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Polymedia and family multilingualism: linguistic repertoires and relationships in digitally mediated interaction

Abstract

This paper investigates family multilingualism in light of polymedia theory, presenting results from a study of transnational communication among four families with Senegalese background, living in Norway. Ethnographic interview data collected in 2017 and 2018 are analysed with the help of mediagrams to get insight into the families' uses of media and language. Through fine-grained analysis of interpersonal interaction with extended family members, this paper examines how family relationships are managed and sustained through media and language use in these interactions. It both draws on and goes beyond polymedia to investigate how linguistic repertoires are developed in digital communication. The aim is to explore ways in which polymedia theory may help us rethink family multilingualism and digital language practices.

Keywords: family language policy, Wolof, heritage language, text messages, voice messages, mediagrams

1. Introduction

Stor lettelse. På deres tid, mest sannsynlig måtte du gå fra hus til hus for å ha kontakt med andre. Hvis de ikke er hjemme, ja, når kommer de hjem, det vet ikke du, for du ha'kke telefon du kan ringe med, du ha'kke apper du kan snakke med, du ha'kke det, men nå, de kan sitte på andre siden av verden og ha kontakt med hverandre.

‘A big relief. In their time, most probably, you had to go from house to house to have contact with others. It they're not at home, yeah, when they come home you don't know, since you don't have a phone to make a call, you don't have apps for talking, you don't have that. But now, they can sit on the other side of the world and stay in touch with each other.’

(focus group data, Issa)

This is how an adolescent in Norway envisages the social life of his Senegalese-born mother before and after the mobile phone. It presents some of the essence of the last decades' changes in communication practices, changes that are crucial for transnational families. Not only Issa's mother, but also Issa, his brother Ibou and sisters Awa and Aida interact with their

relatives in Senegal and in other parts of the world. In this interaction, they use Wolof, a language that they otherwise only draw on when talking to their mother and their recently immigrated uncle, and they also use the language for writing – a practice that for them is restricted to such digital interpersonal interaction.

Research on language practices in multilingual families like Issa's flourishes (King, Fogle and Logan-Terry 2008, Lanza and Lexander 2019). Initially, the focus was mainly on decisions made by parents with regards to the transmission of languages. However, recent works are also interested in how families are constructed through multilingual language practices "in contexts of transmigration, social media and technology saturation, and hypermobility" (King and Lanza 2019: 2). The few studies carried out on mediated language use in the family show that the affordances of digital communication tools enable minority language use in transnational families (Kedra 2020; Little 2019; Palviainen 2020). Family members develop media strategies to manage relationships with the use of heritage languages, building new vocabularies and interaction styles (Cuban 2014; Szecsi and Szilagyi 2012). However, there is not yet a substantial body of research on how interpersonal mediated communication affects family language multilingualism in transnational and transcultural families.

This paper contributes empirically and theoretically to the field of family multilingualism through investigating its link with polymedia (Madianou and Miller 2012). It is based on a study of mediated communication among four families with Senegalese background living in Norway. Ethnographic interview data, digital interactions, visualizations, media diaries, and observations are analysed to explore their digital languaging practices with family members at home and abroad. The focus in this article will be on the multilingual practices of one of the families, the Colys. In the Coly family, a range of communicational tools and languages are in use to communicate within the household as well as with relatives and friends from different generations, in Norway, in Senegal, and elsewhere in the world. Through analysing language and relationship management in a polymedia environment, I discuss how their digital language practices may help us rethink family multilingualism. How do family members choose language and media when they negotiate family relations and how do they develop their linguistic repertoires? While polymedia theory makes the link between media practices and social and emotional aspects in the family context, this paper investigates how the theory may be used to research family language practices, thus combining a polymedia approach with linguistic interactional data analysis.

I will start with an introduction to research on multilingual families and discuss the few studies of language use in media in transnational families that exist to date (2). Further, I discuss polymedia theory (3) and describe the methods of data collection and analysis, ending with a presentation of the Colys (4). In the analysis of the family members' practices, I look at how the children manage media and languages when they interact with extended family members and friends (5), how they negotiate specific family relations in digital encounters (6), and identify the implications of these practices in the construction of the Coly family as multilingual (7).

2. Family multilingualism in digital interaction

Transnational multilingual families receive increased attention in sociolinguistic research, through the growing field of family language policy (FLP). FLP research investigates language planning in relation to language use and literacy practices within home domains and among family members (King, Fogle, and Logan-Terry 2008), both explicit and implicit aspects, and how the policy plays into practice (Curdt-Christiansen 2013). While the FLP research started out with a focus on language acquisition in middle-class Western nuclear families, studies are increasingly interested in different family constellations (Kendrick and Namazzi 2016), and in how families are constructed through their language practices (King and Lanza 2019). Moreover, the extended family is also considered to play an important role for the practices of the children (Coetzee 2018). What still lacks in the field, however, is a focus on the importance of digital communication for family multilingualism (Lanza and Lexander 2019).

