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Investigating Bilingual AAC Practices in Bilingual Communities

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Investigating Bilingual AAC Practices in Bilingual Communities

A Thesis Presented

by

JOHANNA R. SALISBURY

Submitted to the Graduate School of the University of Massachusetts Amherst in partial
fulfillment of the requirements for the degree of

MASTERS OF ARTS

May 2022

Speech-Language Pathology

Investigating Bilingual AAC Practices in Bilingual Communities

A Masters Thesis Presented

By

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ABSTRACT
INVESTIGATING BILINGUAL AAC PRACTICES IN BILINGUAL
COMMUNITIES

MAY 2022

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This thesis investigates best practices for teaching and supporting bilingual augmentative and alternative communication (AAC) users as they develop their communication skills. Although there are guidelines that inform best practices for teaching and supporting bilingual AAC users, there is very little information on what these practices look like. This thesis investigates the techniques and strategies that bilingual speech-language pathologists (SLPs) who practice in Catalunya, a bilingual community in northeastern Spain, use to evaluate, teach, and support people who use pictogram-based AAC modalities to communicate.

To do this, six SLPs who practice in Catalunya participated in interviews regarding their practices when teaching bilingual AAC users. These interviews were analyzed thematically, based on an iterative, inductive coding process. Analysis revealed that most bilingual AAC users have access to an AAC system in only one language of the

community. This may reflect a monolingual mindset (Tonsing & Soto, 2020), and limits the opportunities for engagement with both the larger community, and the individuals' home communities. This is particularly true for those who speak a language other than those of the community with their families. Despite this, AAC users seem to understand both languages, develop bilingual identities, and "feel bilingual." Additionally, despite the lack of access to multilingual AAC systems, professionals employ practices that show respect for the home language, whether it is Castilian Spanish, Catalan, or another language. The results suggest that the monolingual mindset is a deeply-ingrained part of educational and therapeutic systems in both monolingual and bilingual communities, even when individual practitioners respect and value their clients' home language(s) and bilingual identities.

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CHAPTER 1

AAC, BILINGUALISM, AND CATALUNYA

1.1 Introduction

Augmentative and alternative communication (AAC) is used to enhance communication in people who are unable to reliably communicate using speech. Broadly, AAC can include unaided modalities, like manual gestures, and aided modalities that can range from writing or typing to icon-based speech generating devices. Individuals who use AAC may or may not use it as their primary mode of communication, and have a wide variety of ability profiles, including, but not limited to cerebral palsy, autism, genetic syndromes, degenerative disease, intellectual disability, stroke or brain injury (ASHA, n.d).

The right to AAC is protected by the Communication Bill of Rights, a document created by the National Joint Committee for the Communication Needs of Persons with Severe Disabilities in 1992, and updated in 2016. The Communication Bill of Rights recognizes the rights of people with severe communication disorders to participate fully in daily routines and social interactions, something that requires many to have access to AAC. As the number of bilingual people in the United States increases, it follows that the number of bilingual people who need AAC to communicate would increase as well (US Census Bureau, 2019). However, there is a notable lack of research on bilingual AAC use, and, importantly, very little empirical evidence on how to support bilingual AAC users (Soto & Yu 2014).

The goal of this thesis is to begin to fill in some of the gaps in research on bilingual AAC use and treatment, and work towards understanding how to best support

the development of language and communication skills in bilingual individuals who use AAC systems. In an attempt to meet this goal, this thesis will investigate the practices of speech-language pathologists working with bilingual AAC users in Catalunya, a bilingual community in the northeast of Spain. Although the literature on bilingual AAC is sparse, there are important insights to be gleaned from the available work on bilingualism and developmental disabilities more broadly.

1.2 Bilingualism and Developmental/Language Delays

The long-held belief that children with developmental delays will struggle more from exposure to more than one language has been discounted by several studies, which have shown that children with developmental conditions, including autism, Down Syndrome, and developmental language disorder (DLD), experience no ill effects from dual language exposure (e.g., Durán et al., 2016; Kay-Raining Bird et al., 2016; Gutiérrez-Clellen et al., 2009). These children can become competent bilinguals within the limitations set by their developmental conditions, although they may require more time to learn their second language, and benefit from support from speech-language pathologists in both their languages (e.g., Kay-Raining Bird et al., 2016).

Because only 8% of ASHA-certified speech-language pathologists self-identify as bilingual providers, it may not be possible to provide direct services bilingually; however, taking parent language choice into account, and respecting the family's language and culture is key to success (ASHA, 2021; Soto & Yu, 2014; Wagner, 2018). This is due in large part to the importance of parent engagement; when parents feel that their language, culture, and decisions are respected, their participation in treatment increases, and the

child's risk of first language attrition lowers, thereby facilitating the parent-child relationship (Mindel & John, 2018; Wagner, 2018). Respect for the parents' language, culture, and decisions encourages parent involvement with their child's communication system, and allows them to be active communication partners with their child. This allows the child to maintain communication with their immediate family, as well as with their broader community, in the language of that community.

Maintenance of the child's first language is also vital for a bilingual child's success in developing communication skills (e.g., Yu, 2018). There are several reasons for this, both in terms of language development and social development. Firstly, a bilingual child with a developmental delay that impacts their language benefits from a strong model of spoken language from their caregivers. What language this is does not matter; what is important for the child's language development is that they are exposed to a variety of grammatically correct utterances in any language. A strong foundation in the language spoken at home provides a strong foundation for learning a second language (e.g., Yu, 2018). Equally important is social belonging: bilingual children with developmental delays need to communicate bilingually in order to be part of their family unit and their community. Communication between parents and children is essential for building strong, lasting bonds; if bilingual parents choose to speak only the societally dominant language with their children rather than their first language, communication within the family becomes more difficult. Language use signals social status and belonging, and without the ability to communicate in both the language of their community and the societally dominant or majority language, bilingual children with

language delays risk social isolation (McNamara, 2018; Mindel & John, 2018; Wagner, 2018; Yu, 2016; Yu, 2018).

1.3 Code-Switching and Developmental/Language Delays

Code switching is a key social component of bilingualism. It is a sophisticated linguistic process employed by bilingual individuals in conversation for specific purposes. While there is some debate surrounding the rules and purposes of code switching, it is a systematic process that demonstrates knowledge of the morphosyntactic and pragmatic rules of both languages (e.g., Gutiérrez-Clellen et al., 2009). There has been little research on code switching among bilingual people who use AAC systems to communicate, although there is research into code switching among bilingual children with and without developmental and/or language disorders.

Ponce-Lawler (2017) identifies four basic types of code switching that bilingual children use when speaking their second language: equivalence, or choosing to use an element from their first language to replace an equivalent element in an utterance in their second language; floor-holding, which occurs when a child cannot remember a word in the language they are speaking and uses one from their other language to avoid a gap in conversation; reiteration, or clarification; and conflict control, in which the child switches languages to avoid confusion for the listener. Equivalence and floor-holding are similar, but differentiated by pragmatic intent--in equivalence, the speaker is choosing to code switch intentionally and for effect, while in floor-holding they code switch to avoid losing their turn in conversation because they do not know a word in the language of the conversation.

Yu (2016) identifies five types of code switching that bilingual children use when speaking their first language: clarification and emphasis, where a change in language is used to signal importance; ending participation, or terminating an interaction by switching languages; making an appeal, where the appeal is highlighted by a switch in language; commenting on one's own knowledge or state, wherein the speaker removes themselves from the task they are carrying out by switching languages to comment on their performance; and quotation, or changing languages to highlight that they are quoting someone else.

Bilingual children with developmental delays that impact their communication abilities have been shown to perform similarly to their typically developing bilingual peers in using the pragmatic functions of code switching: both Ponce-Lawler (2017) and Yu (2016) included typically developing bilingual children and bilingual children with developmental delays in their studies. Yu (2016) found that the child in her case study, who has an autism diagnosis, was proficient in four of the five types of code switching that she identified--he was not observed using code switching when quoting reported speech. However, Yu points out that this child struggled with quoting reported speech in any language, and thus this limitation was not specific to code-switching.

