Managing trouble spots in conversation

Other-initiated repair elicitations produced by a bilingual youth with autism

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This study examines other-initiated repair sequences in everyday conversations between a bilingual youth with autism and his family members. The analysis is centered on the types of repair initiators produced by the youth, the targets of his repair elicitations, and his family members' subsequent actions. Findings include two dominant patterns in the data that indicate marked differences in the ways the youth's parents interact with him. The discussion highlights the youth's ability to shift the participation framework to facilitate his understanding of a previous utterance; the analysis also reveals the strategies employed by some of his family members to encourage interactional progressivity. The concluding section addresses implications of the study for understanding how bilingual youth with autism target trouble sources, enact alignment, and draw from their bilingual proficiencies in everyday conversations.

Keywords: autism, other-initiated repair, bilingualism, alignment, family interaction

1. Introduction

Most verbal children diagnosed with autism have difficulty maintaining social interaction and lag behind their neurotypical peers in the development of their receptive and expressive language skills. Specific communicative challenges often include difficulties engaging in joint attention, determining the meaning of speech acts, providing relevant contributions in conversation, and the tendency to employ atypical speech patterns (see Tager-Flusberg et al. 2005 for an overview). Due to these issues, clinicians in the United States have questioned whether bilingualism is a suitable goal for children with autism. The contention is that bilingual input might further hinder these children's acquisition of language and the

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development of their conversational abilities; thus, parents are often advised to limit their interactions with their children to one language, English (Fernandez y Garcia et al. 2012; Jegatheesan 2011; Yu 2013). Yet recent experimental and observational studies that compare children with autism raised in monolingual versus bilingual contexts have countered these assumptions and indicate that bilingual socialization does not impede early receptive and expressive language development (Ohashi et al., 2012; Petersen et al. 2012). In addition, bilingual exposure is linked to the development of more socially engaged behaviors in these children (Hambly and Fombonne 2012; Valicenti-McDermott et al. 2013) and a higher level of verbal fluency than their monolingual peers (Gonzalez-Barrero and Nadig 2016).[1] While these studies have begun to influence clinical perspectives, parents typically interact with many different types of therapists and medical professionals and often receive conflicting advice. The complexity of this situation has created a quandary for immigrant parents who routinely speak their native language at home and would like to encourage their children's bilingual development.

There is a strong case to be made for families to speak to their children in their home language, especially children with autism. Language socialization studies have indicated that autistic children's acquisition of the primary language used at home can critically impact their development (Fernandez y Garcia et al. 2012; Yu 2013, 2016a). The home context is where children initially learn to forge relationships, and if they are spoken to only in English rather than in their family's home language, they are often left out of routine family interactions and miss opportunities to acquire social skills and culturally relevant practices (Kremer-Sadlik 2005). In addition, parents who attempt the English-only approach but do not speak English fluently may struggle to express themselves and end up speaking less to the child with autism, which has implications for establishing familial bonds (Fernandez y Garcia et al. 2012). Wharton et al. (2000) studied communication between immigrant parents and their preschool-age children with autism and observed that when using their native language, parents employed more affect and reported feeling closer to their children. These children were also more likely to emulate parents' utterances when parents spoke in their native language. Recent studies highlight the importance of considering the specific linguistic and cultural backgrounds and needs of families with school-age children diagnosed with autism. For example, Baker's (2017) study examined school IEP (Individualized Educational Program) meetings and found that little information was shared about families' home language practices and children's bilingual abilities. Addi-

1. Bilingualism is correlated with higher levels of metalinguistic awareness, theory of mind, and attentional processing in typically developing individuals (Bialystok et al. 2012); little research has specifically addressed autistic populations).

tional challenges continue to fuel the English-only recommendation, including the dearth of bilingual instructional resources and the limited number of therapists available who speak other languages (Kay-Raining Bird et al. 2012).

Ethnographic investigations have yielded a range of perspectives on the prioritization of heritage languages in the lives of families with children on the autism spectrum. In Jegatheesan's (2011) research on Muslim families, parents emphasized the importance of multilingual socialization for fostering their children's abilities to communicate with family members, participate in religious classes and services, and attend school. Additionally, she found that the children made gains in more than one language over a 17-month period. Yu (2013) reported that the Chinese parents living in the US tended to view their children's acquisition of English as a priority since they believed that it would ultimately be more beneficial than Chinese in preparing their children for their future academic and occupational contexts. As Baker (2013) notes, parents have different linguistic priorities and goals for their children and might not find bilingual socialization appropriate; thus, professionals must consider each case carefully and implement culturally sensitive approaches.

Scholarship on parental attitudes toward their children's language socialization in multilingual contexts has provided insights into family language practices and perspectives, yet few studies have undertaken a systematic analysis of bilingual family interactions. We know very little about how individuals with autism, who have been raised bilingually, draw from different languages in their daily lives to coordinate their talk with co-participants. Relying primarily on parents' reports about their children's communication makes it difficult to determine firsthand how the languages are being employed in interaction. One important exception is Yu's (2016b) conversation analytic case study of a five-year-old boy with autism in a bilingual (Chinese-English) family. Yu's analysis of code-switching practices shows the child's ability to employ several common pragmatic functions of this practice, such as clarifying the meaning of an utterance, shifting stances, emphasizing a point or marking affect, and creating a conversational boundary marker. Bilingual socialization allows the child to socially engage, express affect, and fully participate in family life.