For many transnational families, recent development within information and communication technologies has critical impact on the frequency of contact, the number of interlocutors and the diversity of communication modalities. These changes affect transnational families in different ways. In the West African context, cell phone contact between emigrated youth and their peers in the village has empowered the young to challenge the masculine power of the parents' generation, religious and social structures (Dia 2007). Since it allows for more intimacy and privacy than the landline phone, often placed in the living room, the mobile is used to build closer transnational relationships (Dia 2007). However, mobile phones are also shown to be used for social control in transnational families, as "technologies of domestic surveillance" to monitor left-behind wives, for instance (Hannaford 2015). Increased contact further leads to augmented pressure on migrants for economic assistance (Dia 2007, Tazanu 2012). Younger family members may face other

pressures through digital contact. Multilingualism builds symbolic capital in the global Senegalese community (Smith 2019: 129), and young transnational family members can experience both personal motivation and pressure through digital communication to improve their language skills to stay in touch with relatives in Senegal.

Digital media can create spaces for socialization through the use of heritage language and socialization to use heritage language (cf. Schieffelin and Ochs 1986: 163). Through digital interpersonal communication, children in migrated families can have contact with potential socialization agents who may assist them in familiarisation with language forms as well as values, ideologies, identities, stances and practices associated with them (cf. Duff 2012: 566). He (2012: 594) points out family members as important for rich and diverse input in heritage language learning, and multiple speech events, settings and participants position the learner in unique roles that shape the path of their language development. Despite this potentially important role of digital communication, studies of multilingual families and digital communication in transnational families seldom cross each other; digital family communication is little investigated within FLP studies. I will here briefly refer to this research (see also Lanza and Lexander 2019).

The handful of studies on children's digital transnational communication considers identity and minority language use, and mediated language learning. Parents are found to facilitate their young children's communication with relatives in the home country and frequently take part in the interaction (Cuban 2014). The parents' assistance may take the form of translation, it may be of technical sort, or it may regard the setting-up of the rendezvous (Palviainen 2020; Szecsi and Szilagyí 2012). Ducu (2018), for instance, describes how a Latvian woman in the UK included her 7-month-old daughter in daily talks with her mother on Skype, to ensure the virtual presence of the grandmother in the girl's life and to facilitate learning of Latvian. An emigrated Polish mother in Kedra's (2020) study called her parents regularly, for her daughters to speak "properly and sufficiently", with them, in Polish, and grandparents in Li Wei and Zhu Hua's (2019) research preferred video calls to be able to see their emigrated grandchildren online, thus enhancing their spoken use of heritage language. Although parents' facilitation may matter for older children as well, adolescents often communicate more independently, with friends and relatives of the same generation (Yoon 2018). They may furthermore take the lead in organizing transnational family chat groups to sustain linguistic and emotional connections, thus at the same time practicing heritage language literacy (Palviainen and Kedra 2020). Studies show that there is less felt pressure to write correctly or to conform to a dominant code on digital platforms, and this

makes it a suitable space to experiment with and engage in multilingual literacy practices and negotiation of cultural identities (Yoon 2018: 154). Even spoken language skills can be improved through engaging in literacy practices online. Korean heritage language learners reported developing their pronunciation and flow of speech through features of orality in digital interaction (Lee 2006: 107). The kinds of language practices that researchers find in these situations bear witness of the complex and significant role that digital exchanges play in a transnational family life, also that of the Coly family.

3. Polymedia

Nå det spiller ingen rolle for alle har de verktøyene

‘now it doesn’t matter anymore, since everyone has those tools.’

(focus group data Awa)

Several theories developed before the proliferation of digital communication Awa here describes consider the relations between different media. Intermediality, an interdisciplinary concept applied in literary, arts and media studies, refers to the relationship between media and is used to describe a huge range of cultural phenomena which involve more than one medium (Elleström 2010; Rippl 2015). Related concepts, encompassed by intermediality, are transmediality, referring to meanings and phenomena that appear across different media, plurimediality, a combination of media, and ekhpraxis, concerning the intersection between verbal and visual modes (Rippl 2015). Intermediality hence focuses on the relationships between media and modes, and the relationship between people and the media, in the sense of interpretation and perception.

Multimodality studies, coming from social semiotics, consider language as part of a multimodal ensemble, and analyses people’s meaning-making as they use a repertoire of semiotic resources (Jewitt 2011), “in the design of a semiotic product or event” (Kress and van Leeuwen 2001: 20). The understanding of the relationship between modes is a major theme, and these include among others gaze, gesture and posture, thus going beyond media.