Furthermore, Gutiérrez-Clellen et al. (2009) found that code switching is influenced more strongly by the linguistic environments that a child is exposed to than by the child's developmental status; bilingual children were more likely to switch from Spanish to English, suggesting that code switching was influenced by the sociolinguistic context in which the interaction takes place. Gutiérrez-Clellen et al. also found that children with developmental language disorder followed the grammatical rules governing

code switching in intrasentential contexts. The fact that children with developmental delays are able to master code switching in most of the same contexts as typically developing bilingual children suggests that their ability to learn and use two different languages is not inhibited by their developmental disability.

A study by King et al. (2020) further supports this, finding that bilingual children with and without developmental language disorder (DLD) are able to switch languages using high-tech AAC systems. It is important to note that the children in this study did not use AAC as their primary mode of communication; they were trained to use Proloquo2Go for the study. However, King et al. found that the children in the study switched languages following the same parameters; processing speed played a more important role in their ability to switch between languages using an AAC system than language ability or experience.

1.4 Bilingual AAC Use

Current guidelines for AAC for all those who use AAC to communicate, whether monolingual or multilingual, are guided by the Communication Bill of Rights, which supports an individual's rights to access and participate in communication, particularly as it relates to their own lives (Brady et al., 2016). This includes an individual's right to AAC technology and devices, as well as their right to learn to use these devices effectively. This means that AAC instruction should be centered on functional communication, and should involve real-world, social applications of communication, with responsive communication partners. Instruction should be centered around what the individual receiving services wants and needs (Brady et al., 2016).

Light (1989) proposes four key components to proficient AAC use, or communicative competence. These are *linguistic competence*, or knowledge of the language spoken, *operational competence*, or knowledge of the communication system in use; *social competence*, or the ability to act, react, and speak appropriately in social situations; and *strategic competence*, or the ability to use what one knows or has access to in order to fill gaps in knowledge or communication. Light states that these are dynamic concepts, and that AAC proficiency is therefore situationally and contextually dependent.

Although the guidelines above are largely based on monolingual AAC users and their experiences, they are a good starting point when discussing bilingual AAC use as well. Light (1989) cites social competence as one of the four key components to AAC competency. In bilingual communities, code switching is a social norm and necessity; it signals belonging and is used to mediate conflict and relationships. As a key social component of bilingual communication, it is vital for a bilingual AAC user to have the ability to switch between languages as their social situation demands. Similarly, Brady (2016) advocates for the importance of natural social communication; access to two languages is natural to bilingual children.

It is also important to consider the cultural and linguistic contexts in which AAC is being used. As Tonsing and Soto (2020) point out, AAC does not occur in a vacuum, and language is often a fraught topic, as it deals with issues of identity, power, and marginalization. Cultural and familial attitudes towards language, as well as policies that govern the language of public education, influence the language choices multilingual families make for their children, particularly if one of their languages is marginalized in the community where they live. The role that different languages may play in their

clients' lives is a key point for AAC interventionists to consider, and professionals working with bilingual or multilingual AAC users should embrace the use of all the language resources that the individual makes use of (Tonsing & Soto, 2020).

Additionally, attitudes towards bilingualism and disability may also impact an individual's access to bilingual instruction; educators often recommend English-only special education programs for bilingual children with disabilities, ostensibly to avoid language confusion (Cioè-Peña, 2020). This monolingual mindset reflects the monolingual ideals in education, limiting the child's ability to engage fully with their linguistic and cultural background, and therefore, their linguistic and cultural identities. This mindset also limits their opportunities to fully engage in academics (Tonsing & Soto, 2020). Ensuring that all bilingual individuals have access to both their languages, whether oral or via an AAC system, is a right, not a privilege (Cioè-Peña, 2020).

Given the rising number of bilingual and bicultural communities and individuals in the United States, it follows that speech-language pathologists can expect an increase in bilingual clients with complex communication needs, including clients who need an AAC device to communicate. The number of Spanish-speaking bilingual individuals alone in the United States has increased by 4.5 million between 2010 and 2018, and 13.5% of United States residents over the age of 5 years speak Spanish at home (US Census Bureau, 2019; Instituto Cervantes, 2021). As such, practical guidelines for speech-language pathologists who work with bilingual AAC users are increasingly necessary.

The guidelines for speech-language pathologists (SLPs) working with bilingual AAC users in the United States are largely based on research conducted on the development of bilingualism in children with and without developmental language delays, synthesized with different research conducted on AAC use and practices. These guidelines support access to bilingual, culturally appropriate AAC technology, and treatment in both languages when possible. They also advocate for respect for first language and culture in assessment and treatment, as well as caregiver involvement in the selection of goals, as well as AAC icons and words (McNamara, 2018; Wagner, 2018, Mindel & John, 2018; Soto & Yu, 2014).

While these guidelines align with current research on bilingual language development, there is very little empirical evidence supporting current practices with bilingual AAC users. This thesis seeks to begin to fill this gap in the literature by examining AAC practices within a bilingual community, specifically Catalunya, a bilingual area of Spain.

1.5 Catalan/Castilian as a Model

Catalan is spoken in northeastern Spain, in the regions of Catalunya and Valencia, and in Spain's Balearic Islands, where it is co-official with Castilian Spanish. Catalan has a history of oppression--from 1939 to 1975, during Francisco Franco's fascist regime, Catalan was banned from public use. During Franco's time as dictator, Catalunya became a diglossic community, where Catalan was the "low" dialect; speakers were prevented from using it publicly, publication in Catalan was largely prohibited, and it was not taught in schools or used in commerce (Woolard & Gahng, 1990).

Following Franco's death in 1975, and the subsequent fall of his regime, Catalan has become a source of pride, identity, and social cohesion for Catalan speakers in Spain. Various policies have been put in place, beginning with the 1979 referendum granting Catalunya the status of an autonomous community within Spain, and the passage of the Linguistic Normalization Law in 1983, which reinstated Catalan as an official language in Catalunya (Edwards, 2016; Woolard & Gahng, 1990). Throughout the 1980's and 1990's, the education system played a key role in the revitalization and maintenance of Catalan: an important part of the Linguistic Normalization Law required Catalan to be the primary language of instruction in all statutory schools in the region.

Newcomers to the region are expected to learn Catalan; it is one of the key factors in integration into Catalan society (Edwards, 2016). Following an economic boom in Catalunya in the early 2000's, immigration to the region increased: the percentage of immigrants living in Catalunya rose from 2.9% in 2000, to 15.95% in 2010 (IDESCAT, 2014 in Edwards, 2016). As the population of immigrants in the region increased, the government made conscious efforts to help newcomers integrate into their new communities; schools tended to have equal percentages of children of immigrants making up their student bodies in an attempt to decrease isolation. Doing this also shifted the responsibility of intercultural learning from the children of immigrants and their families to the community on the whole (Edwards, 2016).

Learning Catalan is essential to family and community life in Catalunya, but learning Castilian Spanish is also important for cultural, educational and economic opportunities in Spain. While mainstream education is primarily conducted in Catalan, students in the region are expected to learn Spanish, and receive 25% of their educational

instruction in Spanish. Additionally, official government communications and signage are expected to be provided in both languages (Viçens, 2020).

According to Catalan law, all students in mainstream classrooms in Catalunya must be given a bilingual Catalan/Castilian Spanish education; this is true for children with and without communication disorders (Lleonart Sitjar & Rodríguez Rabaneda, 2019). However, the regulations around speech and language services for individuals with communication disorders are less clear. Best practice in Spain is similar to best practice in the United States: ideally both languages will be used in treatment, but when that is not possible, both languages should be respected and encouraged (Nieva et al., 2020). It is unclear, however, if this is the case in practice in Catalunya; preliminary conversations with speech-language pathologists working with a variety of individuals with complex communication needs, including AAC users, yielded a range of approaches: some emphasized bilingual AAC use, while others tended to focus on one language or another, at their students' families' request.

1.6 The Current Study

This study investigates the evaluation practices, teaching techniques, and principles of AAC system organization of bilingual speech-language pathologists working with individuals who use pictogram-based AAC systems in Catalunya. It also explores themes of receptive and expressive bilingualism among AAC users within the region, professional practices for selecting AAC device language(s), and communicating and collaborating with the families of AAC users, including those whose primary language is neither Catalan, nor Castilian Spanish.

