include names signs, thus contradicting Washabaugh's original claim. In Chapter Four, I have shown that signers employ a diverse array of repair strategies to address communicative trouble. The strategies that we observe in PISL conversation can vary both in specificity and conventionalisation. Some are highly conventionalised in that they rely on previous shared conventions to derive meaning (e.g. specific signs and mouthings) while others are less conventionalised (e.g. pointing and constructed action). Some strategies are highly specific, in that they narrow down a specific referent (e.g. name signs) or trouble source (e.g. candidate understandings) while others are much less specific and require interlocutors to do more work to interpret the referent (e.g. unframed constructed action) or trouble (e.g. non-manual repair). Above all the analysis of situated language in this dissertation reveals that deaf PISL signers use extraordinarily diverse communicative strategies.

Second, by examining a corpus of conversational data, the studies in this dissertation provide insight into the distribution and relative frequency of specific structures. Take the example of names: as discussed in Chapter Three, Washabaugh claimed that signed names are never used in Providence (1986: 73). In fact, I do find name signs in the data, but I find that they are used relatively less frequently than other referring strategies. Thus, the analysis of conversational data has provided insight into the distribution and frequency of name signs in PISL discourse adding intricacy to Washabaugh's initial observations. In addition to names, an understanding of frequency can also help contextualise the use of strategies such as unframed constructed action in initial reference (Chapter Three) or formulaic strategies in other-initiated repair (Chapter Four), that have been described as rare or unattested in other sign languages. Providing quantitative insights demonstrates that, while attested, these strategies are infrequent and their use may be tied to individual signers or particular linguistic/communicative contexts.

In sum, this dissertation has highlighted the value of using conversational data for language documentation and description because it provides a context-rich perspective and gives insight into qualitative and quantitative patterns of language use and communicative interaction. Conversational data can enrich and complement perspectives from other methods like task-based elicitations (Safar 2020; Hodge & Goico 2022). In the case of PISL, examining conversation in this dissertation has allowed for contextualisation of many of the strategies noted by Washabaugh through his elicitation paradigms or participant observation. By looking at a situated communicative process, we can investigate how these strategies fit together in the same system, and in doing so,

observe underlying shared preferences for specific strategies or combinations (Sacks & Schegloff 2007).

3.2 Demonstrating cross-linguistic similarities

Since early on, micro-community sign languages have been studied from a comparative perspective: many studies are framed around highlighting how different they are from other often larger scale languages (e.g. Sandler, Aronoff, et al. 2011; Stamp & Sandler 2021). This is also true for PISL. Early work focused primarily on stressing the differences with respect to American Sign Language (Washabaugh 1986), since it was the most studied sign language at the time. Nevertheless, this dissertation shows that the way deaf people use PISL in Providence is in many ways similar to the way other people use language in other places. The work in this dissertation was aimed at providing a descriptive account of PISL through examining general interactional challenges, rather than a search for the presence of absence of specific structural features found in other languages. However, when contextualising the findings within the broader literature, we see that most of the strategies and features observed in PISL have also been described in other languages, both spoken and signed. The evidence for this can be observed through two separate angles: the way signers make meaning (semiotic perspective) and the way signers manage conversation (interactional perspective).

Turning to the semiotic perspective first, I have shown that the strategies used among deaf PISL signers are similar to those used among signers of other (macro-community sign) languages. First, looking broadly across the range of referring strategies in Chapter Three, results are directly comparable to how signers of Auslan, a macro-community sign language of Australia, perform referring acts (Hodge, Ferrara, et al.

2019). This cross-linguistic similarity may suggest universality in how strategies signers of different sign languages establish reference. Second, individual strategies are similar to what we see in other macro-community sign languages, suggesting even stronger cross-linguistic similarities. For example, PISL signers' use of embodiment is similar to what Ferrara and Halvorsen (2017) describe for signers of Norwegian Sign Language; the discourse linking function of finger points used in PISL are highly similar to what is described by Steinbach and Onea (2016) for German Sign Language. Similarities are not just noted with signed languages; spoken languages have been observed to use many of the reference strategies that were found in Chapter Three. For example, descriptions of Bequia Creole (Sidnell 2005; 2007b), Kreol Seselwa (Brück 2015) and Yélî Dnye (Levinson 2007) demonstrate similar specific strategies, such as frequent real world pointing, prominence of kin triangulation, and nicknames based on physical attributes. These findings suggest robust cross-linguistic and cross-cultural strategies fundamental to human communication, in stark contrast to PISL being typologically unique, as Washabaugh suggests.