Polymedia, developed in media anthropology to investigate social and emotional consequences of the proliferation of new communicational tools, offers a much narrower scope and a different perspective. While both intermediality, multimodality and polymedia share the assumption that individual media cannot be considered in isolation from each other, the main focus of polymedia is on the relationships between people as mediated by a communicative environment of a range of media, not on the relationship between media

(intermediality) or the combination of modes and semiotic resources to design a product/event (multimodality). Madianou and Miller (2012a) argue that as long as the preconditions of costs, availability and media literacy are met, users treat media as integrated environments of affordances. However, even in contexts with unstable infrastructural conditions, we may find polymedia practices ('noisy polymedia', Ben Elul 2020), where integrated media use is facilitated.

The study of interpersonal relations is crucial in family multilingualism, but not foregrounded in intermediality or multimodality studies. Polymedia theory, however, not only captures these, looking at relationships and media as mutually constituted, it further considers peoples' choices in the environment of available tools as part of a strategy to manage mediated relationships (Madianou and Miller 2012). With the smartphone, going back and forth between media is even more seamless; the phone becomes a polymedia environment in its own right (Madianou 2014). The choice of medium then, is not necessarily about making a mobile phone call or talking on Skype using the computer, but about different applications accessible on the mobile phone, applications that increasingly offer the same modalities of interpersonal interaction. Skype is no longer needed to make video calls, as for instance WhatsApp and Messenger also offer this, in addition to the exchange of photos, voice messages, text messages and phone calls. Differences between tools are thus to a certain extent downplayed, and not only the choice of medium, but the specific choice of modality (voice message, voice call, video call, text message) of the interaction has social and emotional consequences. Different modalities may even be used within the same interactional episode. Still, the choice of tools has social importance. An email does not equal a text message via SMS, which again differs from a Messenger text message where you can see if the receiver is logged on and has read it. And while WhatsApp and SMS interactions are conditioned by the exchange of phone numbers, Messenger conversation is not. Obviously the content of the interaction has emotional and social impacts. Interactional data are however not considered in polymedia theory; the focus is on how interlocutors' choices of tools for interaction and the norms of their society come together in long term effects on their interpersonal relations.

Media choice then is about the fit between affordances of the technology and the propensity of cultural tradition, as to what kind of sociality people value, and how the phone can be used to facilitate that form of interactivity (Madianou and Miller 2012: 130). This also goes for linguistic practices. Like media users make choices from a repertoire of mediational tools, they choose resources for their communication from their linguistic repertoire, relating

to the interlocutor and their relationship; both the media and the linguistic choice should facilitate the desired interaction. One may want to break with norms, challenge them or follow them, and to do so exploit the difference between what diverse language practices signal, e.g. what kind of sociality is associated with what types of linguistic practices (see Lexander 2018 for examples in the Senegalese context). Polymedia, with its emphasis on the social, emotional, and moral establishes a direct link between media and relationships which helps us crystallize what multilingual families do to discursively construct themselves, including their intra- and extra-household relations.

4. Senegalese migrant families: data and methods

This paper is based on ethnographic interview data, observation and interactional data collected in 2017 and 2018 during 4-6 individual meetings with four Norwegian-Senegalese families. The aim was to collect rich datasets, to observe changes in media use and to make moves back and forth between data collection and data analysis.

Language portraits (Busch 2012) were used initially to talk about the family members' linguistic repertoires. The participants were further asked to visualize their interpersonal mediated communication with nuclear and extended family members, including close friends, in a 'media map', a drawing of their digital interaction including languages and tools used with specific interlocutors. This map constitutes the point of departure for the *mediagram*, a visualization of the participants' communication made by the researcher (Lexander and Androutsopoulos 2021, see section 5). Interactional data from the diverse applications that the participants use (WhatsApp, Messenger, SMS) was collected through screenshots or downloads. Based on the interviews, data stemming from conversations with specific interlocutors was solicited and the participants chose what to share and how to share it. This data was discussed in follow-up interviews, and the participants commented on context and language use. Some participants also kept media diaries, with a day-to-day overview of mediated interaction. Based on the data gathered, the mediagram was developed, representing individual networks of interlocutors, language choices and modalities, and media channels. It was discussed with participants in follow-up interviews, so that changes like the introduction of new tools and new interlocutors could be registered. Then it was used for the analysis of the participants' media and language environment. Furthermore, all participants met for a social event with two focus group sessions, one with the adults and one with the adolescents.