In this thesis, “bilingual” is defined using a functional, needs-based model; a person who is considered bilingual needs to use or understand more than one language to function successfully in their home, school, work, and social lives (Kohnert et. al., 2021). This means that, in this thesis, “bilingual” will refer to individuals whose caregivers speak a language other than Catalan, or in addition to Catalan (including Spanish). This thesis will focus on pictogram-based AAC systems, which are aided communication modalities. These modalities may be high-tech, like speech generating devices, or low-tech, like Picture Exchange Systems (PECS), or communication boards; may or may not be the individual’s sole mode of communication; and may be in one or both of the individual’s languages.

1.7 Research Questions:

Broadly, this thesis investigated how speech-language pathologists in bilingual communities, like Catalunya, teach children with complex communication needs, and their families, how to use pictogram-based AAC apps, devices, and light-tech systems in the languages of their community.

Specifically, the following questions were examined:

1. How is language proficiency in one or both of the languages of the community assessed?
2. How do professionals who work with bilingual AAC users teach them to use their communication systems effectively? What techniques do they use to encourage AAC use within the clients’ or students’ home, as well as at their school or day center?

3. Are AAC devices typically used in both languages of the community? If not, how is the language of the device selected? What considerations are made when the user's home language differs from the language of instruction? In AAC users who use bilingual devices, what does language switching look like?

CHAPTER 2 METHOD

2.1 Design

This study is a qualitative analysis of semi-structured interviews using an exploratory approach to both interviewing and coding. Interviews were guided by researcher questions, as well as by interviewee responses. Codes were generated inductively, based on reviewing the transcripts of the interviews. The methods for generating and refining codes are described in more detail in the following section.

2.2 Participants

This study is made up of six interviews with bilingual professionals who work with bilingual AAC users in Catalunya. All participants provided bilingual AAC services in speech-language pathology. Four of the six worked in special education schools that serve individuals between the ages of 3 years and 21 years. Two of the six worked in day centers for adults with cerebral palsy, stroke, traumatic brain injuries, and other conditions that affect their ability to communicate effectively. Three considered Catalan to be their first language, two considered Castilian Spanish to be their first language, and one considered both Catalan and Castilian Spanish to be their first languages. Participants are listed in Table 1 below. All participants are referred to by their preferred pseudonyms, as indicated during the consent process.

Table 1: Participants

Pseudonym	Population Served	First Language(s)
Lola	Children	Castilian Spanish
Lidia	Children	Castilian Spanish
Maite	Children	Catalan
Anais	Adults	Catalan
Cristina	Children	Catalan
Anna	Adults	Castilian Spanish & Catalan

Participant pseudonyms, the population they serve, and their first language

Recruitment primarily used snowball sampling to find participants. The student researcher reached out to stakeholders in Catalunya, including SLPs, special educators, and parents of children who use AAC, as part of the development of the interview protocol for this thesis. Several of these stakeholders expressed interest in participating, and in sharing information about the interviews with their colleagues. The student researcher reached out to contacts in Catalunya via email with recruitment information, which were then forwarded to potential participants. Participants filled out a brief questionnaire to determine eligibility for participation in the study. The questions included information about where and with whom they worked, the languages used in their workplace, their preferred language, and the types of AAC systems they worked with.

2.3 Procedure

Following completion of the questionnaire, the graduate student researcher contacted eligible professionals by email to schedule an interview. Interviews were 30-60 minutes long, and were conducted in the participants' preferred language--typically Catalan--in a private Zoom room. Interviews were audio recorded, and sent to a professional transcription service after each interview. Transcripts were then stored in a secure electronic folder.

Interviews were guided by an interview protocol (Appendix A), as well as by participants' input. Participants occasionally brought up topics, ideas, or experiences that were not explicitly mentioned in the interview protocol, but were of interest to the project. The graduate student researcher encouraged and explored these topics as long as they fell within the scope of the research questions.

2.4 Interview Protocol Development

The interview protocol used in this thesis was developed following the above review of the literature, as well as preliminary conversations with experts and stakeholders in bilingual AAC in Catalunya and the United States. These experts included speech language pathologists who provide services bilingually, as well as parents of children who use bilingual AAC systems. The input from stakeholders was particularly useful, as they provided information about bilingual AAC in Catalunya--there is very little literature on this topic.

The interview protocol was designed to elicit stories and anecdotes that exemplify participants' typical practices when working with AAC users. Key themes of the

interview protocol included how a client's language preference and abilities are determined; how AAC is taught and how its use and generalization is supported; how languages other than Spanish and Catalan are accommodated in speech and language therapy and education; and how language switching is accommodated in bilingual AAC users.

Demographic questions for participants included questions about their typical client populations: ages, diagnoses, home language(s), and language abilities, as well as the capacity in which they work with the client, and the role they play on the client's treatment team. Other questions focused on clinician language history; this included questions about their home language or languages, which language or languages they grew up speaking, and in which languages they provide services.

Feedback on the interview protocol was given by the thesis committee, who provided valuable insights into the wording of questions. Feedback was also given by an expert in qualitative research methods and analysis at the University of Massachusetts Institute of Social Science Research, which focused on the type of responses each question was intended to elicit. Because this interview protocol is intended to elicit anecdotes rather than general statements about the populations the clinician works with, the wording of questions was adjusted to ensure these kinds of responses.

2.5 Coding Process

Interview transcripts were coded in their original language to avoid losing nuance in translation. Coding was inductive and iterative, involving three rounds of coding. In the initial open coding phase, three of the six interviews were coded independently, using

the comment function in Microsoft Word. These codes were organized into categories to develop a code book (Appendix B), based on themes that emerged during the open coding process. In the second round of coding, the codebook was then applied to all six interviews, and was refined after completing coding for each interview; redundant codes were removed, the language of codes was edited to more accurately reflect the content, and relevant codes were added where necessary. The final round of coding was carried out using NVivo software so that the coded transcripts could be subsequently analyzed using the query features in NVivo. Finally, unused codes were removed from the final codebook; this happened because some codes that appeared to represent themes did not appear as frequently as the researcher expected, or the data that were originally assigned to the unused codes fit a different code better.

2.6 Analysis Process

To analyze the coded interviews, the student researcher compiled a list of codes necessary to answer the research questions. The codes were subsequently grouped by which research question or questions they addressed, and then further divided into groups by subtheme.

Data were analyzed using NVivo coding and analysis software. Codes were most frequently analyzed using a crosstabs matrix analysis, which provided the references for each code, sorted by interviewee attribute. Because meaningful differences in practices based on client population (children aged 3-21 vs. adults 21 and older) emerged, data were typically divided based on this attribute.

Codes were analyzed based on convergences and divergences between interviewees with similar attributes, as well interviewees with different attributes. They were also analyzed based on areas of overlap between codes, and shared codes across interviewees. The results of these analyses are described below.

CHAPTER 3 RESULTS

3.1 Research Question 1

How is language proficiency in one or both of the languages of the community assessed?

3.1.1 Theme 1.1 Formal Evaluation Measures

Each of the four interviewees who work with children mentioned using the Communication Matrix (Rowland 2011) as a formalized framework to characterize students' language and communicative abilities. This allows them, in the words of one participant, "to objectively evaluate the student's communicative conduct." The Matrix is available in a variety of languages, including Castilian Spanish, making it an accessible resource for parents and professionals. According to Lola, professionals at the school often fill out the matrix if they know the student well. When students are newer, the family is more involved in filling out the matrix. This is discussed in greater detail below.

One interviewee also mentioned using the Clinical Evaluation of Language Fundamentals-4 Spanish Edition, or CELF-4S with older students, who demonstrate more advanced expressive and receptive language skills (Semel et al. 2006).

3.1.2 Theme 1.2 Qualitative Observation

Three of the four interviewees who work with children also mentioned observation as a component of their evaluation process. Observations allow them to determine how the student interacts with their surroundings, the degree of support they need to communicate their wants and needs, and, in some cases, the language that the individual responds best to.