Second, this dissertation also shows that the interactional strategies that deaf PISL signers use are also highly aligned with those used in other language communities. Specifically, Chapter Four demonstrates great overlap between the PISL data and data described for other signed and spoken languages in conversational repair strategies. The data in Chapter Four includes the same categories as described in cross-language cross-modality studies of repair (Dingemanse et al. 2015) and found in individual studies of repair in signed languages (Manrique 2016; Skedsmo 2020b). Aside from repair categories, other interactional aspects of PISL are commonly found in other languages. For example, when initiating repair or providing solutions, PISL signers frequently overlap

with one another's turn. While Washabaugh frames this as striking, studies of signed interaction have discussed this kind of overlapping signing as a commonly acknowledged modality effect (see, for example American Sign Language: Dively 1998; Austrian Sign Language: Lackner 2009; Swiss German Sign Language: Girard-Groeber 2015), due to the fact that signers are able to produce and perceive signing without perceptual interference (a notable difference from spoken conversation, in which overlap may interfere with intelligibility). Furthermore, particularly with respect to repair initiation, overlap in the form of manual holds and backchanneling have been shown to be common across a sample of several spoken languages and one signed language (e.g. Floyd et al. 2016).

These contributions are important because they show that, despite the early characterisations of PISL as being highly unique, in fact the way PISL is used is very similar to other signed and spoken languages in many respects. Nevertheless, this characterisation of micro-community sign languages is not just a thing of the past. It has endured well into today's research, where many micro-community sign languages are still framed as very different from macro-community sign languages, creating an impression that they are exotic. The findings of this dissertation can help to dismantle these ideas with data and description. For one thing, the similarity in semiotic strategies shows that PISL signers draw on many of the same resources as other language users, deaf and hearing, from small and big language communities. Furthermore, the similarities found in interactional strategies provide support for the idea of pragmatic universals in communication (Dingemanse & Floyd 2014). These similarities across languages and modalities are not a surprise: recent cross-linguistic studies have found across several

domains, including turn taking and repair, that languages share similar basic conversational conventions, with local cultural variations (Floyd 2021).

To sum up, the results of this dissertation have revealed similarities between PISL conversation and conversation in other signed and spoken languages, both in terms of the semiotic resources and in terms of discourse management strategies. This suggests that the way micro-community sign languages have been characterised with respect to macro-community sign languages in the literature may exaggerate differences, and highlights the need for more descriptions based on language use in naturalistic settings. Indeed, if the work in this dissertation is any indication, future research in this vein may reveal more universality than uniqueness in how language is used in small signing communities when compared to other signed and spoken contexts.

3.3 Re-evaluating old claims in context

Claims about PISL have been continually cited as researchers become more and more interested in small sign languages. Throughout this dissertation, I re-evaluated old claims about PISL with new data, finding that these claims are largely not borne out. I argue that this highlights the importance of contextualising research claims and situating them with respect to the times, methods, theories and frameworks that generate them. As discussed in previous sections, one reason why old claims may not hold true when examined anew may be the use of different data genres. In the following section, I discuss other reasons why old claims might not be corroborated in the current research. I highlight two reasons that are particularly relevant in the case of PISL: (i) differences in methods and technology, and (ii) differences in the research climate of the time and research environment.

Old claims are situated in old methods and technology. In the past few decades, sign language research has benefitted tremendously from technological advances: first, from increasingly cheap, portable and high-quality options for video recording and storage and second, from free analytical software, such as ELAN (*ELAN [Computer software]* 2020) that allows for time-aligned annotation of video data (Palfreyman 2020). These new technologies have transformed the way sign language research is done. For example, today it is a growing standard to represent signs with accompanying pictures or linked videos instead of only glosses (Hochgesang 2019), and particularly to perform frame-by-frame analyses of signing based on video data. The studies in this dissertation examine primary video data of conversation among deaf signers, using time-aligned annotations for manual and non-manual behaviours and represent conversation through photos and links to primary video sources. The coding and analyses used are informed by cross-linguistic studies that include signed and spoken languages (Dingemanse et al. 2016) as well as language-specific studies of signed repair (Manrique 2016; Girard-Groeber 2020; Skedsmo 2020).