All interviews, including the focus groups, were conducted primarily in Norwegian, but with instances of translanguaging drawing on Wolof, English and French. Sometimes the

participants would ask the author if I could understand their digital messages in Wolof, a language that I have studied and speak to some extent, and then help me catch what I could not decipher. All translations to English are by the author, in the case of Wolof data, in collaboration with Samba Diop (see acknowledgments).

The family that this paper focuses on is presented with the pseudonym Coly. It consists of a mother, Astou, and her four children Awa, Ibou, Aida, and Issa, with ages ranging from early teens to the twenties. Table 1 presents an overview over the data collected at the sessions with this family (Facebook wall data will not be analysed here and is therefore not included). Not all family members were able to attend all meetings; there is therefore unequal distribution of interviews and interactional data collected from each person. In addition to the meetings reported in the table, we had digital contact through WhatsApp and Messenger.

Table 1. Overview of data collection sessions with the Coly family

Date/participants	Interviews	Interactional data
<i>Mother Astou</i>		
April 2017	Language portrait, media map	SMS
July 2017	Follow-up, media diary	WhatsApp
August 2018	Focus group adults	
<i>Awa, oldest sibling</i>		
April 2017	Language portrait, media map	SMS
July 2017	Follow-up, media diary	Messenger
August 2018	Focus group adolescents	
December 2018	Follow-up interview	WhatsApp, Messenger
<i>Ibou, oldest son</i>		
April 2017	Language portrait, media map	
July 2017	Follow-up, media diary	Messenger
August 2018	Focus group adolescents	
December 2018	Follow-up interview	WhatsApp, Messenger
<i>Aida, youngest daughter</i>		
July 2017	Language portrait, media map, diary	
August 2018	Focus group adolescents	
December 2018	Follow-up interview	WhatsApp, Messenger
<i>Issa, youngest sibling</i>		
August 2018	Focus group adolescents	
December 2018	Language portrait, media map	WhatsApp, Messenger

The Coly family members' linguistic repertoires are shaped by their mother's geographical and ethnic background, their religion, migration history and location in Norway, as well as the languages taught in the Norwegian school system. The mother and the two oldest children were born in Senegal, where French is the official language, but Wolof is often referred to as 'our national language' because of its status as main inter-ethnic language and its use by the majority of the population. As different ethnic groups live together and inter-ethnic marriages are common, many Senegalese speak several languages from birth and fluid language use is common (Weidl 2018). Astou Coly, the mother, speaks Joola and Mandinka because so did her parents, who come from the southern Casamance region and the Gambia. The oldest daughter, Awa, says that she would like to speak Joola, but as her mother grew up in Dakar, she mostly spoke Wolof to her siblings, and has used this language with her children. Norwegian is the main language of communication in the family, though. The children have learnt English in the Norwegian school system, from TV and internet, and Awa, Issa and Ibou have learnt Arabic in Koranic school. Awa acquired French as a second foreign language in school, a language she had spoken fluently before moving to Norway as a child and now regretted she did not speak that well anymore.

There are not many Senegalese migrants in Norway, only 585, according to Statistics Norway (March 2021), including children and grandchildren born in Norway. Senegal shares dominant religion, languages, and ethnic groups with Gambia, and some cultural events in Norway are organised for both Senegalese and Gambian immigrants. However, the Senegambian cultural events that their mother attends to are not attractive to the Coly children because they do not meet other adolescents there. The occasions where they may, or may have to, use Wolof are limited to the home and to digital interaction with Senegalese relatives and friends. The practices studied here are thus crucial for the family's multilingualism.

When working with a small minority group like the Senegalese in Norway, there is a risk of unclosing the identity of the participants even though they are anonymized, through information like age, work and family composition. The exact age of participants is therefore not revealed here, neither is the occupation of the mother, nor the area where they live. Some personal information needs to be disclosed, however, like ethnicity and religious beliefs, to ensure a well-funded analysis.

Including children and adolescents as participants also posed ethical challenges. It was important to make sure that their participation was indeed voluntary and did not follow automatically from that of their parents. The informed consent form consisted of one page

with information about the project aimed at the adults and one in formulations adapted to children, and each participant signed an individual form. As for third party interlocutors figuring in interactional data, the participants themselves got in touch with them to ask for consent.¹

The following analysis is carried out with the help of mediagrams, supported by analysis of interactional data. First, we look at the patterns of Awa Coly's practices as presented in the mediagram (5), then relationship management in interactional data is examined (6). Since polymedia does not account for the details in specific interactions, interactional sociolinguistics and discourse analysis is included in the analysis of how modality and language choices are made to negotiate culturally specific family relationships with extended family. The final section investigates the influences of digital interaction on the way that the Coly family constructs themselves as a multilingual family, based on the analysis of interview data and observation (7). This combination of mediagrams, interactional, and interview data allows us to combine linguistic analysis with polymedia theory and gives insight into how relationship, language use and media choices affect one another.

