Best practices for building a bimodal bilingual child language corpus[1]

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1 Introduction

This paper presents an overview of methods developed for a longitudinal corpus of child data under the project Development of Bimodal Bilingualism (Lillo-Martin, Chen Pichler and Quadros, 2009 to 2014), a research project jointly conducted in the United States and Brazil, investigating children's simultaneous acquisition of one of two pairs of languages: Brazilian Sign Language (Libras) and Brazilian Portuguese (BP), or American Sign Language (ASL) and English. We follow the language development of two groups of bimodal bilingual children: hearing children of Deaf parents (known as Coda children or simply kodas/kids of Deaf adults) and signing Deaf children with a cochlear implant (CI) of either Deaf or hearing parents. Our goals are to describe the process by which a sign language and a spoken language develop together; theoretically, this project helps us to understand the nature of conditions on cross-language influence, the mechanisms by which two separate grammars interact, and the feasibility of accounting for bilingual phenomena without appealing to any special machinery.

In previous reports, we have described the notational conventions we use for transcribing speech and sign (Chen Pichler et al. 2010) and the test battery we designed for investigating children's development of speech and sign to elicit experimental data to complement our longitudinal study (Quadros et al., in press). In the present paper, we discuss our project practices for optimizing longitudinal collection of spontaneous bimodal bilingual data. Some of these practices are common across studies of Deaf, signing children (see Baker et al. 2009; Lillo-Martin & Chen Pichler 2008). Many are extendable to longitudinal studies of any language pair, while others, which we focus on here, are specifically relevant to contexts of bimodal bilingualism, and were born out of the unique challenges of studying children prone to simultaneous articulation in the signed and spoken modalities. These aspects of our research are less technical than our transcription practices and test development, and they are also more fluid and difficult to quantify. Yet being sensitive to these factors can greatly improve the quality of a bimodal bilingual corpus, and for this reason, we wish to document them for future researchers interested in longitudinal collection of bimodal bilingual data.

We begin by addressing the vexing issue of language choice in section 2, discussing strategies for encouraging child production in one or the other target language and suggesting how to respond when the child uses a non-target language. Researchers must bear in mind that language choice for children from Deaf families is affected by many factors, including complex issues of developing Coda identity, a process that begins at an early age. In section 3, we focus on interactions with the families of participant children. Like most longitudinal corpora of child language, ours owes a tremendous debt to parents for the privilege of studying their children. In return, our goal is to partner with them to make data collection as enjoyable and effective as possible, to offer guidance and tips for optimizing their children's language production during filming, and to share project findings with them at regular intervals. Finally, we conclude our discussion in section 4 by addressing some important issues about confidentiality of research participants. These issues are particularly critical with respect to cochlear implanted Deaf children from Deaf families, a relatively rare and highly sensitive population within the Deaf community.

As research interest in this group of children increases, we are faced with the question of how to responsibly mediate requests from other researchers to contact our participant families, given the highly controversial nature of cochlear implantation in the Deaf community.

2 Issues surrounding language choice

The availability of two languages creates rich potential for language 'mixing' and cross-language influence. This is especially true for spontaneous production data from bimodal bilinguals, who have the option of producing two general types of code mixing. *Code switching* is commonly noted in the bilingual literature, where it is defined as a switch from one language to another (e.g., Poplack 1980). *Code blending* (Bishop & Hicks 2005; Emmorey et al. 2008), is a phenomenon unique to bimodal bilingualism, entailing simultaneous production of sign and speech.[2] Previous studies of coda children and adults report a strong tendency for code blending in general (Petitto et al. 2001; van den Bogaerde 2000; Emmorey et al. 2008), and even unimodal utterances (those articulated in only one modality or the other) often display structural influence from the other language (e.g. an English WH-question produced with doubling of the WH-word, normally found in ASL but not in English) (Quadros et al. in press; Lillo-Martin et al. 2012). Thus, a major focus of our project is to understand the types of structural influence that occur at different stages of children's development and in different contexts. At the same time, bimodal bilingual children are developing a sign language grammar and a spoken language grammar, and our data should ideally allow for in-depth analysis of these grammars as autonomous systems. We consider both of these factors as we examine aspects of the children's language choice during our data collection sessions.