One interviewee also described taking an informal communication sample, which they take part in as a clinician. They use this as an opportunity to determine what they need to do to stimulate communicative intent in the student, and build rapport with them during the evaluation process.

3.1.3 Theme 1.3 Discovering Abilities

Three of the six interviewees discussed discovering clients' communicative abilities as an important part of their evaluation process, particularly when they are setting goals for their clients or students. One of these interviewees works with adults, and the other two work with children.

The interviewee who works primarily with adults mentioned that her clients typically come to her with a large amount of standardized assessment information on their communication abilities, making standardized evaluation less of a priority for her clients. Instead, her evaluation process relies more on a qualitative understanding of how clients use their communication skills, and the situations in which they use them, rather than obtaining quantitative data describing their abilities.

The interviewees who work with children discussed discovering student abilities as an important component of setting goals and developing a program of study for their students. All interviewees who work with children describe their programs as highly individualized, depending on the student's needs and abilities. Understanding the students' unique profile of abilities and needs allows them to select appropriate goals for the students' cognitive and linguistic abilities.

Both interviewees who work with children discussed systems to classify students' abilities. Lola and Cristina both discussed similar systems of classification for their students' cognitive and linguistic abilities. Cristina uses a system that classifies children based on their developmental age. Lola discussed three levels of interaction that students have with the environment around them: type A, where a student's only interactions are exclusively via their own sensory perceptions of the environment around them; type B, where a child is able to interact with items and people in the environment with support from an adult; and type C, where the child is able to independently interact with the environment. Understanding where a child falls on this continuum can help the speech therapist understand where the child's goals should be focused moving forward. The observations, along with the results of Communication Matrix (Rowland 2011) and any other standardized assessment measures, are used to place students within these classifications. Then, the goal, in the words of Lola, is *l'anar avançant sobre la proposta que fa la pròpia matriu*, "to move them along according to what their own matrix says," or as Cristina said, to know *a quin nivell, amb quin objectiu introduïem* "which level, and with which goals" to start.

3.1.4 Theme 1.4 Role of the Family in the Evaluation Process

Two interviewees, both of whom work with children, discussed the role of the family in the evaluation process. When the student has been at the school for several years, the professionals rely less on family input, as they know the student fairly well already. However, when the student is newer, the family's role in the evaluation process is important, as it gives the professionals at the school a more robust understanding of how the child communicates in familiar settings, with familiar communication partners,

and provides more information about the language or languages used at home. It also provides an opportunity for contact and collaboration with the family early in the process.

Maite also discussed the additional information that families can bring to the evaluation, namely medical records and reports from private speech-language pathologists and other professionals who are involved in the child's care.

3.2 Research Question 2

How do professionals who work with bilingual AAC users teach them to use their communication systems effectively? What techniques do they use to encourage AAC use within the clients' or students' home, as well as at their school or day center?

3.2.1 Theme 2.1 Support Techniques for Parents & Care Partners

Three interviewees who work with children commented on support techniques that they teach the parents and guardians of their students. Maite described meetings between guardians and the child's education team, where information is often exchanged on both sides:

Moltes famílies tenen ja la seva manera, el seu sistema. I llavors intentem dir doncs, mireu tenim la llibreta, nosaltres ho fem així com ho feu a casa perquè a vegades són maneres diferents però la cosa és que se sumi tant a casa i com ho fem nosaltres.

“families often have their own ways of doing things. So we tell them ‘look, here’s the book, this is how we use it. How do you do it at home?’ Because sometimes there are different ways to do it, but the [important] thing is that what we do [and what they do] at home adds up.”

Two interviewees who work with children and one who works with adults mentioned modeling. All three discussed the importance of teaching families how to

model using an AAC system at home, as well as using it themselves at the school or center where they work. Doing so provides the person using the device with both visual and auditory input to expand their communicative abilities.

Maite describes meeting with families to discuss modeling practices as a mutual learning experience, as “families often have their own way of doing things.” The professionals at school share how they use the student’s AAC system, and the family shares how they communicate at home. This allows both groups to discover more effective ways to support the student’s communication in both environments, and encourages the family to actively engage in communication activities with the person who uses AAC. This develops communication skills, not only in the person using AAC, but also in their home communication partners.

Anna focused on adults who are using AAC for the first time, and describes the advice she gives families:

És [...] modelatge el que aconsellem a l'entorn de les famílies. Si aquella persona parteix de zero, clar. Modelant, modelant fins que aquella persona comenci ja a fer-lo sentir

“advise[s] families to model, if the person is starting from zero [with the AAC system]. Model and model until the person is able to get a feel for it.”

Lidia, who works with children, also discusses modeling as a way to support both receptive and expressive language:

Sobretot el que acostumo a demanar és que [la família] modelin, que facin ús del modelatge, per fer ús dels pictogrames i per no donar només una entrada de llenguatge o de comunicació que sigui només l'oral, sinó que s'ajudin amb pictogrames per donar un suport més físic, més visual per poder ajudar a la persona a etiquetar tot el que té al seu voltant, a poder comprendre tot aquest vocabulari que escolta però que potser és més difícil només amb una entrada

d'informació que sigui l'auditiva, perquè pot ser com massa.

“What I ask for the most is that [the family] model[s], that they make use of modeling, to put the pictograms to use, and to give another means of language or communication input, that's not just oral. Pictograms give more physical and visual support, to help the person label everything around them, to understand all the vocabulary that they hear, but might be harder [to understand] with only auditory input.”

Modeling, therefore, is an important tool for the families of both children and adults who use AAC systems to communicate.

Cristina discussed the importance of working with the families to continue to use their child's AAC system at home, as a means of developing autonomous communication skills, including initiating exchanges rather than simply responding to questions:

Això és una miqueta el que amb les famílies anem intentant treballar de dir: està molt bé que tu l'entens però hi ha moments que també guanyen autonomia i guanyen la seva capacitat expressiva podent explicar el que ell vol, no el que tu li preguntis. Perquè si no sempre els nostres alumnes acaben sent pacients o receptors de la conversa que tu iniciis o de la conversa que tu preguntis o la conversa que tu vulguis, no? I aniran contestant sí o no i no iniciaran i per iniciar pues has de donar tu l'oportunitat de poder iniciar conversa.

“That's a little bit of what we work on with the families, saying ‘it's great that you understand him, but there are moments where he needs to gain autonomy, and the capacity to express what he wants to, not what you ask him.’ Because if not, our students end up being receptors of questions that you ask, or conversations that [someone else] initiates, don't they?”

3.2.2 Theme 2.2 AAC Use in Different Environments

Two of the interviewees who work with children discussed encouraging AAC use in the home as well as in the classroom. Both expressed that collaborating with the families to ensure that AAC is available at home as well as at school is important to developing their expressive language.

Lola described one of the practices at her place of work for encouraging integration of AAC at home:

L'alumne indica [ho que va fer aquest dia] sobre el seu ajut de baixa tecnologia, perquè no utilitza encara alta tecnologia, i aleshores, tal com ho va indicant, nosaltres amb un portal que es diu anem escrivint la frase en signes. Los que ell diu. I aleshores l'imprimim i l'enganxem a l'agenda [per a la seva família].

“The student tells us [what they did that day] using their light-tech device [...] and as they're telling us, we're writing the phrase in pictograms. Just what they're telling us. Then we print it and send it home in their agenda [for their family].”

The purpose of this is to help familiarize the families with the pictograms, and facilitate communication between the student and their guardians.

One interviewee who works with adults also discussed the use of AAC in the home and at their day center. Anaïs described the practices of a native speaker of Arabic, who has some oral approximations. This individual uses her AAC outside the home, exclusively in Catalan, to communicate with unfamiliar listeners. Her family understands her oral approximations; Anaïs also reports that she is often able to understand this individual's approximations as well. This highlights the range of communicative abilities that people who use AAC can exhibit.