These technological advances have allowed me to incorporate new dimensions into my analyses that were likely difficult in previous research. One such affordance is the opportunity to study the role of non-manual features in repair initiation. Despite Washabaugh's expressed interest in documenting non-manual lexical features of PISL (1986: 70), these features are largely underrepresented in his descriptions of conversation. He presents analyses of PISL based on sign-by-sign glossed conversation, a relatively crude representation of primarily the hands (Supalla 1988), and concludes that there is little use of repair among PISL signers. However, recent studies of repair across modalities, take into account a broad spectrum of visible communicative

behaviours, including representing use of the face and body (Dingemanse et al. 2016). In recent times, there has been a marked increase in attention to the role of non-manual articulators and their role in signed communication (Puupponen 2019). Research on sign language repair specifically has highlighted the crucial role of minimal articulations of non-manual features in repair initiation (Dively 1998; Manrique 2016; Skedsmo 2020b). Chapter Four examines repair strategies by making annotations linked to primary video data, and in line with recent research, the findings demonstrate that non-manual markers are critical to initiating repair in PISL: many repair initiations include non-manual marking and some repair initiation is performed solely non-manually. Clearly, the opportunity to examine these features has allowed us to describe repair in a more holistic and accurate way.[15]

In addition, old claims need to be contextualised in the spirit of the time and research environment they were made. PISL was investigated in the 1970s and 80s, at a time when sign language linguistics, which began in the 1960s, was in its infancy. This is reflected in how PISL is described and characterised in the literature. One example is Washabaugh's description of PISL signers naming expressions as uniquely context-dependent and ambiguous (Washabaugh 1980b). Since these claims have been made, there has been considerable amount of work that has found very similar strategies and techniques in naming across a wide range of sign languages (e.g., New Zealand Sign Language: McKee & McKee 2000; British Sign Language: Day & Sutton-Spence 2010; Finnish Sign Language: Paales 2010; Japanese Sign Language: Nonaka, Mesh & Sagara

[15] Indeed, adopting a more fine-grained analysis that incorporates non-manuals may also challenge other claims about PISL made by Washabaugh, for example those concerning syntactic variation among deaf signers (Washabaugh 1979b).

2015; Swedish Sign Language: Börstell 2017; Kata Kolok: Lutzenberger 2018). For example, we know now that name signs are used primarily non-vocatively for third person reference (e.g. Paales 2010), draw on salient characteristics of individuals (e.g. Börstell 2017), and individuals may be referred to by several name signs (e.g. McKee & McKee 2000). The growing body of literature on different sign languages gives considerably more context to Washabaugh's early descriptions of PISL, allowing us to situate these claims next to what we know about practices used in signing communities around the world. In the case of naming, PISL no longer appears unique: it is simply that since the 1970s, our collective understanding of what *naming* is in sign languages has changed and we now can recognise the cross-linguistic similarities in this domain. Nevertheless, despite the considerable advancements in sign language linguistics, old claims are still cited without reflection and contextualisation in modern literature. As a result, we still find direct quotes of Washabaugh's initial strong claims, for example Meir and colleagues (2010: 12) write, of PISL, that "Interestingly, there are (…) no name signs". This practice of presenting claims about PISL (and indeed other languages) that are frozen in time is not only misleading, but also dangerously tempting to shape misconceptions about typological uniqueness of lesser studied sign languages.

Critiques of old claims, rooted in insufficient representations of data, as presenting misleading ideas are not unique to PISL or even signed languages. They can be observed in many less studied languages. For example, Reisman (1974) characterises conversation in the Caribbean island of Antigua as "anarchic". He claims that instead of speakers conforming to the presumably universal principle that conversation unfolds one turn at a time (Sacks et al. 1974), there is tremendous overlap between speakers turns in conversation. In more recent work, Sidnell (2001; 2007a) critiques this

characterisation, based on Reisman's lack of well-presented data. Sidnell puts forth his own data from research in Caribbean communities which suggests that Caribbean people in fact do orient to the principle of one turn at a time in conversation. He contextualises Reisman's observations of overlap in modern understandings of turn-taking: today, we know that even when orienting to one-at-a-time turns, overlap is frequent and predictable in certain junctures of conversation (e.g. Drew 2009), and these observations hold true for Caribbean conversations. Not only does Sidnell (2001: 1285) conclude that Resiman's characterisation of Caribbean language use as "anarchic" clearly "cannot be sustained in the face of serious empirical investigation", he also brings up another fundamental criticism, one that is highly relevant to the case of PISL: to understand characterisations of Caribbean language as disorderly and chaotic, it is important to consider the epistemological orientation of researchers and research fields, as these claims may be rooted in deeply entrenched histories of oppression.