Studies of unimodal bilingual language development have found that even at a very young age, children are able to keep their growing languages relatively distinct (Genesee 1989; Zurer Pearson, Fernández & Oller 1995). Several authors emphasize the need for researchers to record in separate language contexts to show the child's ability to separate her languages. However, even at very young ages, children seem able to adjust their own usage to that of their interlocutor. For example, Deuchar & Quay (1999) studied a Spanish-English bilingual child, filmed while interacting with her (bilingual) father in Spanish and her (monolingual) grandmother in English. The researchers found that as early as 1;07, the language of the context significantly matched the language used by the child [$\mathbf{X}^2$=38.76, *p*<.001]. The authors describe the recording contexts as including some bilingual strategies, such as when the bilingual mother participated and occasionally produced translations for the child. They also observed that the child showed a preference for using English outside the home with other monolingual speakers. They argue that "the language used by the interlocutor is not the only important factor influencing the child's language choice, but the location or setting also plays its part." Lanza (1997) also

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[2] We consider code blending to be distinct from simultaneous communication or SimCom in that the former occurs spontaneously in mixed Deaf-hearing households, is generally accessible to all parties, and is used in low-stake, informal contexts, while the latter is essentially sign-supported English, and is noted for being largely inaccessible to Deaf addressees, particularly in high-stake contexts such as classroom lectures, meetings, etc. (Johnson, Liddell and Erting 1989, Tevenal & Villanueva 2009).

suggests that language choice may be affected by the extent to which a child's interlocutor 'negotiates' a monolingual or a bilingual context.

Some studies suggest that children's use of code switching at early ages may be related to a lack of translation equivalents. For example, Nicoladis & Secco (2000) report that 90% of a Brazilian Portuguese-English bilingual boy's code-mixing between the ages of 1;00 to 1;06 can be accounted for by lexical gaps in one of his languages. However, it is clear that children are also sensitive to contextual variables, including the interlocutor's language choices and pragmatic functions (see Genesee & Nicoladis 2005 for review). Comeau et al. (2003) found that six French-English bilingual children, ages 2;00-2;07, were highly sensitive to the code mixing of the adults interacting with them, and adjusted their own code-mixing accordingly.

Such early sensitivity to interlocutors and pragmatics has also been observed for bimodal bilinguals. Petitto et al. (2001) studied three bimodal bilinguals acquiring Langue des Signes Québécoise (LSQ) and French, and three acquiring French and English. They found that both sets of bilinguals displayed interlocutor sensitivity. The children did not exclusively use a single language per interlocutor, although they tended to reflect their parents' language patterns. The degree to which they did this was related to their parents' own mixing rates, as well as to the child's emerging preference for one language or the other.

Bearing in mind that children begin to differentiate their languages and show sensitivity to their interlocutors at an early age, we wanted our longitudinal data collection sessions to alternate in target language. At the same time, the children's emerging language preferences also led us to adopt strategies for eliciting interactions in the children's less preferred language. In the following subsections, we describe the practices we have developed for obtaining representative samples of each child's signed language, spoken language and language mixing.

2.1 Directing the child towards the session target language

We take as our point of departure the assumption that bilingual children differentiate between their two developing grammars very early on (Genesee 1989). We have thus designed our data collection methodology to provide optimal environments for eliciting representative samples of each child's spoken language and signed language separately, with the understanding that episodes of mixing naturally occur. We do this by alternating between speech-target and sign-target filming sessions. During speech-target sessions, the child interacts with a hearing parent or a familiar hearing researcher, with a hearing person behind the camera. The adults set the tone of the session by speaking without signing, thereby encouraging the child to do the same. This is not to say that signing is forbidden during speech-target sessions, just that we try to model unimodal speech during speech-target sessions, to maximize the opportunities for observing the child's English or BP development.

In the same way, sign-target sessions are generally conducted in voice-off signing, signaling to the child that it is time to use ASL or Libras. Parents and researchers interacting with the child are either Deaf or native signer hearing codas. Here the dynamics of language choice are often more complicated than in speech-target sessions, for several reasons. First, parent-child interactions at home are often

bimodal, and many Deaf parents report that they sometimes address their children in speech (with or without signing), and their children respond in kind (van den Bogaerde 2000; van den Bogaerde and Baker 2005). Second, most of the children we study eventually become dominant in their spoken language, which is not surprising, given that many of them spend a relatively small percentage of their day in a signing environment, particularly after the first few years of life. Children may have a difficult time transitioning to voice-off signing, especially after a long day at a hearing preschool. Third, a child interacting with a coda adult whom he/she knows is hearing may insist on speaking instead of signing. On more than one occasion, participant children have asked our coda researchers outright if they are hearing or Deaf, and upon learning that they are hearing, have declared, "Then you should talk." In the next subsection, we discuss some strategies for addressing changes in language choice during filming in a way that maintains a natural, comfortable environment for the child.