5. Awa Coly's language and media choices

The mediagrams are developed to give insight into the interplay of media, language, relationship and modality in the individual's practices. Mediagram analysis thus enhances understanding of both media and language repertoires that the families draw on in their interaction, as shown in the following analysis of the mediagram of the oldest of the Coly children, Awa.

INSERT FIG 1 HERE

¹ In accordance with national rules for the processing of personal data (*personsopplysningsforskriften* §7-27), the project was notified to and approved by the Norwegian Centre for Research Data.

Figure 1. Mediagram of Awa’s mediated interaction with extended family (including close friends)

Legend

INSERT FIG 2 HERE

We see from Awa’s mediagram that her digital communication is multilingual, multimodal, and transnational. Besides her siblings and her mother (family members in Norway are represented in pentagons), she interacts with parents of her mother’s generation in Senegal, aunts and an uncle, and with Senegalese friends of her own generation, three in Senegal and one in Germany (represented in circles). With all, except the siblings, she uses several languages, and with transnational contacts these are Wolof, French, English and Arabic. Norwegian language is exclusively used with the household members, since it is not understood by the other interlocutors, and the mediagram demonstrates the importance of transnational digital interaction for the use of Wolof and French with peers.

Messenger and WhatsApp are the most used tools, Messenger with the siblings and mother, along with regular phone calls and SMS, WhatsApp with transnational contacts only. Awa confirms that she uses WhatsApp because of its popularity in Senegal, so that she can communicate with her relatives. The choice is thus conditioned by her desire to interact with them, and by their media choices. Viber is used only with her friend in Germany and with one of her aunts. The application had sinking popularity during the fieldwork, largely being replaced by WhatsApp. With her aunts, siblings and mother, as well as her friend in Germany, she both speaks and writes, while with her friends and uncle in Senegal, communication is written. Modality is related to language use; French and Arabic are not used in spoken interaction, and while Awa writes and speaks both Wolof and English with her transnational contacts, she claims that she never writes Wolof to her mother.

In line with media multiplexity theory (Haythornthwaite 2005), Madianou and Miller (2012: 122) find that more complex relationships are reflected in complex, complementary

media use. In Awa's mediagram, the greatest media complexity is found for the Senegalese family friend in Germany. With him, Awa uses Viber, WhatsApp, Snapchat, Skype, and Facetime, some of them tools that she did not mention for any of the other contacts. If we look at the details of their interaction, we see that it is long lasting and rich in content and that they know details of each other's everyday life. The linguistic repertoire they draw on is also diverse; Wolof, English, French, and Arabic, as shown in the mediagram, and sometimes they even insert material from German and Norwegian. Important here is the difference in affordances with regards to language: while there is the possibility of predictive text and automatic correction for French and English, this is not the case for Wolof. There is a Microsoft Language Accessory Pack for the language, but none of the Coly family members use this. Both the relationship, their access to diverse media, and their linguistic repertoires open for playing with tools, language and modality, as the different layers of complexity are intertwined. The analysis of their interaction shows that the different linguistic resources are drawn upon along the affordances of the polymedia environment, to negotiate their relationship and co-construct identities. A playful game where the friend in Germany positions himself as the Wolof expert and Awa takes the role as the Wolof learner leads to teasing that sustains their friendship.

Less complex interaction is found with other family members, like the uncle, with whom Awa writes text messages, exclusively on Messenger, and where the content consists of polite greetings. The language use is in line with everyday greetings in Senegal, communicated in Wolof, French and English.

Just like media choice can serve to shield oneself from particular interlocutors (Madianou and Miller 2012: 131), it can serve to regulate the exposure to Wolof. Through the media, the Colys are exposed to the expectations of Senegalese social norms of staying in touch through frequent greetings in Wolof. Reading Awa's mediagram, we see that she responds positively to these expectations, and stays in touch with several relatives using different tools and linguistic resources she shares with them. Through the choice of language mode, the children execute agency in this interaction, as we will see in the next section.

6. Managing family relationships digitally

Mediated relationships rely on normative understandings of what a specific family relationship is supposed to be. Polymedia "gives people the ability to reconfigure the relationship between persons and media as a means to create different emotional repertoires and registers" (Madianou and Miller 2012: 132). Analysis of the digital interactions of the

Coly family allows us to tap into their understandings, construction, and negotiation of family relationships and their modality choices.