3.2.3 Theme 2.3 Shaping & Selecting Activities

One interviewee who works with children and one who works with adults discussed shaping activities to meet their students' or clients' goals. Cristina, who works in a school, discussed her role in the classroom:

No fem sessions individuals en els alumnes [...] Estem a dintre de l'aula amb la tutora per donar totes les estratègies comunicatives, per anar moldejant les activitats perquè totes les activitats són comunicatives i quan més experiències

comunicatives millor per al nano com més utilitzin el plafó dintre de l'aula millor, més avançarem. [...] tenim aquesta mirada més de la logopèdia dintre integrada dintre de les sessions de les aules per anar donant també aquest moldejament també a l'educadora, a la tutora, a la fisio, a tota l'equip interdisciplinar

“In my school, we don't usually do individual sessions with students [...] We're in the classroom, with the teacher, to give all the communication strategies, and to shape the activities, because any activity can be communicative, and the more communicative activities, the better for the child, because the more they use their device in the classroom, the more they advance. [...] So we have sessions in the classroom to help train the teachers, and the physical therapists, and the whole interdisciplinary team.”

Two interviewees, both of whom work with children, discussed structuring and shaping routines into communicative activities. Cristina described hand-washing, a frequently occurring activity during the pandemic, as an opportunity to practice communication in a routine, particularly when it comes to giving the students choices. This can inform later decisions regarding students' goals:

Si li dono una cosa, anem a treballar una funció comunicativa que pugui escollir alguna cosa, que em pugui després dir alguna cosa.

“If I give them something to work on choosing something as a communicative function, that can then tell me something [about the approach we should take].”

Lidia talked about responding to students' wants and needs as part of a routine that supports language generation:

Quan han escollit allà que volen, ho introduïm dins d'una frase. Llavors, si volen una pilota per jugar, doncs ho portem - agafem el pictograma i el posem a una frase on diu, “Vull” i llavors hi ha un espai on - i ells posen el que volen, per començar a combinar elements per construir la frase

“when they choose what they want, we put it into a phrase. So if they want a ball to play with, we take the pictogram and put it in a phrase that says ‘I want,’ with a

space, and they put what they want there, to start combining elements to build a phrase.”

This is done consistently as a way to show students visually how to combine different words, and construct sentences to communicate wants and needs.

Two other interviewees who work with children also discussed structured activities in a similar way. They use structured activities to promote language generation among their students. Structured activities include playing highly structured games, as Lola described, as well as consistently providing a model using the AAC system as well as oral language. Maite used the AAC system in addition to oral language to provide two modes of input for the student.

3.2.4 Theme 2.4 Programming & Individualization

Five of the six participants mentioned individualized programs in their interviews (4 who work with children and 1 who works with adults). This was in regards to language selection for both devices, and instruction, as well as in regards to practices used for specific diagnoses. General consensus is that practices change according to the needs of the client or student; there is no one practice that works with all people who use AAC.

Maite summed it up well:

Depèn del nen saps què... i de com està i en el moment comunicatiu en el què està. Pues saps que podràs fer servir unes coses o unes altres.

“It depends on the child. It depends on where [they] are at the moment of communication. Then you can use [this technique] or that one.”

According to the interviewees who work with children, this is largely due to the wide range of diagnoses and abilities among students.

3.2.5 Theme 2.5 Narrative Skills

Two interviewees who work with children mentioned working on narrative skills.

According to Lola, this is because:

És lo primer que fem tots. “Vull això, vull allò altre, vull això, vull això, mare, vull això, vull això.” Però, clar, això no és real. No és només això.

“The first thing we teach [people who use AAC] is ‘I want this, I want that, I want this other thing, Mom, I want it,’ but that’s not real, of course. There’s more to [communication] than that.”

Practices that Lola described for working on narrative skills included reading stories, and encouraging students’ families to send pictures of family activities and events, so that the students could describe what they did.

Maite described a similar practice, wherein she requests that families send pictures via email, which she uses with her students to create what she calls “communication scenes.” In doing this, she is also able to better understand the students’ interests, which, in turn, allows her to customize their AAC systems more effectively. Another benefit of this approach is that it engages the family with the AAC system, regardless of the home language and the AAC system language; because

És que és un idioma internacional perquè el dibuix de la poma és igual en castellà que en català que en tots

“a drawing of an apple is the same in Castilian, and Catalan, and any other [language]”

as Anna said. For these activities, the symbol itself is more important than the output language.

3.3. Research Question 3

Are AAC devices typically used in both languages of the community? If not, how is the language of the device selected? What considerations are made when the user's home language differs from the language of instruction? In AAC users who use bilingual devices, what does language switching look like?

3.3.1 Theme 3.1 Language Choices in a Bi/Multilingual Community

Each of the six interviewees discussed choice of language for both instruction and/or therapy, as well as the individual's AAC system. Particularly among those who worked with children, two distinct approaches became clear: in one approach parents select the language, and in the other Catalan is the individual's primary communication language.

In the first approach, parents or guardians are able to select the language of their child's device. The choice is only between Catalan and Castilian Spanish; if the family speaks a language other than Catalan or Castilian Spanish, AAC systems are not available in the home language. As Lola put it:

No podem utilitzar la llengua materna, òbviament, perquè no - ni parlem urdú ni parlem àrab.

“We can't teach them in their first language, because we don't speak Urdu or Arabic.”

This approach is the more common of the two, with three of the four SLPs who work in schools describing a similar process.

In the second approach, devices are available only in Catalan. Cristina describes this approach:

Però sí que intentem que a nivell general a l'escola es parli en català, més que res per això, per ensenyar també aquests altres alumnes nouvinguts que cada vegada són més. Pues és l'únic lloc on poden aprendre el català.

“We try to keep Catalan as the language of the school more than anything else, to teach [the language to] newly-arrived immigrant students--[and] there are more and more every year. It's the only place where they can learn Catalan.”

In other words, the AAC systems are provided in Catalan, regardless of the students' home language. This is more in keeping with the linguistic policies surrounding education in the region, although none of the SLPs interviewed felt that their practices were strongly affected by these policies. Although practices vary, as Lola says, *tenim molt clar que el nostre paper és atendre les necessitats de l'alumnat* “We know very clearly that our main job is to meet our students' needs.”

Anna describes a similar approach to the first, described above, when working with adults: *si la família és castellanoparlant respectem això* “If the family speaks Castilian [Spanish], we respect that.” This is also the case for Anaïs, who adds a caveat regarding client language ability:

Mantenim bastant la comunicació amb totes les famílies. I jo això és algo que he preguntat a casa quin idioma parlen sempre. Però això, ens hem trobat en aquest cas que a casa parlen català. I que no entenen perquè li parlem en castellà. I estem fent una feina d'explicar què realment hem vist que aquesta persona reacciona i hi comprèn molt millor en castellà que en català que encara que abans de l'accident no fos així.

“We communicate pretty regularly with the families, and I always ask what language they speak at home. But I [had one case where the family always] spoke Catalan at home, and the family didn't understand why we were speaking to him in Castilian [Spanish]. And it took a lot of work to explain to them that we saw that he truly reacted better, and understood better in Castilian than in Catalan, even though that wasn't the case before his accident.”

In this case, both the family's wishes and the individual's abilities are taken into account, although the individual's abilities clearly inform the choice in language more strongly.

3.3.2 Theme 3.2 AAC and Expressive/Receptive Bilingualism

Each of the six interviewees talked about the bilingual expressive and receptive language of their clients. People who use pictogram-based AAC systems in Catalunya typically do not have access to a communication system in more than one language; the icon labels and/or speech output is only available in Castilian Spanish or Catalan. Nonetheless, people using pictogram-based AAC systems are frequently exposed to both Catalan and Castilian Spanish, as well as other languages spoken in the home.

Among the interviewees who work with children, the consensus is that the students are bilingual, and have greater receptive bilingual skills than expressive bilingual skills. Nonetheless, students are able to understand multiple languages--three interviewees mentioned students who understand as many as three different languages. They are able to tell this by observing the students interact with family members who speak the home language, which include Arabic, Wolof, and Romanian, as well as observing interactions with Castilian- or Catalan-speaking students and staff at school. However, the students who use pictogram-based AAC systems are limited in their expressive bilingualism, not by their abilities, but by their communication systems.