2.2 Mediating language choice

As we have noted earlier, code switching and code blending are very common in the production of bimodal bilinguals and occur frequently in our longitudinal data. The adults interacting with our child participants are almost always bimodal bilinguals themselves (though not necessarily native) and the environments where we film (e.g. on campus at Gallaudet, in children's homes) are strongly bilingual. Children growing up in these environments are exposed to language mixing every day and we anticipate its occurrence in their own production. If children spontaneously begin to blend, regardless of whether the session is targeting sign or speech, we do not stop them. In fact, adults interacting with the child often find themselves blending, too, so compelling is it to respond to bimodal utterances with more bimodal utterances. For instance, change from speech-only to blended sign and speech often occurs during depiction, a common linguistic strategy in ASL and Libras used to visually represent or "show" an action or appearance rather than simply "telling" it (Liddell 2003, Dudis 2007). Although depictive structures exist for spoken languages (intonation and co-speech gesture often express depictive content, for instance, in spoken narratives), sign languages are particularly rich in depictive structures. In the interaction below, a hearing researcher (RES) is interacting with two young bimodal bilingual boys, LEX (age 6;08) and BEN (age 6;10) during an English-target session. They are discussing the headgear of a Transformers action figure that flips up and down, prompting the use of ASL depiction in a code switch by BEN, then code blends by both child participants. In the transcript below, depicting verbs are notated with the label DV followed by a general description in parentheses. Also, in this and future examples, signs produced during code blends are enclosed in square brackets indicating the scope of the overlap between sign and speech.

(1)   BEN: No this is like, a shield for his head so he looks like a master.
          RES: A master?
          BEN: Yeah. No. This is actually a shield for his face so when, like, a
                [missile's coming   ]

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                [DV(missile-toward-head)]
BEN:    [he can do this.      ]
                [DV(turn-on-shield)]
BEN flips up the figure's head piece
BEN:    And like…
RES:    Oh, special, like, missile blocker.
BEN:    DV(missile-bounce-off)
LEX:    And he gets…and it just [bounces off            ]
                                      [DV(missile-bounce-off)]
BEN:    And it [bounces              ].
             [DV(missile-bounce-off)]
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Typically, once the blending has served its purpose, the child eventually returns to the target language on his or her own, although in rare instances, blending becomes the child's default "mode" for the rest of the session (these sessions are noted in our filming log as being primarily blended).

In contrast, unimodal code switching from one language to the other is less common in our data than code blending, a pattern that is consistent with previous studies (Petitto et al., 2001; Emmorey et al. 2008). When switches occur, they are much more likely to occur from sign to speech than from speech to sign, for the reasons enumerated in the previous subsection. We have developed a number of strategies that can be applied with children who switch to speech during a sign-target session and resist sign production. The simplest is to always include at least one Deaf person in sign-target sessions. When a child makes an extended code switch to speech without sign, the Deaf adult can gently remind the child that he/she is Deaf and did not catch what the child just said because it was not signed. If the child persists in using speech only, a hearing adult in the room can model sign-only production while making a comment like the one illustrated below.

(2) Coda researcher to child:
IX(Deaf adult) WANT KNOW SAY WHAT.
'He/She (pointing to the Deaf adult) wants to know what you're saying.'

BETTER IDEA ALL IX(us) SIGN, UNDERSTAND CLEAR, MORE FUN!
'Why don't we all sign, so that everyone understands clearly. That way it'll be more fun!'

These types of suggestions echo requests that bimodal bilingual children may often hear from their Deaf parents, and we have found them to be effective in most cases.

When there is no Deaf person present, or if the child is simply too absorbed in looking at toys or books, adults will need to resort to other techniques to coax the child to sign. Sometimes, especially with older children who have filmed both speech- and sign-target sessions with the researcher before, the researcher can simply remind the child that today is a signing session, and that they will have a speaking session next time. Some children seem to associate sign language very strongly with their Deaf parents, so changing the topic of conversation to something related to the

child's Deaf mother or father can also trigger more sign production. Another effective tactic is to talk about something that is conducive to depiction, as we saw earlier in (1). In the exchange below, a 24-month old koda is playing with two figures from Sesame Street, Cookie Monster and Elmo. The mother draws the child's attention and exclaims ELMO KISS COOKIE-MONSTER 'Elmo kissed Cookie Monster!' with heavily depictive movements, classifiers and nonmanual expressions, as illustrated below.

