

INVITED COMMENTARY

Diversifying language acquisition research can be (partly) achieved in urban societies and with simplified methodologies: Insights from multilingual Ghana

Paul Okyere OMANE^{1,2,3,*} , Titia BENDERS⁴ , Reginald Akuoko DUAH⁵ and Natalie BOLL-AVETISYAN¹

¹Department of Linguistics, Cognitive Science Unit, University of Potsdam, Germany

²School of Psychological Sciences, Macquarie University, Sydney-Australia

³International Doctorate for Experimental Approaches to Language and Brain (IDEALAB), Newcastle University, Newcastle upon Tyne, UK; Macquarie University, Sydney, Australia; University of Potsdam, Potsdam, Germany; University of Groningen, The Netherlands

⁴Amsterdam Center for Language and Communication, University of Amsterdam, The Netherlands

⁵University of Ghana, Legon/Humboldt Universitaet, Berlin

*Corresponding author. Paul Okyere Omane, Department of Linguistics, Cognitive Science Unit, University of Potsdam, Germany. Email: omaneokyere@hotmail.com

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Introduction

There is a large consensus (e.g., Cristia, Foushee, Aravena-Bravo, Cychosz, Scaff & Casillas, 2023; Kidd & Garcia, 2022) that diversification in language acquisition research is needed. Cristia et al. (2023) convincingly argue for studying language acquisition in rural populations and recommend combining observational and experimental approaches in doing so. In this commentary, we identify that diversification efforts must also include children growing up in non-western urban societies and that combining experiments with more easy-to-obtain data on language exposure can be a solid method to start with.

We base our commentary on our experience conducting language acquisition experiments in rural and urban Ghana. Our previous experimental work in rural areas investigated syntactic acquisition in 4-5-year-old children (Omane & Höhle, 2021). Our ongoing studies in Accra, Ghana's capital, investigate the perceptual and phonological development of 6-12-month-old infants, using experiments complemented by questionnaires and logbooks to collect information on children's language exposure (Tsui et al., accepted preregistration). So far, few studies have investigated language acquisition in either rural or urban Africa (Alcock, Rimba & Newton, 2012; Amoako, Stemberger, Bernhardt & Tessier, 2020; Amoako & Stemberger, 2022a; Amoako & Stemberger, 2022b; Ayeomoni, 2006; Demuth, 1984, 1989, 1992; Demuth, Machobane & Moloji, 2003; Demuth, Machobane, Moloji & Odato, 2005; Demuth, Moloji & Machobane, 2010; Loukatou, Scaff, Demuth, Cristia & Havron, 2022; Mastin & Vogt, 2016; Omame &

Höhle, 2021; Padilla-Iglesias, Woodward, Goldin-Meadow & Shneidman, 2021; Prado, Adu-Afarwuah, Lartey, Ocansey, Ashorn, Vosti & Dewey, 2016; Weber, Fernald & Diop, 2017; Weber, Marchman, Yatma & Fernald, 2018). Work on infants is particularly sparse in Africa can make a huge step forward toward filling the diversity gap.

In this commentary, we first describe the multi-generational, multi-family, and multilingual child-rearing context in rural and urban Ghana. We then highlight our challenges and solutions in recruitment and testing, including using a mobile lab. While these challenges have led us to refrain from collecting observational data, we close with considerations for collecting such data in Ghana in culturally appropriate ways.

Growing up as an infant in rural and urban Ghana

Similar to the communities described in Cristia et al. (2023), there are some evident differences between rural and urban areas in Ghana: in contrast to the cities, most villages do not have access to healthcare and education, limited access to industrial products (e.g., books), and only some have access to electricity and telecommunication. Therefore, rural communities may be ideal for investigating environmental effects on development. However, one important factor in children's language acquisition is shared between rural and urban communities in Ghana: like many African and Asian communities, they provide a multilingual language environment. In Ghana, this is enhanced by the housing situation. Most infants in Ghana grow up in compound houses, typically the home to between two and four families. A family may include grandparents, uncles, aunts, nephews, nieces, and other relatives. Families sharing a compound are highly connected in their leisure time. Children living in a compound spend their days together playing. Their caretaking is shared between adults within the compound.