The aim of the present study is to contribute to the scant but growing body of ethnographic, conversation analytic research on bilingual interactions involving individuals with autism. This analysis of interactions in a bilingual (Japanese-English) family living in the United States examines how communicative breakdowns and conversational repairs are managed in everyday conversations. In the Gardner family, the mother is a native Japanese speaker, the father is an native English speaker, and their family members use both languages when conversing at home. Thomas, one of the Gardner's two children, was diagnosed with

autism when he was four years old. At the time of the study, he was seventeen and attended a local public high school. In addition to his school's special education curriculum, he received speech therapy (in English) and tutoring several times each month. Data collection methods included a family questionnaire, an initial interview, approximately 30 hours of video-recordings of naturally occurring interactions at home over a five-month period, and a final interview.

The investigation presented here examines other-initiated repair segments in which Thomas targets his parents' utterances. The analysis highlights the interactional practices through which participants facilitate mutual understanding, display alignment, and maintain progressivity on a turn-by-turn basis (Sacks et al. 1974; Schegloff 2007; Stivers and Robinson 2006). Repair operations involve participants working to establish intersubjectivity in regard to the meaning of a prior utterance and the expected next action (Goodwin 2003a; Schegloff et al. 1977), which can be tied to differential expertise in the specific language(s) used in conversations among bilingual participants (Bolden 2012).

2. Ethnographic and conversation analytic approaches to studying autism and social interaction

Clinical research has played a crucial role in determining deviations from normative language reception and production; however, these diagnostic protocols operate on a deficit model that frames autistic personhood as chiefly involving an avoidance of social interaction and a lack of engagement with the world (Ochs and Solomon 2010; Solomon and Bagatell 2010). While diagnostic tools have shaped our understanding of the linguistic, communicative, and cognitive impairments associated with autism, they are implemented in experimental settings in which individuals are evaluated according to neurotypical conversational norms and speech styles shaped by culturally specific expectations for performing communicative tasks (Maynard 2005). As Sterponi et al. (2014) note, when atypical behaviors are treated as impairments, it becomes more difficult to document alternative forms of competence and meaning-making in social interaction. In addition, participants in clinical settings are often unfamiliar with the researcher or interlocutor addressing them. Since pragmatic skills rely on the participants' understanding of social context and cues, these abilities are particularly challenging to assess in a standardized manner in non-naturalistic settings (Norbury and Sparks 2012).

An appreciable amount of research has attempted to explain the pragmatic challenges of the autistic condition as partially stemming from the inability of individuals with autism to comprehend the intentions behind the utterances of

others and engage in shared perspective-taking, i.e. 'theory of mind' (Baron-Cohen 1995). Yet studies that employ a conversation analytic framework recast the interactional context as collaborative terrain that requires the coordinated efforts of both parties. Ochs et al.'s (2004) study of children diagnosed with high-functioning autism revealed the types and variability of social engagement displayed by these children. These researchers' discourse and conversation analytic studies noted the children's communicative deficits while providing a more specified understanding of the dimensions of perspective-taking that highlighted the children's abilities to orient, albeit at times in atypical ways, to social norms and expectations regarding conversational procedures. For example, structuring utterances with specific interlocuters in mind is referred to as "recipient design" in conversation analysis; speakers' current turns typically demonstrate that they are orienting to an interlocutor's previous contribution (Sacks et al. 1974). Utterances that reflect recipient design are topically, grammatically, or lexically, related to the previous turn. The tendency for individuals with autism to produce atypical utterances, which do not appear to be designed for their recipients, often gives the impression that their contributions are somehow inconsequential or meaningless. Ochs and Solomon, however, found that when children's utterances were not directly relevant, they could often be understood as "proximally relevant," a concept that is borne out in their turn-by-turn analysis of data extracts (2005, 143). While these children might misinterpret the actual referent in a previous speaker's utterance, they produce structurally patterned responses that display a logical link to the previous turn.

Several studies that take a conversation analytic approach question previous assumptions about the features and functions of communicative behaviors associated with autism (see Antaki and Wilkinson 2013). In line with the concept of 'proximal relevance', other scholars have revealed the sense-making practices behind utterances that are atypically rendered or appear to be unrelated to ongoing talk. For example, Maynard (2005, 502) re-analyzed instances in which children with autism were asked, "What do you do when…[a situation is described]" by a clinician in a diagnostic procedure. The children's responses often displayed literal or highly specific interpretations of general queries. Maynard illustrates the ways that these responses reveal different 'gestalts', or orderly, coherent ways of framing and understanding an interlocutor's questions, and he refers to these atypically specific rationales as 'autistic intelligence'. Rather than simply labeling answers as incorrect, Maynard suggests that clinicians should consider the corresponding processes behind these responses. He notes that "deficit accounts draw a boundary between commonsense and autistic intelligence that misses relations between them" (2005, 518). In addition, Sterponi and Fasulo's (2010, 121) conversation analytic study of stereotypical features of speech associated with autism, such

as formulaic utterances and repetition, demonstrates that these contributions are consequential and function as 'progressivity techniques' in interaction.

Since pragmatic aspects of social interaction are particularly challenging to individuals with autism, it is not surprising that communicative breakdowns occur more frequently in their conversations (Keen 2003). In general, when problems arise, participants must locate and rectify the source in order for the interaction to continue, either by initiating repair on their own talk or by engaging in other-initiated repair. Most research on repair initiations and strategies in interactions involving individuals with autism has been conducted in institutional settings. These studies focus on interactions in which repair prompts are initiated by researchers or clinicians (Geller 1998; Volden 2004). Findings indicate that even though children with autism are not as responsive to repair initiators as those without autism, they do, at times, respond to requests for repair and display an understanding of the specific aspects of their previous utterances that need reformulation (Wiklund 2016). Little research, if any, has investigated how those with autism target trouble sources and initiate repair on their interlocutors' utterances in routine interactions, especially in bilingual contexts.