(3) Mother depicts two upright figures. One figure approaches the other and gives it a big kiss.

The child observes this depictive sequence, but then resumes playing with his toy figures. Undeterred, his mother continues to engage her son. Each time he makes the figures do something, she repeats their actions through depictive signing, creating an impromptu game to which the son responds positively. For example, Elmo bounces off the head of Cookie Monster, and his mother depicts this using the same hand configurations she used to depict the upright figures in the kissing scene, as illustrated below.
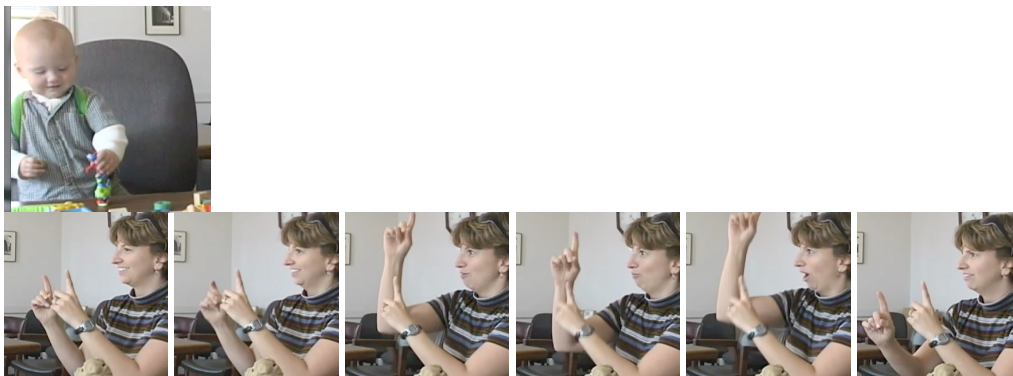
(4) Child has the toy hit the head of the other. Mother depicts this series of events.

Sound effects can also be incorporated with depiction, to great effect. For instance, the mother could choose to vocalize or simply mouthe sound effects like "boing!" as she hit Cookie Monster's head. Sound effects can render depictive sequences even more vivid to hearing children, and we find them to be very effective for drawing children's attention and engaging them in sign interaction.

In the sequence above, although the child did not immediately produce any language himself, his mother's use of depiction successfully drew his attention, and he eventually began signing again. This sort of depiction modeling occurs frequently in this child's videos, with the child increasingly producing depictive structures himself.

When all else fails, researchers can try to engage children in metalinguistic activities that explicitly elicit sign language, e.g. by asking them what their signs are for various objects or English words. Regional variation is very common in ASL and Libras, particularly in places like Gallaudet that attract Deaf people from all across the country. The children in our study enjoy comparing signs with researchers, especially when they encounter signs that they have never seen before, or signs that strike them as funny. In the following exchange, a coda child (BEN, age 6;07) and a coda researcher (RES) are playing with plastic toy food. Although this is an English-target session, BEN and the researcher very naturally begin to code blend as they discuss their respective signs for various food items.

(5)   RES: (pointing to a plastic hotdog) Do you like hotdogs?
        BEN: Yeah. [This is my sign for *hotdogs*.]
                      [HOT-DOG   ]
        RES: Do you know what mine was? Mine is, well…I know all the same
               signs that you use, but when I go back home I use my old signs.
        RES: [This is mine.]
               [SAUSAGE   ]
        BEN: Wow.
        RES   Is that your sign for *sausage*?
        BEN: (nods his head)
        RES: Yeah.
        BEN: [*Sausage.*   ]
               [SAUSAGE]
        RES: [That's my *hotdog.*]
               [SAUSAGE   ]

The most challenging cases of language switches are those in which the child stubbornly refuses to sign with a hearing researcher on the grounds that hearing people talk and Deaf people sign. As an extreme example, one of our koda participants at a recent data collection event insisted that the Deaf researcher interacting with her was really hearing. When we asked what made her think this, she responded, "Because I can hear her talking when she signs." In fact, this researcher vocalized very little, but the child could still make out unvoiced English words as she signed, which was apparently enough to count as talking and, by extension, proof of the researcher's hearing status. Bimodal bilingual children navigate complex interactions between Deafness and language as they develop their own cultural identity, and their understanding of what it means for a person to be Deaf or hearing may pass through several different stages. Some young kodas may reason that because they know Deaf people sign, the fact that they themselves sign must mean that they are Deaf, too. Others may conclude, as did the koda described above, that vocalization is an indication that someone is hearing, because only hearing people talk. In particular, our Deaf children with cochlear implants seem stymied by the question of whether they are Deaf or hearing, since they have been told that they are Deaf, yet they talk and hear very well. When this topic arises during filming, our coda researchers take the opportunity to explicitly discuss the

relationship between Deafness and language, often referencing their own experiences growing up, as illustrated in the following spoken English exchange between a coda researcher (RES), a Deaf child with a cochlear implant (GIA, age 5;11), and her coda brother (BRO, age 8;08).