Although these individuals may not necessarily be expressively bilingual, as Lola says, they still have bilingual identities:

Lo cert és que ells senten parlar en llengües diferents, perquè ara pensava en aquest noi, un noi que la seva família és romanesa i que òbviament els seus pares li parlen en romanès. [...] I a l'escola ens senten parlar en castellà, perquè

alguns dels seus companys els hi parlem en castellà, i ens senten parlar en català perquè a ell li parlem en català.

“What’s for sure is that [the students] feel bilingual. I’m thinking about a boy, whose family is Romanian, so of course they speak Romanian with him. [...] At school, he feels like he speaks Castilian, because he has some friends who speak it, and he feels like he speaks Catalan, because we speak it with him. [...] But his AAC system is in Catalan.”

Among adults, the situation is similar for those using pictogram-based AAC systems: users can typically understand both Catalan and Castilian Spanish, but their system is only in one language. As Anna put it:

Evidentment, ve aquí tothom a Catalunya és bilingüe ja sigui a nivell de comprensió o d'expressió per tant tots els nostres nois són bilingües.

“Everyone in Catalunya is bilingual, whether it’s at the expressive level or the receptive level, so all our [clients] are bilingual.”

She later said that

No tenen per què canviar. Ells sempre parlen la seva llengua del seu SAAC. [...] No sé què els aportaria amb un altre perfil o en un altre idioma

“they can’t change [languages.] They always speak the language their AAC system is in. [...] I don’t know of any [AAC users] with two profiles or two languages.”

3.3.3 Theme 3.3 Language Switching & Unilingualism of Pictogram-Based AAC Systems

Because AAC systems are typically used in only one language, language switching is not the norm among people who use pictogram-based AAC systems. However, two SLPs who work with children, and one who works with adults pointed out that pictogram-based AAC systems are not inherently language-specific, and therefore do not necessarily require language switching. Anna says:

A sota els deixo escrit el que vol dir cadascun el nom i depenent, de vegades el castellà i català o depenent de la família és castellanoparlant no catalanoparlants. [...] És que és un idioma internacional perquè el dibuix de la poma és igual en castellà que en català que en tots

“I usually write what each symbol means underneath, whether it’s in Catalan or Castilian, depending on if the family speaks Castilian or not, [...] but it’s an international language, because a drawing of an apple is the same in Castilian, and Catalan, and any other [language].”

Cristina leaves the matter open-ended; she considers that students may think in more than one language, but have no way of expressing themselves in more than one language:

El seu llenguatge no ve a ser oral sinó que ve a ser el pictogràfic. Però sí que hi ha aquesta reciprocitat a nivell de dir que hi ha una comprensió bilingüe comprensiva i a nivell expressiva també perquè l'estan traduint a través de símbols. [...] estan transmetent amb símbols el seu llenguatge des de dintre del seu cap, per dir-ho d'alguna manera que no sabem, perquè clar, al no ser oral no sabem què estan pensant, en quin idioma estan pensant.

“[the students’ expressive] language isn’t oral, it’s pictograms. But there is a kind of reciprocity at the receptive and expressive levels, because they’re translating using the symbols. [...] They’re using symbols to transmit the language that’s in their head, but of course, since it’s not oral, there’s no way to tell what language they’re thinking in.”

3.3.4 Theme 3.4 Clinician Communication with Multilingual Families

Three of the four interviewees who work with children mentioned communication with families of students. Typically, the professionals use the language the parents prefer, whether it is Catalan or Castilian. However, when the parents speak neither Castilian nor Catalan, a family member--usually the other parent, or sibling of the student--steps in to translate. Lola recognizes the weaknesses of this approach, but also the necessity:

És una situació molt complicada perquè, clar, és el germà. És a dir, no és un traductor [...]Perquè ell és part implicada com a germà. Per tant, amb unes

emocions, uns sentiments i coses que sap que no sé fins a quin punt - però bueno, és l'opció que tenim.

“It’s a complicated situation, of course, because it’s a sibling. They’re not translators. [...] And as a sibling, they’re implicated [in the situation]. There are feelings, and other things I don’t know about. But it’s the option we have.”

3.3.5 Theme 3.5 Clinician Language in Instruction & Treatment

Although the families are typically able to select their child’s language of instruction and language of expression through their AAC system, three of the four interviewees who work with children, and one of the two who work with adults commented on the dominance of Catalan as the language of the center or school. Nonetheless, three of the four interviewees who work with children, and both of those who work with adults report that they change languages to facilitate communication with their conversation partner, whether they are speaking with students, families, or other professionals.

Two of the four interviewees who work with children also report incorporating their students’ home language into their interactions at school. For Maite,

També agafem o incorporem la llengua que tingui materna [amb els alumnes]. La majoria és el castellà. Llavors intentem sempre com a combinar aquest, o sigui, les dos, tu li pots parlar en català i per exemple els pictogrames per a aquest nen en concret estiguin en castellà

“I usually speak [to my students] in Catalan, but I try to incorporate their home language. For the majority [of the students], that’s Castilian. So we try to combine the two, [I] may talk to them in Catalan, but their AAC system might be in Castilian.”

This is also the case for the two SLPs who work with adults; they both discussed switching between Catalan and Castilian to better communicate with their communication partners, depending on their partners’ preferred language.

Lola described building rapport while working with a student whose home language is Senegalese:

De fet aquest curs vam estar treballant per poder-nos relacionar amb un nen molt petit senegalès, i utilitzar paraules, pues, les que li digués la seva mare. Sobretot paraules referides a, pues, “Que guapo que estàs. Mira que ets un - és que ets un solet. És que ets - mira que simpàtic” o, “Oi, que bé que ho fas”. Vale? O, “Quina rialla més bonica”, però fer-ho en senegalès.

“This year, I was working to build rapport with a very young Senegalese boy, and I used words that his mother uses with him. Mostly narrative words, things like ‘Oh you’re so cute! Look at you, you’re so independent! How good!’ or ‘Oh, how well you’re doing!’ or ‘What a nice laugh!’ But I’d say it in Senegalese.”

In this case, using the home language served as a means to build a relationship with the individual, even though Lola did not speak the child’s home language beyond the few phrases the child’s mother taught her.

CHAPTER 4 DISCUSSION

The analysis of coded interviews provided answers for each of the three research questions. The answer to the first research question can be summarized as “assessment of language proficiency,” and examines techniques for determining linguistic and communicative abilities in individuals who communicate using AAC. It is worth noting that bilingualism does not come up as frequently as might be expected when discussing this. “AAC teaching practices” responds to the second research question, and looks at the techniques practitioners use to teach bilingual AAC users and their families to use their AAC systems. “Bilingual identities of AAC users” and “language choice for AAC systems” respond to the final research question. “Bilingual identities of AAC users” examines if, and how, bilingual people who communicate using AAC systems use both their languages to communicate. “Language choice for AAC systems” looks at factors that determine which language AAC devices are available in. Typically, this is either Catalan or Castilian Spanish, and can be determined in several different ways, discussed below.

4.1 Assessment of Language Proficiency

Language proficiency is assessed using a variety of tools and methods, ranging from standardized assessments, like the CELF-4S (Semel et al. 2006), and formalized tools, like the Communication Matrix (Rowland 2011), to qualitative observations, intended to assess the individual’s communicative skills, abilities, and areas of need. Following evaluation, children are typically classified based on their abilities, which provides a useful starting point for developing treatment and communication goals.

Among adults, interviewees described using the following techniques to assess client language proficiencies: reviewing past assessment results, communication with the client's family, and observation and interaction with the client. Interviewees described the latter technique in detail, with an anecdote about an individual who had spoken Catalan for years with his family, but after a brain injury, was most comfortable speaking Castilian Spanish. They reached this conclusion after observing the individual in a variety of communication situations, in both Catalan and Castilian Spanish; he understood and produced language more easily in Castilian Spanish than in Catalan. Aside from this anecdote, however, bilingualism was not as frequent a topic of discussion as expected. Rather, the interviewees seemed to consider bilingualism an expected characteristic of people in their community, regardless of communication abilities. As a result, they did not discuss the language that systems or assessments are in in as much detail as may have been expected. Instead, the focus was on the quality of communication, with less emphasis on language.