3. Study design and research methods

The guiding questions for this study were: (1) How did Thomas target a trouble source and initiate a request for repair?; (2) What type of repair actions did his interlocutors perform in response, and what was the outcome of the repair sequence?; and (3) How were Japanese and English employed as resources for repairing communicative breakdowns? Are there shared practices or patterns that are enacted among family members?

3.1 Data collection

The interactions analyzed in this study are part of a larger study of language practices in three bilingual (Japanese-English) families with high school-age children who were diagnosed with autism in early childhood. The researcher was introduced to these families by an educator who was a member of a local organization for parents of children with disabilities. In all three families, the youth with autism were verbal and attended special education programs in their local public school districts. The larger study examined youth language practices, given the different

language socialization approaches implemented in these families.[2] Only one of the three families, the Gardners, routinely used both languages at home with their children, while one of the other families used primarily Japanese, and the other attempted to follow the English-only protocol. The study lasted approximately six months per family and began by asking parents to complete a questionnaire about linguistic and educational backgrounds, autism resources, and daily routines. The initial interview was semi-structured with prompts that revisited participants' questionnaire responses and asked about their perspectives on autism and bilingualism. The interviews were conducted in English and Japanese, with a great deal of code-switching when clarification was necessary. The next component of the study involved participant observation and video-recording family interactions in the home twice per month over a five-month period, each visit lasting approximately three hours; thus, video-recordings totaled an average of 30 hours per family. Parents selected the days and times for the visits and often chose mealtimes and other group activities as these were the occasions in which most family members tended to be at home. In the final interview, which was held about one month after the videotaping and marked the end of the family's participation in the study, the family was asked to reflect on the time period in which the recordings occurred, their experiences of being recorded, and their hopes for their children's futures.

The video data were transcribed by the researcher along with two bilingual research assistants who were native speakers of Japanese (using the video transcription software *InqScribe*). For the current project, the researcher selected mealtimes, including preparation and clean-up, which comprised about 16 hours of the 30-hour Gardner family corpus. During mealtime activities, the Gardners collaborated on meal-related tasks and engaged in conversation in close proximity for much of the time. The coding scheme marked the occurrence of an other-initiated repair by Thomas (the youth with autism), the type of repair initiator he employed, and the recipient targeted in the repair.[3] The subsequent analysis examined the turn-by-turn sequential context in which these repairs occurred and the use of two languages in these exchanges.

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2. One of the three families spoke primarily in English to their son during his childhood; another family used Japanese with their children except for occasions when monolingual English speakers visited their home; and the third family routinely communicated in both languages at home.

3. Inter-rater reliability among the three coders was 89%. The majority of instances in which the codes did not match were instances in which one coder did not mark every time that Thomas' lack of uptake was treated as a repair initiator by other participants (who subsequently reformulated their utterances).

3.2 Study participants: The Gardner family

The Gardner family live in a middle-class suburb of Los Angeles. The area is ethnically diverse with a large Asian population and smaller White and Hispanic populations, and over 60% of households speak a language other than English. Since moving there 15 years ago, Mr. Gardner's job has required him to travel one to two weeks per month. Mrs. Gardner stays at home with her two children, Thomas and his younger sister, Naomi. Mrs. Gardner's sister, Sumi, lives nearby and spends most weekends with them. Mrs. Gardner met her husband in the US when she was studying English as a college student. The two married and moved to Japan for Mr. Gardner's job with a Japanese company. When Thomas was born, he was spoken to in Japanese and English by his mother and father, respectively. The family moved back to the US when Thomas was two years old, and it was around this time that his parents became concerned about Thomas' behavior. Thomas was not speaking, he rarely made eye contact, he became easily upset with changes in daily routines, and he often engaged in repetitive movements and fixated on light patterns on walls. The family saw several medical professionals over a two-year period before he was diagnosed with autism at the age of four years old. The Gardner parents disregarded the professional advice they received to use English exclusively with their son; Thomas was already beginning to speak, and the couple decided to continue to use both languages at home. When he started school at age five, he began to use English far more than Japanese. Thomas is currently a student at a local public high school where he is in a program for students with intellectual disabilities.

The Gardner family takes a two- to four-week trip to Japan every summer and stays with Mrs. Gardner's mother. In the past several years, Thomas has become more interested in speaking Japanese. At home in the U.S. in the months prior to the annual summer trip, he often asks "How do I say x in Japanese" or compares the appropriate ways of communicating in the U.S. and Japan. According to the questionnaire and interview data, Thomas's mother is a native Japanese speaker who speaks English well but feels more comfortable communicating in Japanese. She reported that she speaks "about fifty-fifty" at home and frequently codeswitches in conversations, especially with her son and husband. Thomas' father is a native English speaker who shared that he is conversant, but not fluent, in everyday Japanese. He stated that he typically switches back and forth between languages at home. The parents emphasized that Thomas is more proficient in English than Japanese and pointed out that he often alternates between languages in conversation. Aunt Sumi speaks both languages, as does Naomi, Thomas' younger sister, and they indicated that they are equally comfortable with each. Naomi was 12 years-old at the time of the study, and was usually not home

during the video-recording sessions. When she was around, she was often in her room with a friend, and the door was closed. When Naomi did join her family for meals, she and her brother rarely spoke to one another. In the initial interview, both parents reported that the two did not interact very much, which they attributed to Naomi having a difficult time understanding her brother's autism.