(6)   GIA: (referring to her friend with a CI) She is Deaf and hearing.
      ….
      BRO: You can't be Deaf and hearing.
      …
      GIA: Yes…
      BRO: She has total loss of hearing.
      GIA: Then why am I Deaf and hearing!?
      RES: You are both…Okay, I think she is right, and I think you are both, too. I think…So like, [GIA's friend], her parents are Deaf, so our heart is Deaf, but we are actually hearing. Because we grow up and we see all these Deaf people, and we sign, and we even do the same things that Deaf people do, we like to talk and talk and talk…
      BRO: (laughing) Yeah.
      RES: They love that, and we love that too! So it's like we are Deaf inside, but on the outside, we are hearing. So we are both, and she is both, too. And that is cooler than being just hearing or Deaf.

Kroskrity (2001) defines identity as "the linguistic construction of membership in one or more social groups or categories" (2001:106). Under this view, one's identity is primarily ascribed not by ethnicity, class or gender, but rather by how one uses language, in addition to non-linguistic communicative practices. The notion of a hybridized or dual coda identity (i.e. both Deaf and hearing) is thus a logical extension, given the prevalence of code blending that codas typically produce (Preston 1994). Enthusiastically reaffirming to a child who is reluctant to sign that "you can sign, and you can also talk…You can do both, wow!" is a positive, encouraging way to coax him/her towards more sign production, and reaffirms to the bimodal bilingual child that they are "qualified" to be signers as well as speakers.

3 Working with participant families

Our longitudinal corpus focuses on early linguistic development, focused mainly on the ages from 1;0 to about 7;0, so the families of our participant children are very involved in the data collection process; and so our subject recruitment is more accurately characterized as family recruitment. Because input is such an important part of the acquisition puzzle, particularly in bilingual situations, we ask all parents of participant children to be involved in the sign language filming sessions, and we suggest some effective techniques for encouraging their children to sign with them. We alternate between speech-target and sign-target filming sessions, and in many cases we conduct the sign-target sessions in the child's home. We aim for parents to be involved in filming at least one sign-target session a month, since

all of our participant children have at least one Deaf parent who provide(s) the bulk of their sign input.

3.1 Basic parent training for data collection

Although we film many of our longitudinal data collection sessions on campus, there are times when we ask parents to film at home on their own, e.g. during vacations and holidays when researcher and family schedules do not coincide. For these sessions, we provide parents with a camera and tripod, as well as list of important tips for filming, summarized below.

- Remember that we are filming your child for the purpose of documenting his/her language development over time. This is our sole focus as we view your videos. We ignore extraneous aspects of your videos, such as how clean your home is, so please do not put off filming just because you are worried that your house looks messy!
- Filming in a small, constrained space encourages the child to stay in one place, which results in a higher quality video. Sitting at a table during part or all of the filming session is a good way to achieve this. Possible activities that you can do at a table with your child include putting puzzles together, playing with play-doh (modeling clay), looking at books, eating lunch or playing a board game.
- We want your child to enjoy filming and produce a natural language sample that is representative of his/her everyday language use. It is not necessary to push your child to sign throughout the filming session. We expect that a good portion of each video session will be silence, as your child examines new objects, processes information, or simply plays. This is perfectly normal, so try to resist the urge to interrupt your child during these silences, and allow him/her to initiate talk when he/she is ready.
- It may take your child time to settle into a filming session, so try to film when you have at least a 20-minute block of available time, rather than stitching together a series of short, disjointed video segments.
- Always use the cordless microphone. Although the video camera is equipped with an internal microphone, the cordless microphone results in a much higher quality sound. Make sure the batteries are fully charged. If not, the camera's internal microphone is better than losing the audio completely.
- Turn off any televisions, fans, air conditioning or other noise sources that can make it hard to hear your child's voice on the video.
- Turn on the lights and make sure there is adequate lighting for filming. This will ensure a higher quality of the video.