As the mediagram of Awa showed, she sustains relationships with uncles and aunts. In fact, all four siblings have digital contact with their paternal aunt, *bajjen*. In Senegalese and Wolof tradition, this female representative of the paternal line has important responsibilities in following up her nephews and nieces (Diop 1985). The Coly children maintain their relationship with *bajjen* through the use of Wolof. However, their differing modality preferences and language competence affect the digitally mediated negotiation of the relationship. The aunt prefers WhatsApp voice messages in Wolof and sends them quite regularly. Ibou, Issa and Awa reply with voice messages, but Aida prefers to answer in writing: “I write the language because I think v..., I think voice messages are embarrassing” (*Jeg skriver på språket fordi jeg synes t- jeg synes talemelding er kleint*, focus group data). Although she never took classes in the language nor has access to predictive texting or automatic correction, she prefers to write.

INSERT FIG 3 HERE

Example 1. Screenshot of Aida’s WhatsApp interaction with aunt

Aida: Hello! Aunt, how are you? I miss you. How is it in Senegal?

Bajjen: voice message [content unknown²]

Aida: Hi

Aida: It’s me [Aida]

Example (1) from Aida and *bajjen*’s exchange starts with a text message from Aida, opening with the word *Hallo!*, written according to Norwegian spelling, but similar to English (*hello*), and French (*allô*) – a common opener of phone calls in Senegal. There follow some of the most common Wolof greetings: *nanga def* (‘how are you’), *namounala* (‘I miss you’) and *nakha Senegal* (‘how is Senegal’). Six days later, the aunt answers with a voice message, and

² The participants only shared certain types of interactional data. Here, the participant shared the screenshot and not the voice messages.

five days thereafter, Aida sends two text messages, one with the very common French greeting *salut*, part of vernacular spoken practices in Senegal. The second message is in Wolof, saying ‘it’s me, [Aida]’. A similar pattern repeats itself throughout the part of the conversation that Aida shared: *bajjen* sends voice messages, Aida answers with short, written greetings and emoji, a couple of times per month. While relatives of older generations often are found to prefer to ‘see’ and speak with the younger emigrated family members when they communicate with them (e.g. Li Wei and Zhu Hua 2019: 84), Aida does not incline to her aunt’s mode choice, thereby training her skills in Wolof through writing. The orthography she uses, for instance when writing ‘*namounala*’ (Wolof standard: *namm naa la*) seems to draw on French orthography <ou>, as is often the case for informal writing in Wolof (Lexander 2020). Since Aida never took classes in French, this is probably a practice she has taken up from her Senegalese interlocutors. Wolof orthography is only taught in literacy classes and in University in Senegal, and as a consequence varied spellings are applied. The risk of being policed for orthographic errors when writing Wolof is therefore not very high. (The only example of comments regarding the Coly children’s Wolof competence came from Awa’s friend in Germany who imitated her pronunciation.)

There may however be other consequences of choosing the written mode. When compared to her siblings’ interaction with *bajjen*, which takes place through mutual voice messages, the interactional thread in example 1 seems slightly hindered by the mode split. To hamper interaction by choice of modality may be a deliberate choice, to keep distance through lack of simultaneity (cf. Madianou and Miller 2012: 127-128), but also language competence may play a role here. Asynchronous interaction gives more time to articulate, to ask for help with formulations and translations. It puts less pressure on the interlocutors to perform spontaneously and enhances their control over the output. Had Aida not been able to choose writing, she might not have interacted with her aunt at all. The fact that she can choose language mode independently of her interlocutor may be the reason that they do communicate.

In Ibou Coly’s voice message interaction with *bajjen* we find a higher frequency (e.g. 7 messages in 4 minutes) approaching the pace of a phone call conversation. Through these messages, Ibou uses his Wolof skills to manage to the aunt-nephew relationship. Two of the messages sent between them are transcribed in example (2). The content refers to how the *bajjen* should help her brother’s children become successful in life, and the nephew’s obligations in return (for concerns of space, only the beginning of the *bajjen*’s message is transcribed, followed by Ibou’s answer).

Example 2. WhatsApp voice messages from Ibou's interaction with aunt

Bajjen: *Match bi leegi naka la démé? Yéna dóoro walla dan leen dóor? Inche Allah dinga toog tey bay féyè ko si milliard yi ci foot, dëgge bu neexe yalla Inche Allah rabbi dina am dé [...]*

'How did the match go? Did you win or did they beat you? By the grace of God, some day you'll be earning billions while playing football, indeed, by God's will, by the grace of God, that will happen'

Ibou: *Waa bajjen amin, amin merci beaucoup. Waay nu beenen yuul, su ma deme ba am xaalis bu bëri ma yobbula Makka dengna, Inche Allah amin, Inche Allah*

'Yes, aunt, amen, amen, thank you very much. If I get a lot of money, I will take you to Mecca, do you hear me, by the will of God, amen, by the will of God.'