The family also plays an important role in the evaluation of language skills. Particularly when an individual is new to the school or center, the family's evaluation of language and communication is vital to understanding where the individual is in terms of their communication. The role of the family in evaluation and treatment is important, as family members are typically the primary communication partners for the person using AAC. Brady et al. (2016) describe the importance of the communication partners in assessment, both to provide necessary information about the individual's communication skills and abilities, and as active participants in communicative exchanges with the

individual. The family's strengths and areas of need as communication partners, according to Brady et al. (2016), should also be considered in assessment.

4.2 AAC Teaching Practices

None of the interviewees explicitly mentioned assessing communication strengths and needs within the family. However, they did describe techniques for involving the families of their clients and students in communicative exchanges, and provide families with opportunities and techniques to develop their own communicative skills, along with those of the person using AAC. While assessment of communication partners may not be a typical part of assessment in Catalunya, supporting the development of communication partner skills is nonetheless an important component of intervention for people who use AAC as they develop their own communication skills.

The practices that the interviewees described are similar to those used for monolingual AAC users in monolingual communities: they include modeling, teaching and encouraging families to model outside the day center or school setting, and encouraging the use of AAC in the home. They described several ways to encourage AAC use in the home, including sending messages home using pictograms. Interviewees also described meeting with family members to determine how the AAC user communicates at home, and how the AAC user communicates at school or their day program. SLPs use this as an opportunity to inform their practices, and also to educate and support the family and AAC user.

4.3 Language Choice for AAC Systems

AAC devices are typically not available in more than one language. There are two approaches to language selection in the school setting: parent selection of language, and Catalan as the individual's primary communication language. In adult settings, the individuals typically already have a device programmed with their preferred language. In cases of individuals who had recently acquired language disorders, clinicians observe the individuals in communication situations, and are then able to determine which language the individual responds best to.

In some cases, SLPs who work with children whose home language is not Catalan incorporate the child's home language into instruction or treatment activities. When the child's home language is Castilian Spanish, the SLPs reported conducting some activities in Castilian Spanish to facilitate communication, even though the language of the school is intended to be Catalan--this is relatively easy, as all the SLPs interviewed speak both Castilian and Catalan. When the child's home language is one that the SLP does not speak, the SLP reports collecting a list of frequently-used phrases from parents to comment or encourage the child.

While practices in Catalan schools and day centers do not follow the recommendations that Wagner (2018) makes for the availability of AAC systems in the individual's L1 and L2, these practices do show respect for the individual's home language, as Mindel & John (2018) describe. As Lola pointed out, it is not possible for the professionals in the schools to speak the same language as all of their students; however, it is possible for them to show that they respect and value those languages. This, in turn, allows the professionals to show that they value continued communication

within the family by ensuring that the device's output language, or at least the pictograms, can be understood by the family.

It is worth considering that the recommendations by Wagner (2018) may not necessarily be possible for all Catalan schools and day centers to follow, given limited resources. Communication devices and systems are not always available in Catalan, and interpreters for families whose home language is not Catalan or Castilian Spanish are not readily accessible. However, the fact that no one is offered bilingual communication systems does suggest that, despite the inherent bilingualism of the community, and despite the AAC users' receptive bilingualism, the monolingual ideals described in Tonsing & Soto (2020) also exist in bilingual communities.

4.4 Bilingual Identities of AAC Users

Typically, AAC systems are only available in one language, although all interviewees who commented on expressive and receptive bilingualism agreed that their students and clients who rely primarily on pictogram-based AAC systems have some degree of receptive bilingualism, and have bilingual identities, despite their lack of access to expressive bilingualism. However, interviewees who commented on expressive and receptive bilingualism among people who use pictogram-based AAC systems agreed that pictograms are their language, and that pictograms are unilingual, and therefore expressive bilingualism using a pictogram-based AAC system is not possible. The benefit of pictograms, though, is their universality; the output language or the icon labels do not matter when the image is clear.

While it is not possible to objectively observe code-switching or language-switching among people who use monolingual, pictogram-based AAC systems, the literature suggests that this is not a limitation of the people using the AAC systems, but a limitation of the systems themselves. King et al. (2020) found that bilingual children with and without communication disorders could use AAC systems to switch between languages, and that the ability to code-switch was predicated by processing speeds rather than by language status or language experience. Other studies, like Gutierrez-Clellan (2009), which examined language-switching abilities in children with and without DLD support King's (2020) findings.

These studies indirectly support the interviewees' statements that their students and clients are receptively bilingual; although the majority of them are not able to express themselves in any language but that of their communication system, they are able to understand both Castilian and Catalan; those who have a different home language often understand all three languages. Given a bi- or multilingual communication system, these individuals may be able to switch languages effectively.

Although findings about language-switching among individuals who use pictogram-based AAC systems are limited, interviewees discussed their own language-switching when working with clients and students in more depth. Several interviewees reported changing languages to better support their communication partner, rather than expecting individuals using AAC systems to change languages expressively on their own. In fact, language switching was not considered a necessity for people who used pictogram-based AAC systems, largely because the icons they use to communicate are

not language-specific, and, because of the degree of bilingualism in the community, the people around them can be expected to switch languages to accommodate them.

4.5 Limitations and Future Directions

While Catalunya serves as a model of a fully bilingual community, Catalan and Castilian Spanish are very similar in terms of morphology, syntax, and, to a degree, vocabulary. For many speakers, the two languages are mutually intelligible, or very nearly mutually intelligible, complicating a study focused on bilingualism. As several of the interviewees pointed out, it is very easy for their students and clients to be receptively, if not expressively, bilingual, as Catalan and Castilian Spanish are so similar.

Exploring the same questions that the current study asks, in bilingual communities where the languages are not considered mutually intelligible, would likely yield interesting results that could be applied more readily to bilingual communities in the United States, where mutual intelligibility occurs with far less frequency.

On a similar note, it would be interesting and illuminating to collect similar data on bilingual AAC practices in the United States, using similar inclusion criteria to those used by the current study: clinicians who provide services to bilingual Spanish/English individuals who use pictogram-based AAC systems. Knowing what practices are used in the United States would be helpful in determining strengths and areas for improvement in current practices, and aid in identifying areas where data from the bilingual speech-language pathologists who participated in this thesis could be applicable and helpful.

It would also be interesting to delve more deeply into attitudes about bilingualism and communication disorders in bilingual and monolingual communities. Attitudes

towards bilingualism in Catalunya, on a surface level, appear to be different from attitudes towards bilingualism in monolingually-centered communities, like many of those in the United States; it is common for bilingual special education students in the United States to be excluded from bilingual education programs, for example (Cioè-Peña, 2017). However, the lack of access to bilingual communication systems suggests that, even in bilingual communities, expressive bilingualism is not an option offered to individuals with disabilities. Understanding how bilingual special education is conducted in bilingual communities could inform service delivery in monolingually-centered communities, and improve culturally-sensitive relationships with bilingual people living in monolingually-centered communities.

4.6 Conclusions

When it comes to assessment of language proficiency, interviewees focused less on determining dominant language--though that was a component--and more on communication and language skills overall. The SLPs who participated in this study described a flexible assessment approach, which relies on both qualitative and quantitative observation, both from an interdisciplinary team of professionals, and the individual's family.

Although AAC systems are available in only one language, this does not prohibit use of the home language in the school or day center setting. The families are encouraged to be involved in their child's communication development, and interviewees discussed ways to integrate the home language into interactions with their students and clients, even in situations where the home language is not familiar to the clinician. In a bilingual

community like Catalunya, exposure to multiple languages is inevitable, and professionals who work with AAC users do not try to inhibit or limit their clients' or students' exposure to more than one language.

Finally, it is important to consider that many AAC users in Catalunya consider themselves bilingual, despite limitations imposed on them by their communication devices. While their bilingualism may not be expressive, they still consider themselves bilingual. This is an attitude that the interviewees respected and encouraged; although they fostered communication with clients and students by switching to their dominant language in interactions, they typically presumed receptive competence, as evidenced by their reports of using both Catalan and Castilian Spanish with their students.