Before home filming begins, a project researcher meets with parents briefly to drop off a camera, teach parents how to use it, and go over the tips for filming listed above. If parents express concern that their children have not been interested in signing lately, we also offer practical suggestions for engaging children in conversation, summarized in the next subsection.

3.2 Parent training for elicitation techniques

Although parents are in many ways experts on their children's language abilities, they vary widely in their ability to elicit a rich language sample from their children. Many initially assume that the goal of filming sessions is to compel their child to produce as many signs as possible, to demonstrate the full extent of their vocabulary. Like many child acquisition researchers, we have numerous tapes of parents flipping though picture books, pointing insistently at pictures of objects and saying to their child, "And what is this? Come on, you know this sign/word! What is it?" Not surprisingly, children quickly lose interest in this activity, and the resulting data tell us little about their actual linguistic abilities.

Fortunately, our early parent-child filming sessions also included many episodes of masterful language elicitation that resulted in wonderfully rich dialogue samples. We recorded a series of such episodes onto a DVD and developed them into a video guide for parents, pointing out strategies for creating a relaxing and fun filming environment that encourages children to talk or sign. Below are descriptions and illustrations of several strategies presented in our guide for parents: moving beyond pointing, collaborative storytelling and "backing-off strategies".

Pointing and beyond

Pointing is a powerful communicative strategy and children learn early on how to use this tool effectively. In fact, children often use pointing so effectively that it cuts short the potential for further discourse, such as when a child points to something she wants, the parent immediately fetches it for her, then the child proceeds to play silently with that object. Instead, parents can build on the child's pointing, e.g. by asking what the child is pointing at, or where it is, and so on. This is not a simple labeling exercise, but one that encourages a conversational exchange, especially when the parent follows up with questions.

Collaborative Storytelling

We encourage parents to try collaborative storytelling as a strategy for creating comfortable and safe environments for language. This activity, which engages both child and parent alike, is an entertaining way of helping young storytellers learn how to organize narratives. Parents can build on their child's prior discourse by repeating child-produced sentences with additional information or adding a follow up question such as, "And then what happens?" Parents can also provide guidance when the child is uncertain how to phrase something or what the appropriate sign is.

Below is an example of collaborative storytelling from our corpus data in which the target child BEN (age 2;07) and his mother talk about a nice monster. As in earlier examples, depicting verbs are labeled with the prefix DV. Affirmative head nods are coded here as interjections (*i(yes)*)[3].

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[3] In our description of notations conventions for bimodal bilingual data presented in Chen Pichler et al. (2010), head nods were coded as gestures (*g(yes)*). Our experience since then has led to several changes to these conventions, notably on the way we notate gestures, emblems and interjections. See our project website (bibibi.uconn.edu) for an updated list of notational conventions.

(7) Mother and BEN tell a story about a nice monster.

BEN: SEE FAKE MONSTER DV(raise-claws-to-attack-like-monster).
"I saw a fake/plastic monster, and it went like this: 'Arrr!' with its claws out."
MOT: SEE FAKE MONSTER
"You saw a fake monster?"
BEN: … i(yes).
"Yes."
MOT: LOOK-LIKE WHAT
"What did it look like?"
BEN: WHAT
"What?"
MOT: MONSTER PURPLE
"Was the monster purple?"
BEN: i(yes)
"Yes."
MOT: COLOR MONSTER WHAT
"What color was the monster?"
BEN: GREEN[?] CLOTHES SHIRT CLOTHES.
"It had on green(?) clothes. A shirt. Clothes"
MOT: USE DRESS
"It was wearing a dress?"
BEN: RED[//] BLACK SHIRT. BLACK SHIRT[+].
"Yes, it was red… uh, black. It had a black shirt on."
MOT: BLACK GOWN SHIRT
"Oh it had a black shirt on. Oh, wow."
BEN: BLACK IX(shirt).
"A black shirt."
MOT: BLACK. DV(indicating-shirt) BLACK. i(yes).
"It was black."
BEN: IX(self)[+]. IX(self)[+] MONSTER// MONSTER IX(self) MONSTER.
"It's me. It's me, the monster. I'm the monster."
MOT: IX(BEN) MONSTER. NICE MONSTER MEAN MONSTER
WHICH IX(BEN).
"You? You're the monster. Wow, are you a nice monster or a mean monster?
Which one?"

BEN: IX(self)# NICE MONSTER.
"Me… I'm a nice monster!"
MOT: NICE MONSTER YES.
"Oh, you're a nice monster, yes you are."