Observations and recordings confirmed most of the information about family members' language practices that was provided in interviews, with the exception of the father's codeswitching, which happened infrequently. While he often understood and responded to much of the Japanese utterances spoken around him, the majority of his own utterances were in English. Thomas often spoke Japanese with his mother and aunt, but at times his use of Japanese revealed awkward syntactic and pragmatic practices, and a comparatively smaller lexicon than when he spoke in English. Thomas also often substituted English words within a Japanese utterance (or engaged in inter-sentential codeswitching).[4] Since Thomas is more proficient in English than Japanese, one early hypothesis was that his repairs would target more utterances containing Japanese than those spoken entirely in English.

4. Results and Discussion

4.1 Other-initiated repair elicitation types

In the 16 hours of mealtime data, the total number of repairs initiated by Thomas was 155. The most frequent type of repair initiation took the form of a clarification request (74%), a category that included candidate understandings, requests for confirmation, partial repetition of a previous utterance, open class initiators (Drew 1997), and *wh*-questions.

After clarification requests, the next most common type of repair initiation issued by Thomas was a lack of uptake (24%). No uptake was considered to be a repair initiator when it was treated as such by interlocutors who subsequently repaired their immediately previous utterances. In half of the occasions in which Thomas' lack of uptake was interpreted as a repair initiator by his interlocutor (18/36), he targeted his mother's utterance in English, which triggered her switch to

4. At the same time, Thomas' codeswitching practices also revealed that he oriented to speakers with different language proficiencies by addressing them in their respective native language. Although this was not an explicit or rule-governed practice, it was evident when he began an utterance in one language, and then repaired his previous partial utterance by shifting into his interlocutor's native language.

Table 1. Thomas' repair initiations: Types, frequencies, and examples

Type of repair initiation	Tokens and rate%		Examples
(1) Clarification Requests			
– Candidate understanding (including insert expansions and confirmation requests)	8	Father:	Did you like the new sauce? (1.0)
		Thomas:	The barbeque?
– Open class initiator	32	Mother:	Where did the book go.
		Thomas:	Hhn?
– Repetition of part of previous utterance	23	Father:	Are you planning to go to graduation?
		Thomas:	To grad- (0.8)
– Wh-question	11	Aunt:	You've been to San Bernardino. (1.2)
		Thomas:	Where is that.
Clarification Requests: Total	114 (74%)		
(2) No Uptake	36 (23%)	Mother:	You don't like it? (3.4)
		Mother:	Mazui?= *Tastes bad?*
		Thomas:	=Mm.
(3) Correction	5 (3%)	Aunt:	Looks like (0.6) hobbit. (0.4)
		Thomas:	Harry Potter.
Total	**155**		

Japanese (a phenomenon that will be explored below). The few remaining repair initiators were corrections (3%).

Since Thomas speaks and understands more English than Japanese, the expectation was that he would target lexical and grammatical units in the Japanese utterances of others. Yet, the majority of the trouble-source turns were in English. Interestingly, two strong patterns emerged in the analysis; while one repair type addressed his father's speech, the other mostly targeted his mother's utterances. These patterns will be examined below.

4.2 Clarification requests and participation frameworks

In terms of participant-targeted repairs, the most frequent recipient of Thomas' repair initiations was his father (58%), followed by his mother (24%) and aunt (18%). This distribution is striking for several reasons. First, Thomas interacted with his mother and aunt more frequently than he did with his father; thus, there were many more occasions and turns at talk that were potential targets of repair. Second, while his mother and aunt often spoke Japanese and codeswitched between the two languages, his father spoke English, the language in which Thomas was more proficient. To understand the preponderance of Thomas' other-initiated repairs targeting his father's utterances, we will take a closer look at these interactions. A large number of these repairs initiators took the form of post-first clarification requests that led to expanded insert sequences. In over half of these cases, the repair initiations were directed to participants *other* than the speaker of the trouble-source turn (Thomas' father). This is surprising since other-initiated repairs typically select the speaker of the trouble source turn as next speaker (Bolden 2011).

Extract 1.

```
  Clarification_3
  01 Father:    What will you do for the talent show.
  02        (0.8)
→ 03 Thomas:    The-
  04        (0.6)((Thomas looks over at his mother))
→ 05 Thomas:    hh Raishu no,=
                  Next week's
  06 Mother:     = >So so so.<
                  Right right right.
  07        (0.6)
  08 Thomas:      Tai:ko. ((glancing at father))
  09 Father:      O:h yea[:h.
  10 Mother:             [°Yea::h. ((nodding))
```

In Extract 1, Mr. Gardner addresses a question to Thomas about his planned activity for the upcoming talent show. Thomas begins with a partial repetition in line 03 (The-) followed by a cutoff and a brief pause, which displays that he might be having difficulty naming the referent in his father's previous turn ("the talent show"). He then turns to look toward his mother, switches into Japanese, and begins to produce a candidate understanding that identifies the referent as an event occurring the following week. His mother confirms his understanding with her latched, enthusiastic, "So so so." After a short pause, Thomas produces a response to his Father's initial query in line 08 (Tai:ko). Thomas' reply triggers his father's memory in line 09 (O:h yea:h), and his mother also indicates that they have spoken about this previously in her overlapping utterance and head nod.