These observations highlight just how important it is to contextualise old claims in the time and frameworks that generate them. Acknowledging these mismatches between past and present is important, especially if researchers are interested in comparing older sources to current data and use old claims as support in modern theoretical debates. Particularly when it comes to older work that describes small sign languages, it is important to acknowledge and engage with the many prejudices (such as ableism, racism, colonialism) that may underly claims about language use in these communities.

3.4 Contextualising research through meta-documentation

Just as contextualising old claims is important, so too is contextualising today's research, and this dissertation emphasizes the need for sufficient context and meta documentation.

It is important to acknowledge that while today Washabaugh's research appears methodologically and theoretically old-fashioned, one day the work in this dissertation will be equally outdated. There are many things we are yet to discover about how best to do linguistic research in (small) sign language communities and it is inevitable that methods and technologies involved in this research will rapidly advance. In this sense, rich descriptions can be highly useful to those who come after us to contextualise the current work appropriately.

While not explicitly framed as such, Washabaugh himself provides an excellent early example of this context and meta-documentation. Washabaugh's strong claims are situated against the backdrop of rich sociolinguistic description of the community, language use and practice, which help the modern reader understand his claims for what they might mean today. For example, despite insisting that PISL signers have no name signs, Washabaugh (1986: 69–73) describes with robust clarity the *naming expressions* used in the community, that closely algin with what naming practices seen today. Similarly, despite claiming that conversational repair is absent from conversation, Washabaugh details several examples that clearly resemble what is referred to as repair in today's literature, including the use of repetition and question words (Washabaugh 1986: 120–122). These observations been enormously valuable, as they have provided me with a starting point for investigation and re-contextualising claims within today's literature and understanding.

One perspective of meta-documentation that is not present in Washabaugh's work but has gained more attention in recent times is reflection on identity and positionality with respect to research. Deaf researchers in this field have led the way in the published literature, providing excellent examples of reflections on what it means to do be a deaf

researcher working in small sign language communities (see, for example Dikyuva 2012; Kusters 2012b; Hou 2017). Having more of these publications that explicitly acknowledge aspects of researcher identity will help to dismantle the idea that all researchers have the same background (e.g., hearing, white, from the Global North). But more than that it will give much needed context to how researcher identity affects research from both from a methodological and an ideological standpoint.

Thus, meta-documentation is useful in many ways. Not only does it (i) contextualise the data with respect to how, and by whom it is collected, but it also (ii) provides a starting point for researchers who come afterwards to refer to, build upon and adapt with when entering other signing communities. The work in this dissertation strives to detail clear and transparent methodologies for working in a small sign language community.

With respect to researcher identity and data collection, the observations in Chapter Two can provide useful perspectives to outside researchers interested in documenting and researching micro-community sign languages, particularly with respect to collecting data from hearing signers and collecting data from small heterogeneous pools of deaf participants. In terms of ethical procedures in data collection, all the materials and videos of informed consent procedures are available in the archive alongside signing data. In the context of the empirical research in this dissertation, I strive for detailed methodological clarity, particularly in matters of translation and exclusion criteria in coding and categorisation. While these choices may one day (or even today) be deemed insufficient, or old-fashioned, clear descriptions of methodology are critical to push the field forward and to contextualise the findings of this work. Indeed, as more and more documentation projects of micro-community sign languages emerge within the

Caribbean (e.g. Benedicto, Martínez-Cora & Rivera-Castillo 2021; Ali 2022), and across the world, the importance of meta-documentation becomes an increasingly important way to share, learn and reflect on best practices.

4 Future Research

This dissertation has laid the groundwork for future research by exploring the diverse strategies used in repair and reference in PISL conversation. Two particularly interesting research avenues emerge from this work. First, this dissertation has highlighted that PISL signers use rich and varied ways to perform reference (Chapter 3), and that when faced with conversational trouble, there are a plethora of strategies to achieve mutual understanding (Chapter 4). To build on both of these insights, I propose a next step that looks explicitly at where reference and repair intersect in PISL conversation, as a way of better understanding how signers use repair sequences to deal with variation in reference forms across the community. Second, the work in this dissertation has shown that PISL conversational strategies are quite common to those described in small spoken language communities. To better understand how PISL semiotic and interactional strategies are grounded in their ecological niche, I suggest examining multimodal spoken comparison in Providence as a point of comparison to PISL. In the section that follows I discuss both research avenues in detail.