This is only a short excerpt from a much longer exchange that is rich with examples of how collaborative storytelling engages the child and encourages his linguistic development (learning new words, learning how to depict elements for storytelling, learning how to structure his stories and how to relate one part to another part, etc.), all with playful guidance from his mother.

Backing-off strategies

Sometimes children are too tired or cranky to respond to the engagement strategies described above. At these moments, children seem to become more uncooperative the more adults try to engage them. If, after some several attempts, it becomes clear that the child does not want to participate, we may resort to one of the following "backing-off" techniques as a final attempt to draw the child into interaction before cutting the video session short, to avoid upsetting the child and jeopardizing their interest in future video sessions. Because crankiness is often a response to children sensing the pressure of adults wanting them to engage, backing-off strategies move the focus of activity away from the child, removing this pressure. For instance, if the child is distracted or acting up, the adult can ignore the child's behavior and continue to participate in the session without the child, e.g., reading a book aloud to no one in particular or to someone else in the room, or playing a game on their own, without calling on the child to participate. One our research assistants is particularly skilled at animated conversation with stuffed animals. All these techniques allow cranky children the leisure of observing the adult's activity from a safe distance, without pressure to participate. For many children, this break is enough to allow their frustration to dissipate, and they eventually begin listening/watching what the adult is doing out of curiosity. Then the adult can casually ask, "You see what I'm doing here? Do you want to try?" offering the child the chance to re-engage once he/she feels ready.

3.3 Answering parents' questions

As researchers involved in longitudinal data collection, we enter into a long-term working relationship with parents and their children. Parents offer us the valuable opportunity to observe their children's language development from a privileged vantage point, and in return, we have a responsibility to communicate openly with them about our research plans and findings, responding to their questions, suggestions or concerns that may arise during the course of the project. Hearing researchers studying bimodal bilingualism, especially coda researchers, find themselves acting not only as data collectors, but also as cultural brokers. Singleton and Tittle (2000) point out that Deaf parents are similar to hearing parents raising children adopted from a different ethnicity, in that these parents are not members of their children's "native culture" (2000:227). Adoptive parents often seek out ways to promote the identity and cultural development of their child, and similarly, we have

found that Deaf parents often seek out hearing or coda adults in order to access information about hearing culture and the coda experience. Since parents cannot monitor their children's speech, we often field questions concerning their child's speech development. Additionally, the Deaf parents in our study ask our coda researchers about their childhood experiences as a way to understand and connect with their children. Questions cover a wide range of topics such as music, school, friends, dual identity, and communication patterns with Deaf and hearing family members. We feel that we have an obligation to our participant families not only as researchers, but also as cultural liaisons, who take the time to talk to parents about their concerns, provide them with educational resources and share relevant cultural experiences.

4 Issues of consent and confidentiality

In the U.S., much of our recruitment of coda and Deaf CI subjects has occurred around Gallaudet University, where there is an unusually high density of both populations. In many ways, being located at such an epicenter of the Deaf community and having such ready access to qualified participants is a tremendous asset to our project, but it also raises concerns for confidentiality that would not occur elsewhere. Additionally, the use of video data for sign language studies presents challenges for protecting the confidentiality of project participants, since they are readily recognizable on film. Deaf communities tend to be quite small, increasing the likelihood that if we show still shots or video clips of our participants in public, they will be recognized by someone. Fortunately, the general population seems fairly comfortable with this reality now, thanks to the widespread popularity of free access to online YouTube videos and vlogs, but this is much less the case for Deaf families who have made the controversial decision to seek out cochlear implantation for their children. As researchers, we have an important responsibility to ensure that parents (i) clearly understand the goals and procedures of the research, so that they can assess whether the potential benefits of project participation outweigh the potential risk to their and their children's confidentiality, and (ii) are given the opportunity to determine how researchers use their child's video data. Research involving particularly sensitive groups, such as Deaf children with cochlear implants, calls for even more caution than usual, a point that we will address at the end of this section.

4.1 Informed consent and video release

In the United States, the Institutional Review Board (IRB) of the researcher's University or College is charged with ensuring that informed consent and video release forms used by researchers meet the requirements stated in (i) and (ii) above; a similar ethical review board exists for universities in Brazil. Although none of the IRBs at our host universities require sign language translations of these crucial forms, we have recently begun developing sign versions in the interest of accessibility, to be posted online so that prospective participant families can review them before meeting with us to discuss the study. We have also developed a very explicit video release form featuring a checklist of specific activities for which parents can give permission for us to undertake with their child's data. The list includes transcription

by project research assistants (a minimum requirement for project participation), and optional inclusion of photos or short video clips in scientific publications or conference presentations, exposition of more extended sections of video during classes taught by researchers, and analysis by students in such classes or research collaborators outside the original project. For each activity, parents check one of three options, as illustrated in the excerpt from the U.S. video release form below.