Other-initiated repairs are typically addressed to the speaker of the trouble-source turn in order to give the speaker a chance to clarify or reformulate a previous utterance (Schegloff et al. 1977). It is not clear that Thomas is aware of this norm. Above, after a very brief attempt to display to his father that his previous turn was problematic to him (line 03), Thomas' subsequent utterance in Japanese (line 05) selects his mother as next speaker as he attempts to recruit her help to answer his father's question. This type of insert sequence, in which someone other than the initial speaker is selected to produce a repair, is identified by Bolden as an *"other"-selection* other-initiated repair (2011, 239). Bolden, however, concludes that this type of repair initiation seldom occurs and is issued most commonly for two reasons. The first is for the sake of sequential progressivity; for example, a *sotto voce* question to a participant other than the speaker of the trouble-source utterance might avoid interrupting the flow of the ongoing conversation. The second context for "other"-selection is tied to the differential epistemic rights of the participants. One such case would be when the speaker initiating the repair suspects that the previous speaker might not be have the ability or knowledge to produce the necessary repair, as might happen with young children or non-native speakers. Alternatively, epistemic status might influence a participant to launch an other-selection repair initiation if the person selected is more about knowledgeable about the situation under discussion than the previous speaker. In Extract 1 above, Thomas directs his second repair attempt to his mother, who is the parent who has been involved in overseeing Thomas' participant in the talent show, and might viewed by Thomas as the knowledgeable party. Yet other similar repairs initiated by Thomas are not necessarily concerned with epistemic status.

Just prior to the sequence below, Mr. Gardner asked Thomas about his experience earlier that day when they barbequed together, which was a weekend activity that often occurred when his father was home.

Extract 2.

```
  Clarification_28.
  01 Dad:     Didja learn anything today (.) different from before?
  02         (1.0)
→ 03 Thomas:  Oh on this burger? Hm? ((looking at Dad))
  04  All:    Mm.
  05 (0.8)
→ 06 Thomas: (So) kono ba:ga: – ((looking at Mom))
               This burger -
  07 Aunt:    Mm.
  08 Mother:  Nanika – Was there [something different?
              Something -
  09 Aunt:                       [Atarashii, atarashii=
                                   New, new
  10 Thomas:  =Mm. ((looks down at his plate))
  11   (0.4)
  12 Thomas:  Un,
  13   (0.2)
  14 Thomas:  How to put cheese on it. ((looking at Dad))
  15 All:     Hhhha: ((nodding))
```

In the second extract above, father asks a "known-answer" question, as he was the one to teach Thomas how to make the cheeseburgers while his mother and aunt were in the kitchen preparing the salad during the barbequing activity. After a one-second pause in line 02 that displays a delay in responding, Thomas begins with "Oh," a token of recognition (Heritage 1998), and then initiates a repair with a candidate understanding in regard to the referent (line 03: Oh on this burger? Hm?) while looking at his father. Although Thomas receives confirmation from the group, he initiates a second, almost identical repair in line 06 when he gazes across the table in his mother's direction and begins to ask in Japanese, "kono ba:ga:" with continuing intonation. At this point, his mother in line 08 reformulates father's query in a simplified form, first in Japanese, and then English. His aunt also chimes in employing the Japanese word "atarashii" (new) as a hint. After providing minimal positive uptake, Thomas proffers a response, and his family members nod in agreement.

Mr. Gardner has a higher degree of epistemic access (Heritage 2012) than his wife and sister-in-law in this situation; however, rather than issue another clarification request to his father, Thomas opts to ask his mother instead. In both Extracts 1 and 2 above, Thomas initially, albeit briefly, selects his father as next speaker before moving on to his mother. By selecting his mother with his gaze as well as his shift into Japanese, Thomas signals that he has not received the assistance he needs from his father. His (other-)selection of his mother displays his expectation that she will be able to help him understand his father's query even though she was not present during the grilling activity. These repairs also position his mother, and often his aunt, as intersubjective facilitators who are tasked with clarifying the referents embedded in his father's questions and with contextualizing the underlying objectives of these queries. The accommodating actions provided by Mrs. Gardner and her sister are similar to the contributions of "language brokers" in multiparty interactions when they step in to clarify or translate the meaning of a previous speaker's utterance for non-native speakers (Bolden 2012).

A similar scaffolding pattern unfolds in the next extract. At dinner one evening, prior to the interaction below, Mrs. Gardner tells her husband that they must contribute money for a party in Thomas' classroom. Since she cannot remember the amount, she asks Thomas if the teacher "said anything" about the contribution. When Thomas replies that his teacher "didn't say anything", his aunt immediately responds in Japanese, "Really, he didn't say, but maybe he wrote [on the board]." His aunt is simultaneously making two points: one, that the teacher might have used a different modality to share this information, and two, that Thomas is often quite literal in his interpretation of his interlocutors' utterances. The Gardner parents agree, and then Mr. Gardner turns to Thomas with a question in line 01 below ("T-chan" is a nickname used by his family members).

Extract 3.

```
Clarification 52
01 Father:   T-chan maybe (.) tomorrow you could take a picture of the whiteboard.
02   Aunt:   Ah so [da ne.
             Oh right (emphatic).
03 Mother:         [So: da [ne:.
                    Oh right (emphatic).
04 Thomas:                 [Hh:n? ((Looks over at Aunt and Mom))
05   Aunt:   Ano kokuban ni- ano white [board,
             On the blackboard – on the whiteboard,
06 Mother:                             [Shashin o totte,
                                        Take a picture,
07         (0.4)
08 Thomas:   Yeah. Yeah. I can take a picture.
09    Dad:   Yeah? Good.
```

Mr. Gardner's directive to his son receives immediate uptake from his sister-in-law and wife, who support his suggestion. On previous occasions, Thomas has brought home photos on his phone that have captured information the teacher shared with the class. Unlike the previous extracts where Thomas' first attempt at initiating a repair addresses his father, here he addresses his aunt and mother. His open class initiator in line 04 (Hh:n?) could simply indicate that he has not been paying attention to the conversation; however, in the video of the interaction, Thomas turns to his father when he hears his name uttered (line 01). Mr. Gardner, as the speaker of the trouble-source turn, could have replied to Thomas. Instead, his aunt and mother both chime in with partial Japanese translations of Mr. Gardner's directive (lines 05–06). Thomas indicates that he will comply with his father's request, and his father then ends the sequence with a receipt token and a positive assessment before the family moves on to another topic. This case differs from Bolden's (2012) notion of language brokering in repair segments in that the trouble source is not produced in a language that Thomas has difficulty understanding.