4.1 Examining grounding sequences: where reference meets repair

Reference in PISL presents a set of alternatives. This is clear from the results of Chapter Three when it comes to person reference, but is also described on a broader scale by Washabaugh, who notes variation in lexical forms used among signers. When referring to

specific people or places or things, PISL signers can use a range of semiotic strategies including pointing, mouthing, embodiment and conventionalised[16] sign variants. PISL signers often combine these strategies, as demonstrated in Chapter Three. Notably, the use of different strategies is not random; it is governed by sociolinguistic factors, for example, signers from specific villages for example using specific signs (Washabaugh 1986: 51).

Use of these strategies may not always result in smooth understanding in conversation. In examining repair sequences in Chapter Four, we find several instances where specific referring acts constitute conversational trouble. In these instances, signers can repair using a variety of strategies: they can repeat the reference either as a way of confirming understanding or requesting clarification, they can repair with a different label, or they can joining their own label next to the reference (a strategy known as *chaining*: Humphries & Macdougall 2000; Tapio 2019), as a way of confirming their understanding. By using these different strategies, signers are able to explicitly establish that they are referring to the same concept.

Examining these sequences in which reference is explicitly negotiated, also called *grounding sequences* (Clark & Brennan 1991), can help us understand the ways in which signers make sense of within language variation. To do so, I propose a study that identifies repair sequences where signers explicitly negotiate reference to a particular concept (person, place or thing), and analyses these sequences with respect to how interlocutors arrive at shared reference, with attention to the range and combination of strategies used.

[16] See the Methods section in Chapter Three for a working definition of conventional in the context of PISL.

Specifically, this analysis would examine how interlocutors align or do not align aspects of their signing to that of their interlocutor with respect to referential strategy.

Such a study can bring important perspectives to many current questions in linguistic research. In micro- and macro-community sign languages alike, researchers are interested in examining how signers handle lexical variation on different scales. There is an overarching idea that there is a pressure to reduce lexical variation over time and/or generations, a process that has been referred to as *conventionalisation* in small sign languages (Sandler, Aronoff, et al. 2011), or *levelling* in large sign languages (Stamp et al. 2014b). To understand the mechanisms of these longer-term processes, researchers have hypothesized about how lexical variation is negotiated in small scale interaction (de Vos 2011), and investigated this via experimental tasks (Stamp et al. 2016) and agent-based modelling (Richie, Yang & Coppola 2014; Mudd, Lutzenberger, Vos, et al. 2020). Nevertheless, no research has explicitly examined how these negotiations play out in conversation, a key step in understanding how small-scale interactions can inform longer term change. Furthermore, these topics also connect to broader work that examines such referential grounding in conversation, among for instance signers with no shared language (e.g. Byun, de Vos, et al. 2018), or among speakers of the same language in multimodal interaction (e.g. Holler & Wilkin 2011; Fusaroli et al. 2017).

4.2 Investigating the multimodal communicative ecology of Providence

Understanding the multimodal communicative context in which a sign language exists can be critical to contextualise aspects of signed communication. In the case of PISL, I

propose that future research can build from this dissertation by examining similar themes in multimodal spoken communication in Providence, to provide a comparative viewpoint.

We know that sign languages do not exist in a vacuum. All sign languages investigated so far are minority languages used in spoken majority communities. As a result, signers have a great deal of exposure to the visible signals around them, which are often also incorporated into the sign language. This has been demonstrated, for example, by the fact that signers (even those with limited literacy) use visible mouth movements of words from the surrounding spoken language (see Bisnath submitted), or by the fact that many signs resemble emblematic gestures used in the surrounding spoken language community (e.g. Le Guen 2012; Mesh & Hou 2018; Tano & Nyst 2018). Visible signals are not only involved in semiotic but also interactional functions in multimodal spoken communication. These have received less direct comparison within the same community, however a recent study by Lepuet and Shaw (2022) examines the use of palm-up and pointing in multimodal interaction between speakers and signers in the same cultures, finding similarities both between Belgian French and French Belgian Sign Language (LSFB) users, as well as between American English and in American Sign Language (ASL) users.