Ghana is a multi-ethnic society without constraints against between-ethnicity contact, including marriages. As each ethnicity has its language, Ghanaians are typically fluent multilinguals: they speak at least two Ghanaian languages (e.g., Akan, Ewe, Ga) natively and use English, the language of government and business (Bodomo, Anderson & Dzahene-Quarshie, 2009). However, people usually prefer to use their ethnic language, for example, to show pride, similar to the Yucatec Mayan community (Padilla-Iglesias et al., 2021) discussed in the target article. Since adults within a family may belong to different ethnic groups, chances are high that family members speak different (preferred) languages. The number of languages spoken across all adults within a compound is potentially even larger, making the compound house system vital for becoming multilingual.

Compound houses in rural and urban Ghana thus provide a multi-generational, multi-family, and multilingual child-rearing context. While children in rural communities may grow up in a setting that differs even more from those typically documented in child language studies, studies of language acquisition in urban Ghana already provide enormous benefits to the diversification of language acquisition research.

Overcoming challenges with participant recruitment and testing in Ghana

Recruiting and testing child and infant participants in Ghana is challenging, similar to what Cristia et al. (2023) report for their studies. We have encountered three intertwined challenges. First, researchers cannot access central records with child names and contact information. Hence, instead of conducting a centralized recruitment drive, they must

reach each participant individually. Second, Ghanaians are generally concerned about scammers and child abuse. These concerns make some parents unwilling to participate. Third, families often live far away from the university campus, with unreliable traffic and expensive public transport as prohibitive factors for families attending appointments there. Hence, the system of a fixed lab on campus with test appointments arranged in advance, as often used in Europe and North America, has not proven helpful in Ghana.

In the process of conducting our studies, we have found the following solutions. Firstly, recruitment is done by local community members, who can provide information to potential participants in an immediate and trusted way. Participants may also pass the word about our research to others. This personal and verbal approach facilitates recruitment compared to indirect approaches that typically rely on written information (e.g., flyers). Secondly, we recruit and test on the same day at institutions that children attend for other reasons: infants are tested at hospitals on days of regular pediatric checkups, and young children at schools. Testing at locations children attend requires that we carry our testing equipment from one location to another, similar to what Casillas *et al.* have done in the Yéfi Dnye and Tselal communities (2020, 2021) described in the target article. While this approach works, it is not problem-free. At hospitals, long waiting times until checkups are completed make it impossible for some families to stay for a study. Furthermore, we extend Cristia *et al.*'s (2023) experience that it is not easy to find facilities with little noise and sun rays in rural Ghana, and we have found that testing in rural schools is often interfered with by other children. We thus agree with Cristia *et al.* (2023) that portable labs contribute to the successful execution of experiments while emphasizing that this is also true for urban areas without dedicated labs for baby research.

Adopting a simplified methodological approach: collecting information on input

As discussed before, multilingualism is the norm in Ghana, with the number of input languages and caregivers being highly variable between children. Thus, we recommend that any language acquisition experiment in Ghana be complemented by an assessment of children's multilingual environment. Researchers might want to opt for an observational method based on the target article's proposal. However, we want to raise two points for consideration: feasibility for the experimenter and (experienced) privacy issues for participants.

On feasibility, we decided, from the outset, not to collect observational measures in addition to our experiments. Considering the aforementioned challenges in carrying out experimental studies in Ghana, we decided to avoid the extra responsibilities that come with observational studies, such as collecting recording devices from families, and hiring and supervising assistants for data coding. Instead, we collected input data using a parental questionnaire and a logbook that the child carries around for a day. This simplified approach has contributed to the timely completion of our studies in Ghana.

On the issue of privacy, we did not know beforehand whether participants would allow us to audio or video record them, which added to our decision against observational methods. However, to assess whether future studies could incorporate these, we informally asked participating parents their thoughts about the use of recording devices to establish which languages their babies hear. Parents are uncomfortable being video recorded, as they feel their privacy, environment, and activities would be invaded. Some caregivers said they would not act naturally while being recorded, and others said they might cover their faces. However, most caregivers were willing to consider being audio

recorded. They feel that being invisible in recordings renders their identity secure. This shows they are unaware of voice identification software (see Doddington, 1985). While these same concerns may be unique to Ghanaian culture, we urge researchers to consider how a community might respond to various recording types prior to any study. Based on the responses from Ghanaians, we recommend avoiding video-based observations and carefully informing participants about privacy risks associated with audio recordings.

Conclusion

In conclusion, Cristia et al. (2023) argue for combined experimental and observational studies of language acquisition in rural communities. We fully agree with the call for increased diversity in language acquisition research. However, based on our research experience in Ghana, we urge researchers also to consider the feasibility of multi-method studies and focus on urban areas that are understudied in most parts of the world, as these also provide under-researched contexts for language acquisition.

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