Another night when the family is in the kitchen unpacking Chinese take-out meals, the Gardner parents are talking about the feasibility of Thomas taking public transportation to get home from school on his own.

Extract 4.

```
Clarification request 33
01 Dad:      So do you like taking the metro bus?
02     (0.8)
03 Thomas:   Yes,
04     (0.4)((Thomas turns to his aunt))
05 Thomas:   The: kitanai one?
                  dirty
06 Aunt:     Un, (hh) chotto ne. Nihon[no kirei da ne, [bus wa ne.
             Yeah, (hh hh) a little. The Japanese one is clean, the bus is, isn't it.
07 Thomas:                                            [Hai
                                                       Yes.
08     (0.4)((Thomas gazes at his father))
09 Thomas:   I still want to try.
10  Dad:     We:ll, (0.4) we'll see:, only during the day though.
11 Thomas:   Mm.
```

The above extract is one of many discussions that the family has held about the possibility of Thomas taking public transportation alone. In previous conversations, his aunt has made derogatory comments about the local metrobus and has referred to it as "kitanai" (dirty) and "abunai" (dangerous). After Mr. Gardner asks Thomas about the bus in line 01, Thomas hesitates before answering in the affirmative and then turns to his aunt to make sure he understands the referent, 'metrobus', in his father's question. His candidate understanding, uttered in a mixture of Japanese and English, 'the kitanai one', employs the same Japanese descriptor that his aunt has used in the past, thus indexing her previous disapproval. His aunt subsequently confirms but downgrades his appraisal of the bus and frames her assessment as a comparison to the clean buses in Japan. Her breathiness in the beginning of line 06 indicates incipient laughter, possibly displaying her slight embarrassment that Thomas has repeated her blunt description. After this confirmation, Thomas looks over at his father and takes a determined stance toward riding the bus, in spite of its unfavorable depiction (line 09: I still want to try). Here, Thomas implies that he is aware that his father disapproves of this idea. Mr. Gardner's hesitant response adds the constraint of daytime usage and re-voices the aunt's previous description of the bus as dangerous.

In the interactions above, Thomas' other-selections in Japanese directed to his mother and aunt initiate insert sequences in which he attempted to clarify the meaning of his father's utterances and deliver a response. In comparison, Thomas does not initiate repairs on the women's turns at talk as frequently. One reason might be due to the fact that they engage in more self-repairs than Mr. Gardner does when interacting with Thomas. Additionally, their questions are more often tied to the task at hand (e.g. "Could you put the salt on the table?"; "Are you almost done playing?"), whereas his father's questions tend to include more general queries about Thomas' involvement in past and upcoming events (e.g. "What will you do in Japan this summer?"; "Didja learn anything today (.) different from before?"). The latter types of requests for information are known to be more challenging for individuals with autism as these questions require the recipient to infer the speaker's intentions (Kremer-Sadlik 2004). Although not every trouble-source turn targeted by Thomas was a question, most were first-pair parts that necessitated a verbal or nonverbal response.

The fact that Mrs. Gardner is Thomas' primary caregiver, and his aunt has experience as an assistant teacher, might shed light on why they appear to put more interactional work into facilitating intersubjectivity in conversations with Thomas. In addition, Mr. Gardner often travels for his job, and his style of communicating with Thomas differs from his wife's accommodating actions. His approach of waiting out the repair-triggered insert expansions instead of contributing his own self-repair shows his preference for his wife and sister-in-law

to engage in these clarification routines. This participation framework reflects the division of communicative labor in this family, in which the two women position themselves as intersubjective facilitators. Thomas, through his other-selected repair initiations, displays his familiarity with his family members' different communication styles and effectively recruits the assistance he needs when he has trouble responding to his father.

4.3 Lack of uptake as a repair initiation strategy

There are several possible reasons as to why an addressee fails to respond to a previous speaker's first-pair part such as a problem related to hearing or understanding, an inability to respond, confusion as to how to respond, or a withholding of a reply to indicate disalignment or disagreement (Pomerantz 1984). When Thomas neglected to respond to an interlocutor, it was often treated by his family members as signaling that he did not understand or that he was disengaging due to what he deemed to be an unfavorable topic. Additionally, when Mrs. Gardner's utterances addressed Thomas in English, he sometimes failed to reply, even when the two were in close proximity. In these instances, his mother often initiated a self-repair by reformulating her initial utterance in Japanese. On some of these occasions, she prefaced her repair with "Ah dame" (Ah, that won't work) and then launched into Japanese. In a few other instances, she turned to me or to the camera and declared "Nihongo ne:" (Japanese, right). After she switched into Japanese, Thomas promptly replied. An example is below:

Extract 5.

```
No Uptake 4
01 Thomas: Kor:e, ((Puts bag of veggie chips on counter))
           This
02 Mother: You don't like it?
03         (3.4)
04 Mother: Mazui?
           Tastes bad?
05 Thomas: Mm.
06         (0.4)
07 Thomas: I'll take a carrot. ((Walks over to fridge.))
```

In the extract above, Thomas enters the kitchen, places the open bag of veggie chips on the counter and states emphatically, "This," in Japanese. His utterance introduces the topic of the chips, and his mother then asks in line 02 with questioning intonation, "You don't like it?". Thomas does not provide a response. After a few seconds pass, his mother asks in Japanese, "Tastes bad?" At this point, Thomas immediately confirms her assessment. A similar interaction on another afternoon occurs when Mrs. Gardner suggests that Thomas watch an online clip in order to sketch a series of animals.

