Meeting participants where they are: Enhancing recruitment, stimulus creation, and data collection outside of the lab in psycholinguistic research

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The people most at risk for experiencing language processing difficulties are often the least well represented in psycholinguistic studies. Historically, research has predominantly taken place in highly controlled lab environments with college students. However, there is increasing awareness of the limitations of the generalizability of such results (Speed et al., 2017). While many community-based research efforts aim to recruit participants from relevant populations into the lab, our multidisciplinary research group takes the approach of meeting participants *where they are* at all stages of the research process. In this demo, we will discuss our group's approaches to addressing questions across a range of psycholinguistic domains by broadening our recruitment capabilities, making ecologically valid stimulus recordings, and collecting behavioral and eye tracking data, all outside of the traditional lab environment.

While portable technologies like tablets and boothless audiometers have become widely available, successful use of these technologies requires special consideration of environmental affordances and constraints as well as the development of flexible workflows. Combining knowledge of technology and unique environments has allowed us to gather thousands of behavioral and survey data points from individuals with specific health conditions or experiences that may impose differing demands on their language processing abilities. On a large scale, annual hearing health monitoring brings in thousands of individuals with varied language processing abilities (e.g., noise-exposed service members) that are representative of our population of community stakeholders. On a smaller scale, by working with clinicians to identify participants, we can conduct same-day testing of individuals in special populations at the conclusion of their clinical visit. These approaches are especially relevant for populations marked by heterogeneity, such as individuals with diverse language experience, hearing impairments, or traumatic brain injuries. We also use portable technologies to better reach the complex environments that cause the most real-world challenges for individuals. This has included our making stimulus recordings and conducting studies with healthy populations in the clinic, in military training and multinational coalition environments, and in noisy cafeterias.

With these techniques, we have conducted English-language studies on the effects of: bilingual experience and blast exposure on speech-in-noise recognition, military factors on voice disorders, and traumatic brain injury on speech production. We have also demonstrated the viability of virtual-reality head-mounted displays to collect eye tracking and pupillometry data, with implications for real-time language processing and listening effort in community samples.

In our demo, we will bring equipment to allow conference attendees to gain a hands-on understanding of the opportunities that portable testing affords psycholinguistic researchers (Figure 1). We will showcase a suite of speech perception and production tasks and stimulus recording tools that can be administered via tablets and demonstrate eye tracking studies using a virtual reality headset. We will discuss lessons learned in establishing and maintaining site partnerships, adapting materials for the relevant environment and special populations, and describe considerations for administration and research ethics.

Applications extend beyond military or clinical populations to wherever community members gather, including schools, workplaces, or interest groups for special populations. With these approaches in mind, psycholinguists are better equipped to ask questions of individuals who experience language processing challenges, without placing undue burdens on often-times special populations. We aim to provide attendees with practical solutions for understanding language processing challenges in the communities and the environments where they happen.

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Figure

A

B

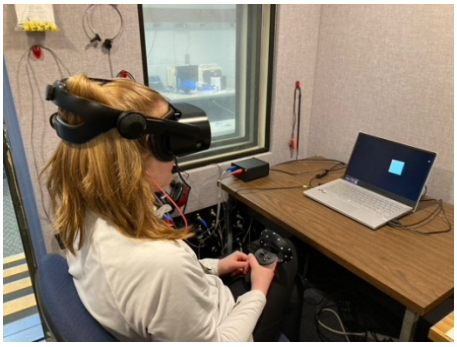

Figure 1. Examples of portable technologies to be used in the Demo. A) Tablet and boothless audiometer; B) Virtual reality eye tracking setup

References

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