The interactional episode starts with a message from *bajjen*. She had tried to reach Ibou, but he was busy playing football. She thus chose a different available channel for spoken communication, a voice message, to ask how the match went and praying for his success as a football player, also financially. In response, Ibou recorded a voice message in Wolof, first answering to her prayer with *amen*, then thanking her, and in the same prayer-like way as she framed her messages, promised to pay her a pilgrimage to Mecca in case of financial success. Hence, Ibou adopted both the content and the form of his message to fit those of the *bajjen*, and more generally to the cultural norms framing their relationship. The messages represent typical ritualized language practices, with Wolof influenced by Arabic and French.

When discussing their Wolof competence, the siblings consider the youngest brother Issa as the least competent. However, this does not refrain him from producing voice messages in Wolof, like in example (3), a voice message sent to *bajjen*.

Example 3. WhatsApp voice message sent by Issa to aunt

Issa: *ta [name], namnala, waaw (uh), namnala bu baax bu baax, namm naa leen yeen ñepp dé! namm naa la, waaw ma am numero, namm naa la bu baax bu baax, nuyul ma yeen ñepp dé!*

‘Aunt [name], I miss you. Yes (uh), I miss you a lot, a lot, I really miss all of you! I miss you, yes I have the number, I miss you a lot a lot, greet everyone from me!’

Here, Issa makes use of simple and not necessarily idiomatic Wolof for phatic communication, to sustain a relationship through “the sheer awareness that there is communication” (Madianou and Miller 2012: 88). He sticks to formulaic greetings, however saying *bu baax bu baax* instead of the formally correct *bu baax a baax* and repeats these several times, indicating that he is aware of, but not totally familiar with, the details of greeting practices. Similarly to the awareness of communication, there is thus ‘sheer use of Wolof greetings’ in the sense that the use of Wolof is more important than the way it is used. Issa’s pronunciation is different from his interlocutor’s, as is common among the adolescents in the study, but, as mentioned above, this is rarely commented upon or corrected by their relatives in Senegal. This creates a space for (heritage) language socialization where they can test out their Wolof.

Developing communication practices with relatives in Senegal in line with the relatives’ norms further implies the use of different registers with different generations. The following Messenger interaction took place between Ibou and an uncle of about his own age. Paternal uncles are named *baay* (‘dad’) in Wolof, as they may take on paternal responsibility if the father passes away, but their relationship varies with the age difference. In example 4, we observe typical translingual features of young people’s texting: urban Wolof with English expressions and unconventional abbreviations of French words .

INSERT FIG 4 HERE

Example 4. Screenshot of Ibou’s Messenger interaction with uncle

- Uncle: Hi [Ibou], I miss you. Are you fine? If you have WhatsApp, send me your number so that I can send you my new music to forward to [Awa] for me. She can dance it with the group and send me a video of it.
- Ibou: I think I understood everything you wrote... I am fine, thanks to God. How are things in Dakar? No, I don't have WhatsApp.
- Uncle: Well okay, all is well in Dakar. Is there no way I can send you music?

In the uncle's first message, there is fluid use of Wolof, French and English language material with the use of expressions like *sound* and *numbr call* creating the image of a cool, young man (Lexander 2018). In his answer, Ibou takes advantage of the acceptance of multilingualism in informal digital interaction. He can use English, both to convey something he is not able to communicate in Wolof, while at the same time signalling his perceived lack of competence in the language ('I *think* I understood...'). He then turns to Wolof for everyday greetings, and to answer the uncle's question about WhatsApp use. As the message tells us, Ibou did not use WhatsApp at the time this conversation took place, and could thus limit interaction with relatives in Senegal, since this was their preferred option. Excluding WhatsApp from his repertoire of tools, Ibou could also limit the exposure to digital language practices in Wolof.

When comparing this interaction with the voice message exchange with *bajjen*, there are important differences. The norms of the relationships are different, and, because of the age difference, the registers differ too, from a ritualized blessing in Wolof with Arabic, to a multilingual style indexing youth. Through digital interaction, the Coly adolescents hence experience different registers and different levels of formality of language, and learn to choose between them in their management of relationships. The mediation of family bonds is closely related to language use and a way of engaging with certain aspects of identities through linguistically and culturally specific practices, a digitally mediated language socialization.

7. Constructing the multilingual family in digital interaction

What impact does the transnational communication discussed so far have on language practices in the family? How does the Coly family construct themselves as a multilingual family through these practices? These questions will be discussed in the final part of the analysis.