Extract 6.

```
No Uptake 1
01 Mother: Did you look at youtube?
02      (2.0)
03 Mother: Did you find it?
04      (4.0)
05 Mother: Mii:ta?
           Did you see it?
06 Thomas: I found it.
07 Mother: ((Turns to researcher)) Nihongo ne: ((smiles)).
                                   Japanese right
```

In this interaction, Mrs. Gardner is initially unsuccessful in eliciting a response from Thomas with her first repair in line 03, which is a reformulation of her previous question. It is not until she issues a question in Japanese that she receives a reply from Thomas (lines 05–06). Mrs. Gardner then turns to me and comments, "Nihongo ne:", indicating that this is another case of Thomas prompting her to speak in Japanese. Thomas' aunt is also a native speaker of Japanese, but he did not react to her in the same way when she spoke English.

Extract 7.

```
No Uptake 5
01      ((Thomas shows his drawing to his aunt)).
02 Aunt:    What's tha:t.
03 Thomas:  Sunflowers.
04 Mother:  Ne, Thomas, do you want to study art in the future?
05      (3.2)
06 Mother:  Shorai ni (.02) biju[tsu=
            In the future   art
07 Thomas:                      [Shtai.
                                 I want (to)
08 Mother:  hh hh.
```

Thomas and his aunt often codeswitched in conversation, but I could not find any instances in which he withheld a response from her when she spoke in English with him. In the extract above, Thomas answers his aunt's questions, yet when his mother asks him about studying art in the future, he does not look at her or provide a response (line 05). After a few seconds, Mrs. Gardner starts to translate her previous utterance into Japanese, but before she completes her turn, Thomas overlaps with his response. His quick reply makes it clear that he heard and understood her previous query in English. In the final interview with the family, Mrs. Gardner told me that she realizes that Thomas gets annoyed with her at times when she speaks in English. She surmised that her English proficiency is not as strong as her Japanese and that Thomas has picked up on that. At the same time, she remarked that "he understands better in English so I try to speak it," and she points out that Thomas often has many problem-free exchanges with her in English. Both she and Aunt Sumi were puzzled, however, as to why Thomas treated them differently. His aunt noted, "He only does that to her, not to me, even though we speak the same," referring to Thomas' lack of uptake.

In another example, Thomas and his father are barbequing hotdogs outside one weekend when Thomas enters the kitchen to ask for rolls, which he plans to toast on the grill.

Extract 8.

```
No Uptake 12
01 Thomas:   Ja, rolls. ((entering kitchen))
             So,
02 Mother:   Hai, onegaishimasu. ((handing bag of rolls to Thomas))
             Yes, please take care of this.
03 Aunt:     Asoko (da) yo. ((points to a large plate on a shelf behind his mother))
             It's over there.
04 Mother:   Need a plate?
05         (2.6)
06         ((Father appears in the doorway to kitchen and looks in, and Thomas briefly
             gazes in his direction))
07 Thomas:   Plato hoshi (desu).
             I want a plate.
08 Mother:   Ah. Kore da. ((Hands him the plate))
                 Here it is.
09 Thomas:   Hai. ((Takes plate and heads outside))
```

Along with the rolls, Thomas is expected to take a plate out to his father for the hotdogs. His aunt first references the plate in line 03 while pointing to it. The plate is on a shelf behind his mother, who asks him in English, "Need a plate?" Thomas' lack of uptake to his mother's question signals a problem. After a few seconds, Mr. Gardner, who has been outside at the grill, appears in the kitchen doorway. Thomas glances at him and then reorients to his mother and states in Japanese that he wants a plate (line 07). While Thomas could have continued to wait for his mother to reformulate her question in line 04 ("Need a plate?") into Japanese, he instead addresses her in Japanese as if she had never produced this question. In this instance, a prolonged lack of uptake would have stalled the meal activity and left Thomas holding the bag of rolls while his father peered into the kitchen expectantly. In this case, Thomas takes the expedient route and provides a first-pair part in Japanese to prevent a communicative disruption from delaying him.

Mrs. Gardner's use of English was not always targeted as a problem by Thomas. To investigate further, I returned to the data corpus to examining instances in which Thomas responded promptly to his mother's first-pair parts spoken in English. Most of these interactions took place when: (1) they were under time constraints or focused on a goal-centered activity; (2) they talked about homework involving English language materials; or (3) they discussed information that Thomas might find difficult, if not impossible, to understand in Japanese. When I showed Thomas the video clips of Extracts 5 and 6, and asked him about not responding to his mother, he said, "She should speak Japanese." I also asked Thomas about his aunt ("Your aunt, too?"), but he just shook his head "no" and would not elaborate. Thomas' ability to use a lack of uptake as a repair mechanism to trigger his mother's use of Japanese is a clear example of how he

is not only aware of conversational norms and structures, but that he can employ them to manipulate the talk of his interlocutors and display his interactional preferences. His other-selected repair initiations that target his father's utterances also reflect his ability to alter the participation framework to his benefit.

Maynard et al. (2016) call for research that documents and analyzes the organization of participation in family interactions. In their a study in which they employed conversation analysis to examine one family's interactions in a clinical setting, they tracked the participants' interactional patterns and discovered that the two parents had different styles of communicating with their son ('accommodative' and 'conditional', respectively). These different approaches, however, allow the parents to work as a team to facilitate their son's acquiescence in a potentially conflictual interaction. The Gardners' divergent styles of communication reflect their different expectations and perspectives on how to interact with Thomas. When Thomas produces other-initiated repairs, his mother and aunt issue more repetitions, engage in codeswitching and use more nonverbal behavior in response. They display that they are more attuned to his needs when it comes to establishing intersubjectivity than his father appears to be. Although their styles of interacting with Thomas facilitate sequential progressivity, it is also important for Thomas to be exposed to his father's routine ways of interacting, which might be more similar to communicative styles he encounters outside his home. At the same time, the more researchers learn about autistic communicative norms, in general, and their bilingual practices, in particular, the better the training will be for clinicians, parents, and educators.