(9) May we use photos and/or short sections of your video data in presentations and handouts for conferences and workshops on linguistics and/or deaf education?
___Yes, you may do so without further approval from me.
___Yes, but only with my prior approval of each photo or clip that you plan to share.
___ No.

May we use sections of your videotapes for teaching purposes in presentations and handouts during linguistics courses taught by members of the research team?
___Yes, you may do so without further approval from me.
___Yes, but only with my prior approval of any video data that you plan to use.
___ No.

This level of specificity gives parents flexibility and control over the degree to which their child's data is shared outside of the immediate research team. When parents check the "No" permissions option, their children's digitized data are stored separately from other data on our computers, to avoid accidental selection of that child's data for illustrations in publications or presentations. In cases where parents choose the permissions option "Yes, but only with prior approval from me", we email them the relevant photo or video clips each time we wish to use them, with a brief description of the purpose each will serve. In many cases, after we have done this a few times, parents inform us that they are now comfortable enough with how we share their children's videos that we need no longer seek approval for specific uses.

It is worth mentioning that longitudinal data tends to be very rich, and can be mined for many, many years, long enough that researchers will eventually need to consider obtaining informed consent and video release permission from the participant children themselves. For this reason, it is important to keep contact information for participant families updated from year to year. This can be a difficult practice to maintain, especially for projects with large numbers of participants, unless researchers explicitly integrate this into their calendar of yearly to-do items.

4.2 Working with Deaf families of children with CIs

When in doubt on issues of confidentiality and consent, we err on the side of caution, and this is especially the case with respect to our participating Deaf children with cochlear implants. Cochlear implants are a highly charged and divisive topic in the Deaf community, eliciting strong feelings and impassioned rhetoric from all sides. When recruiting participant families from sensitive populations such as Deaf children of Deaf families with cochlear implants, we ask parents what additional

measures we would need to take for them to feel comfortable joining our study, beyond the standard measures required by the IRB. Some requests from parents that we have accommodated include the following:

- releasing to parents the names of all researchers, assistants, transcribers or other individuals who could potentially have access to their child's data, and limiting access to only those individuals with whom the parents feel safe
- filming children with CI and the research assistant only, with parents remaining off video
- not showing any photo or video of participants with CIs in publications or presentations of any kind
- stressing to research assistants and transcribers during the hiring process that they will be working with Deaf children with CIs, and that one of our project expectations is that they be able to approach this group with respect and professionalism, regardless of their personal views on cochlear implantation.

The evidence is still very mixed as to how well spoken language acquisition with a cochlear implant mimics typical acquisition by hearing children, and divergences between the two groups could be due to a host of factors, including delays in spoken language access while the child acclimates to a new implant. Deaf of Deaf children who receive cochlear implants are crucially different from most implanted children because they receive early, continuous and high quality language exposure through their parents' signed input. Indeed, the participants in our project perform very well on standardized tests of English, with no difference in performance between Deaf children from Deaf families with cochlear implants and koda children (Davidson et al., submitted).

Scientists are increasingly recognizing that this group of children has the potential to shed light on very interesting and long-standing research questions that have hitherto been impossible to test. As research interest in this very small population grows and we receive invitations for collaboration from outside our project, we proceed with extra caution and open communication with participant families, to ensure that they continue to be informed about the potential risks and benefits of their research participation.

5 Conclusions

In this article, we have described the general data collection methodology for our current longitudinal corpus of bimodal bilingual acquisition data. Although this methodology is suitable for adaptation to projects targeting any type of bilingual acquisition, its design reflects challenges specifically related to the collection of bilingual data in two modalities. In particular, we address the challenge of obtaining representative samples of children's sign and speech, both individually and in mixed contexts. Given the long-term nature of longitudinal data collection, our methodology also emphasizes the importance of working with participant families, communicating openly with parents, providing them with useful training for eliciting speech and sign production, and mediating language choice during filming sessions. Through these practices, parents become partners with us in our exploration of their

children's developing competencies in sign and speech. The techniques and methods described in this paper have yielded rich data for our corpus project, while at the same time creating an enjoyable experience for participant children and their families.

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