While this study does not presume to make any recommendations for bilingual AAC practices, it does shed light on existing practices in areas where bilingualism is mainstream. This study not only highlights the need for more research into bilingual AAC assessment and teaching practices, but also can be used as a platform for further research into best practices for assessing and teaching bilingual people who communicate using AAC systems.

APPENDIX A: INTERVIEW PROTOCOL

Intro

Thank you for taking the time to talk with me today. As we discussed in the consent process, the purpose of this project is to investigate the clinical teaching practices of professionals who work with bilingual individuals who communicate using picture-based AAC devices. I will ask questions about your clinical practices and teaching techniques in general, and which techniques you use with clients with specific profiles. If you are not comfortable answering any of these questions for any reason, you are not obligated to do so. I would like to record this interview so that I can document your responses accurately. If you want me to turn the recording off at any point, I will be happy to do so. Your responses and information will be kept private, as discussed in the consent process. I expect this interview to take between 45 minutes and an hour.

Before we begin, I want to clarify and define some of the terms I'm using. In this study, I am defining "bilingual" as an individual whose caregivers use a language other than Catalan, or in addition to Catalan (including Spanish). I define AAC as aided or unaided augmentative and alternative communication modalities to support their communication. These modalities may be high-tech (speech generating devices), or low-tech (PECS, communication boards), may or may not be the individual's sole mode of communication, and may be in one or both of the individual's languages.

I. Warmup & Demographic Information

- a. Tell me about your job.
 - i. How long have you been practicing? What is your title/role?
 - ii. Where do you work, and which populations do you work with?
- b. Tell me about your own language history. For example, what is your first language? How and why did you learn your second language? Which do you use more frequently now?
 - i. What is your first language?
 - ii. Which language (or languages) do you typically use when working with clients?
- c. Tell me about your client caseload.
 - i. How many clients do you have?
 - ii. How would you describe your clients' language abilities? Would you say that you work with receptive bilingual clients, receptive/expressive bilingual clients, or something else?
 - iii. How would you describe your general client profile? As we move forward, I'd like you to think about your caseload as a whole, as well as an example of one or two specific clients, to help me contextualize your responses.

II. Assessment and Language Preference

- a. This set of questions is about how you determine a client's language abilities, and their own language preferences, as well as their family's language preferences.
 - i. Tell me about the process you use to assess new clients' language abilities. If you would like, share a story about how you assessed a specific client.

- ii. How do you determine which language or languages to include in the individual's device?
 - 1. What considerations guide you in selecting and organizing the two sets of bilingual vocabulary?
 - 2. If you haven't already shared an image with me, can you screenshare an example of how AAC systems in the population you work with are typically laid out?
- iii. How do you become aware of parent/client language preference? How do you respond to it? What role does it play in choices you make moving forward with the client?

III. Teaching Techniques

- a. The following questions will focus on techniques, instructional strategies, and activities you use to teach AAC in both languages.
 - i. Do your techniques differ based on which language you're using? If so, how?
 - ii. What techniques, if any, do you teach the parents/caregivers of the AAC users you work with?
 - iii. How do you promote sentence generation and general language use among your clients?
 - iv. How do your teaching techniques vary based on an individual's diagnosis?
 - 1. Tell me about a client you work with who has language difficulties (ie autism, brain injury etc). How do you teach them to use their AAC device in both languages?
 - 2. How do the practices you use for clients with language difficulties differ from techniques you use to teach children with speech difficulties (ie apraxia, cerebral palsy etc)?

IV. Accommodations for Other Languages

- a. In this section, I will ask about your approaches to working with speakers of languages other than Catalan and Spanish.
 - i. How are devices in languages other than Spanish and Catalan used in your setting (classroom; clinic; etc)?
 - ii. Can you tell me about a time you interacted with a parent/caregiver who didn't speak Spanish or Catalan?
 - iii. What techniques do you use when teaching parents/caregivers of AAC users who do not speak Spanish/Catalan to support the AAC user?

V. Language Use and Switching

- a. How, when, and with whom do AAC users use each of their languages? Can you tell me about a time you saw a bilingual AAC user switch languages?
 - i. Does language use change based on setting/communication partner? Or do AAC users tend to rely on mutual intelligibility and/or others' bilingualism to make themselves understood?

- ii. How does language switching vary based on client characteristics, like age, diagnosis, languages spoken, etc? What role does the type of AAC system they are using play in language switching? (eg, how is it different among individuals with language impairments vs. individuals with speech impairments?)
- iii. Is your work impacted by language policies in Catalunya? How? What role do you feel language policies play in your AAC teaching practices?

Wrap-Up

Those are all the questions I have for you. Before we finish, is there anything that you would like to add, clarify, or return to?

Thank you for taking the time to talk with me today. I really appreciate you sharing your experiences and expertise with me. I am hoping to be able to apply what I've learned to work with bilingual AAC users in the United States, and improve the services we provide to them. Is it alright if I reach out to you with follow-up questions as I analyze the data from your interview, and those of other professionals working with bilingual AAC users? I plan on using the information from these interviews anonymously in a Master's thesis, and possibly in a publication in an academic journal focusing on speech-language pathology. Identifying information about you and your clients will not be included, and I will plan to provide a draft to you before publication, so you can let me know if I have included anything that you feel is inaccurate. The recording of this interview will be sent to Multilingual Connections for transcription. If, for any reason, you would like to contact me about your participation in this study, I can be reached at jsalisbury@umass.edu.

APPENDIX B: CODE BOOK

Nodes

Name
Avaluació
Desgranar els habilitats dels alumnes
Dificultats
Matritz comunicatiu i altres eines estandarditzades
Observació
Paper de la família dins de l'avaluació
Comunicació a casa seva i familiars
Historia medical
Llenguatge(s) de la família
Bilingüisme
Actituds dels alumnes
Bilingüisme a través de la tele o media
Bilingüisme bimodal o multimodal
Bilingüisme comprensiu i expressiu dels alumnes
Més comprensius que expressius
Convivència de català i castellà
Diferències en pràctiques segons la llengua
Llengua amb alumnes
Llengua amb pares o cuidadors

Llengua i l'escola o centre
Actitudes de la família pel que fa a l'escola o centre
Català es la llengua vehicular
Composició lingüística de l'escola o centre
Incorporació de la llengua materna del alumne
Usa les dues llengüatges segons la situació
Llengua materna de la logopeda
Polític lingüístic en Catalunya
Unilingüisme dels signes
Definició de bilingüisme
Nivells de Desenvolupament Comunicatiu
Intenció comunicativa
Relació de mes d'una paraula
Nivells de SAAC
pictogràfic com recolzament, nivell mes baix
Paper de la família
Col·laboració amb la família
Comunicant amb pares i cuidadors
Comunicació del nen amb els seus pares
Pares qui no parlen ni catala ni castella
Decisions de la família
Tècniques pels pares per sostenir els seus fills

Paper de la logopeda
Atenció individual o compartit
Carrega de casos
Carrega de comunicació
Moldejar o canviar activitats o sistemes per sostenir comunicació
Treball interdisciplinari
Perfil Alumnes
Capacidades cognitives i lingüístiques dels alumnes
Dificultats de parla
Llenguatge(s) i comunicació dels alumnes
Lectura i escriptura
Llengua materna del alumne
Programa individualitzat
Varietat en habilitats lingüístiques
Organització dels alumnes dins de l'escola
Perfil lingüística
Expressió amb SAAC
Llenguatge comprensiu
Llenguatge oral i expressiu
Pluri-discapacitat
SAAC
Aumentar SAAC
Limitació de la tecnologia
Dispositiu monolingüe per a una persona bilingüe

Els alumnes volen jocs
Llenguatge del dispositiu o comunicador
Llenguatge funcional
Aumentar el vocabulari
Aumentar llenguatge
Generar i allargar frases
La narrativa
Us de rutines
Techniques de ensenyar SAAC
Actividades estructuradas
Modelatge
Us de SAAC a l'escola i a casa
Tipus de Suport
Suport auditiu
Suport expresiu
Suport físic
Suport visual

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