5. Conclusions

Repair segments are a critical arena for examining the ways in which participants work to overcome obstacles to mutual understanding and sequential progressivity in conversation. This article analyzed the other-initiated repair operations of a high school student with autism in his interactions with his family members, who possess varying degrees of proficiency in Japanese and English. Although the original research query hypothesized that Thomas' other-initiated repairs would target more Japanese utterances than English, this was not the case. Instead, the analysis of the data shows that the vast majority of Thomas' repair initiations targeted referential information in his father's utterances, and that Thomas often displayed a preference for Japanese in the case of his mother's utterances. As Yu (2016b, 25) notes, bilingualism is a "developmental resource" and an "interactional asset" that allows children with autism to socially engage, express affect, and fully participate in family life. Individuals with autism who are raised bilingually pos-

sess an additional vehicle for enacting and displaying coordination with their interlocutors, and doing 'typicality' even when other features of their speech or actions might deviate from the norm. More research that demonstrates these benefits should lead to a heightened recognition of the importance of and need for bilingual speech language pathologists and educators trained to work with this population.

Rather than focusing primarily on the communicative impairments associated with autism, researchers have called for studies that advance our knowledge of how individuals on the spectrum engage in conversation in ways that further interactions, even if these moves might be considered atypical (e.g. Bottema-Beutel 2017; Sterponi et al. 2015). Now that several clinical studies have demonstrated that bilingual input does not inhibit language acquisition in this population, the investigation of how individuals with autism and their co-participants employ multiple languages in interaction is of utmost importance. Taking a conversation analytic perspective allows us to attend to the sequential structure of unfolding talk and highlight the organization of communication when breakdowns emerge.

An important aspect of Thomas's ability to connect with his family members is the collaborative work they engage in together in attempting to understand one another. Yet while repairs are viewed by conversation analysts as interrupting the flow of conversation and inhibiting sequential progressivity, these moves also steer the conversation back on track when repairs are successful. In the interactions examined in this paper, Thomas' repair initiations are clear attempts to build an understanding of his interlocutors' previous turns. In some of these instances, Thomas shifts the participation framework in order to recruit assistance from other family members and manage communicative breakdowns in these conversations. Other-initiated other-repairs are considered to be highly unusual in everyday interaction (with the exception of a few marked contexts, see Bolden 2011, 2012); however, when produced by Thomas, these repair initiators display a preference for continuing the conversation and eventually producing a next relevant move.

Thomas has learned that his mother and aunt are willing participants in what I refer to here as 'intersubjective facilitation', which makes his other-initiated other repairs directed to them easier to understand. These acts of accommodation performed by Thomas' mother and aunt reveal a sense of empathy for and attunement with Thomas' perspective, which in turn, encourages Thomas to seek their assistance when he experiences confusion. In these situations, Thomas often issues a first-pair part in Japanese, which marks his mother and aunt rather than his father as recipients. For Thomas, speaking Japanese constitutes a resource for enacting affiliation and demonstrating that he is able to linguistically align with

his interlocutors. He also engages in codeswitching to shift the organization of participation in ways that are ultimately helpful for his continued engagement in an interaction. Studies of language alternation among neurotypical (or non-ASD) individuals have documented that a speaker can signal alignment by following a prior speaker's choice of language, and alternatively, shift into a different language to signal disalignment (Auer 1988; Li Wei 2002). The language choices Thomas makes indicate a sensitivity to the linguistic knowledge of specific interlocutors and follow similar patterns of language alternation for embodying dissension or contestation. These interactions reveal that bilingual proficiency provides him with 'semiotic agency,' a term Goodwin (2003b) employed to describe how an aphasic man with a three-word lexicon is able to recruit his family members into voicing and collaboratively constructing his contributions.

While this analysis is based on one case study, there are implications here for theories of perspective-taking, intersubjectivity, and the pragmatic abilities of individuals with autism *and* for parents and professionals making decisions about bilingualism and language use in therapeutic and home settings. Clinical researchers who conduct studies on autism as well as speech language pathologists and other professionals who work with bilingual clients with autism should rethink assumptions about the communicative challenges discussed in diagnostic guidelines. For example, individuals with autism are characterized as failing to provide enough detail for an interlocuter to identify the subject or discursive focus of their utterances (Tager-Flusberg et al. 2005). Yet Thomas targets his father's utterances and requests more specific information about referents, reversing the situation that has been documented in clinical research (Volden 2004). Thus, we must also recognize the ways in which 'neurotypical' interlocutors may fall short when attempting to provide sequentially relevant next moves in their interactions with individuals on the autism spectrum. The study of repair initiations made by the latter then becomes a crucial area of investigation for understanding how conversational breakdowns can be avoided.

There are also important implications for the relationships that these children and youth have with their linguistically diverse family members. Encouraging the use of the home language allows them to move from third person (being spoken about in another language) to first person in family discourse, from bystander status to ratified participant, in Goffman's terms. The practice of inclusion through linguistic access allows children with autism greater potential to embody connection with family members and develop mutual understanding. The ability to employ one's heritage language also fosters a sense of belonging, as linguistic features – phonology, morphology, syntax, lexicon – index specific interlocutors and meaning-making experiences that constitute everyday sociality.

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