The Coly family shares and discusses their contact with relatives and friends in Senegal and elsewhere with each other. An anecdote illustrates this. At one of my visits, Ibou, Issa, and Aida played to me a love song that Awa had received in Wolof on WhatsApp, from a friend in Senegal. They said it was nice, commented on the lyrics and asked if I understood. Awa did not seem to mind; the song was a shared artefact to be appreciated and discussed. Another evidence of the sharing of contact and communication stems from interactional data from the Coly family's group chat. In 2018, they created a chat to organize practical aspects of their holiday in Senegal. They exchanged videos from the stay in the chat, particularly of children they met and events they found worth filming, with both Wolof and Arabic being used in the videos which could be watched over again later. They thus shared linguistic aspects of their holiday experiences, and the media clips became a digitally "shared repertoire of stories around language experiences", that through being "told, retold, and reinterpreted by the families and individual family members may contribute to the reification of certain language ideologies and language practices, thus contributing to the FLP of given families". (Obojska and Purkarthofer 2018: 251). Through such practices of sharing and talking about, relationships within the household members are also built around the transnational practices and their multilingual nature. Bonding between mother and children further takes place when the children ask for help to translate and explain Wolof expressions in messages they had received. This way, the mother gets to see the children's messages, and there is an opportunity to socialization concerning Senegalese cultural practices. The interaction leads to meta-talk that is important to make sense of their belonging to Senegal and of building solidarity between the household members.

The polymedia environment thus affects multilingual practices within the household in several ways. First, it offers the possibility to communicate with family members with whom specific registers, determined by age and level of formality, are in use, to manage the relationship in accordance with cultural norms. For Senegalese migrants in Norway, this contact can be particularly important for the use of Wolof, since the number of migrants of the same origin are few, and there are no community schools.

Second, this potential space for developing specific sociolinguistic competence is used as such by the Colys. The contact with the aunt, for instance, turns into instances of language socialization through ritualized voice messages (cf. Duff 2012). The choice of modality of the interlocutors plays a role here. Aida's choice of writing messages, when the aunt prefers sending voice messages, seems to hamper the flow of communication, while Ibou and Issa's adjustment to the *bajjen's* voice messages leads to more frequent engagement in speaking the

heritage language. Awa even claims that she uses Wolof more than before with her mother. The practices may accentuate differences in Wolof competence between the siblings and strengthen a family hierarchy based on perceived language skills. However, the differences may also be mitigated if the skills of the youngest improve through increased exposure. The Coly family members position themselves as multilingual, mainly Norwegian-speaking, but with the ability to interact in Wolof and other languages. They undertake individual interaction with different contacts, using different modalities and applications, but through meta-talk and sharing, they frame them as collective relations. They use and develop their linguistic repertoires to engage with relatives as a family, a multilingual family.

8. Conclusion

The analysis of the Coly family's digital interaction shows that media use needs to be included in studies of multilingualism in the family. The combination of mediagrams, interactional and interview data allows us to combine linguistic analysis with polymedia theory and gives insight into how relationship, language use and media choices relate. Not including digital interpersonal interaction implies excluding a substantial part of the family's spoken and written practices with the risk of losing important insight, and family members' use of some languages may even be erased. The need for examining digital communication practices if we want to develop a more holistic understanding of the multilingual language practices of families is also highlighted. Leaving digital communication out of the analysis in family multilingualism might conceal the complex ways in which families draw upon their multilingual repertoire in everyday interactions. We see for instance that the adolescents' media choices influence language socialization in new ways. Through using tools that their relatives have access to, they open for transnational family members to indirectly contribute to family language policy, for instance to engage in Wolof language practices. The children are pushed by their interlocutors to engage in language practices that they do not take part in outside the digital space. Through polymedia, the adolescents access a rich pool of different sociolinguistic norms, exemplified through the ritualized interactions with the aunt and the non-ritualized communication with the uncle. In other words, digital communication has become decisive for family multilingualism in diverse ways, and in order to fully grasp these practices, it is not enough to just include media use in the analysis. Research needs to deconstruct and unpack media in order to identify the differences in modality, in distribution across the family, the diversity of the network of the different family members.

The current study supports earlier findings regarding heritage language use: transnational mediated communication creates opportunities to learn and develop heritage language skills in interaction (Cuban 2014; Palviainen 2020; Szecsi and Szilagyí 2012). When examining the family members' media practices as an environment of affordances, we also get further insight into how language use in media make transnational families come into being (King and Lanza 2019). We have for instance seen how the Coly children navigate media and modalities to establish communication patterns that they find suitable for themselves and for managing the relationships with their interlocutors. Both the diversity of the linguistic repertoire and the plurality of media make up resources that they draw upon for this purpose. Therefore, polymedia proves to be a beneficial idea for multilingual families research, an idea that should be further developed to become also a useful theory for this field.

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