In this dissertation, I have drawn several comparisons with multimodal communication in various spoken communities of similar size and characteristics, including in the Caribbean (Sidnell 2005; 2007b) and outside the Caribbean (Brown 2007; Levinson 2007; Brück 2016), finding a great deal of overlapping strategies. However, we lack the data to make direct comparisons to the spoken community of Providence, alongside which PISL emerged and exists. While this type of comparisons of multimodal language-in-interaction between signers and speakers is still uncommon, it

can be facilitated by matched datasets of signers and speakers from the same community. An example of this is the multimodal corpus of Auslan and Australian English collected by Hodge and colleagues (2019) which brings together Australian participants from the same city, in the parallel recording settings (see also, for American English/ASL: Shaw 2019; for Belgian French/LSFB: Lepeut 2021). Despite being uncommon, these datasets are critically important because they can give us direct insight into similarities between signed and spoken interaction.

I therefore stress the value of collecting data of multimodal spoken conversation among hearing islanders in Providence and comparing it to the data used this dissertation using similar analytic frameworks. One ideal starting point for comparison would be replicating the studies of reference and repair with such multimodal spoken conversational data. With insights into communication in both modalities, one could then ask: to what extent do deaf and hearing people in the same community use the same semiotic and interactional strategies? This kind of research has broad implications. It can connect growing interest from sign linguists about the scope of influence the surrounding co-speech gestural environment has on sign languages (e.g. Le Guen 2012; Tano & Nyst 2018) with questions about how pragmatic universals manifest in language and culture specific ways (Dingemanse & Floyd 2014; Floyd 2021), and can help us better understand what scaffolds signed interaction between people without shared linguistic codes (e.g. Bradford et al. 2013; Zeshan 2015b; Byun, de Vos, et al. 2018). Looking at how semiotic and interactional strategies overlap in different languages within the same cultural environment can help tease apart features that may be truly language specific (or 'typologically unique') from features that are culture-specific.

5 Conclusion

This dissertation presents a description of how a micro-community sign language, PISL, is used in conversation by deaf signers. It traces the trajectory of collecting new data, describing interactional features of language, and empirically testing claims about how a language is used. Specifically, I examine how signers deal with core communication challenges, as a way of re-evaluating decades-old claims that suggest that semiotic and interactional aspects of PISL are radically different from other (sign) languages. I show that these claims are not corroborated by the conversational data collected and analysed in this project. Instead, the ways signers make meaning and manage interaction are broadly similar to other sign languages.

The findings in this dissertation bring attention to several critical considerations. First, the study of conversational interaction can give us rich insights into how people use contextual information to facilitate a successful mutual understanding. Second, small sign languages like PISL are worth investigating not just for uncovering the typological distribution of structural properties across the world's languages, but for what they can tell us about language use in general. Third, it is important to frame linguistic claims in the theoretical and methodological context they were made, and to do so requires meticulous meta-documentation of the underlying data and methodologies.

I advocate in this dissertation for a better contextualisation of research and claims. This involves more attention to meta documentation, and reflections on the way in which data is collected. It also involves combining more controlled data types such as task-based elicitation with more situated language use. As Hodge and Goico (2022) point out, drawing from the fields of Ethnography and Corpus linguistics may be a good way to do

so: the former is largely based on building rich and contextualised pictures of language use and the latter is often focused on documenting the breadth of community variation. Particularly in the case of small sign languages where researchers are often community outsiders, centring culturally specific formats of conversation in research methodologies can provide an important window to language use in context that may not be otherwise available to the researcher (see, for example, Ali 2022).

I also advocate for making appropriate and informative comparisons. Mico-community sign languages are too often compared to macro-community sign languages, and positioned as lower rungs on a developmental ladder (Braithwaite 2020b; Kusters & Hou 2020). This is problematic not only from an ideological perspective, but also from a theoretical perspective. As Ameka and Terkourafi (2019) point out, using Western languages as a starting point for comparison is not only largely ethnocentric, but the ideas built solely on Western languages may not culturally or theoretically portable outside those contexts.

Most importantly starting research on understudied small sign languages from a comparative standpoint can leave a major blind spot about the rich ways people in these communities actually use language. Instead of adopting questions like "Does PISL have names?" or "Does PISL have repair?" that can give use answers only about specific structures, I suggest we instead ask questions that allow us to describe the breadth of language use, such as "How do PISL signers do person reference with language"? These approaches can help us deepen our understanding of how language in general works and broaden our understanding of linguistic diversity.

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DECLARATION OF AUTHORSHIP

I hereby declare that all parts of the dissertation were written independently. Assistance of third parties was only accepted if scientifically justifiable and acceptable in regards to the examination regulations. All sources have been quoted appropriately, and I have not used any sources or aids other than those specified. Parts of this dissertation and some figures have been used in the following articles:

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