MURAJ: In-Focus - M.Y. Savana Bak, Special Education

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Abstract: Social communication is incredibly important and foundational in autism diagnoses. In this In Focus article, Dr. Savana Bak explains the open questions in special education. Her ongoing research explores social communication in non-speaking and minimally verbal individuals, focusing on school and caregiver settings and advocating for culturally relevant and neurodiverse interventions.

Professor Savana Bak started at the University of Minnesota in Fall 2019. Interested in social communication in non-speaking or minimally verbal individuals, she wants to know how they use language and communication, especially in the school setting. More specifically, Bak wants to understand "how professionals and adults who are educating or serving them accept their modes of communication or elicit more communication from them, and how they interact and how they teach language or shape their language." She adds that "most of these children have complex communication support needs and spend a lot of time in a self-contained special education classroom with peers of similar age."

She came to the university with the hypothesis that communication in the home is easier for these individuals. "Because caregivers and family members had a long time spent together, speech does not necessarily have to be used; they likely just know what they are thinking or what they want through other modes of communication and experience." These processes happen at home, but the question still stands if they do in school settings. Bak wanted to examine the classroom setting to find the essence of those unspoken communications and to understand and try to instill this process so teachers and children can communicate better.

Unfortunately, by January 2020, everything closed due to the COVID-19 pandemic. Since she didn't have access to school settings, Bak moved to caregiver support because they were cut from services during the pandemic. She turned to caregiver-supported education for those in low-resource settings (e.g. rural areas, global south, immigrant populations, etc).

Figure 1. From left to right, M.Y. Savana Bak, BCBA-D, PI of A Lab for Autism Research (ALAB), and assistant professor in the Department of Educational Psychology at the University of Minnesota with Goldy Gopher.[1]

In the last five years, A Lab for Autism Research (ALAB) created a set of caregiver education modules because, at the time, there was no comprehensive caregiver training available that was also free and accessible. Bak says the project was based on a community-engaged methodology where researchers would ask caregivers what they wanted out of these modules. Based on this feedback, ALAB created short videos that were online, accessible, and free of charge that caregivers could watch in their spare time, like when waiting to pick up their children from school.

Bak says she "showed [caregivers] the videos and asked if they liked [the videos]." The parents ended up giving more opinions on the videos, reinforcing the idea that what researchers think can be very different from what the general population thinks and wants. She also learned that "each group has different ideas, opinions, and wants for the content and presentation. We had to make specific modules and different content for specific communities and how they receive them is different. Some in the Mexican American community wanted it podcast-like. Some U.S. English-speaking and hearing caregivers liked animation and didn't want the content to sound like a lecture. The Chinese caregivers liked the lecture format but wanted more in-home related examples." So far, the ALAB has finished the modules for Chinese caregivers via a mobile application for learning and has enrolled approximately 220 participants for another round of feedback. However, more funding is needed to continue onto other populations.

Figure 2. ALAB members. From left to right: Kamola Salimova, Lalinne Bell, Amber Reilly, Savana Bak, Zoe Qichao Pan, Elsie Xuejing Liu, John Ahorsu-Walker, and Eman Ali.[2]

As schools started to open up again, Bak moved back to analyzing the language environment with Dr. David DeLiema. They asked parents to send home videos of their children so they could analyze the communicative repair process. Bak explains that "the communicative repair process involves working to understand together. Oftentimes, when someone doesn't understand something, we may ask 'What do you mean by that' or 'Can you repeat that,

step by step.' It helps those on both sides understand each other better and ensures that communication from either side is respected."

The communication repair process occurs in the homes of autistic children and neurotypical caregivers. This may happen verbally, gesturally, or with Augmentative and Alternative Communication (AAC) which includes sign language, text-to-speech devices, picture boards, etc.

Bak explains that there is an emphasis on social communication and functional communication within these populations, especially when looking at how we diagnose autism spectrum disorder (ASD). However, the burden of communication is usually on the autistic individual. In certain situations, people assume non-speaking individuals can't communicate but they communicate well in their own way. This may present as 'screaming', where the child is trying to communicate something, yet some adults may think of this as a 'problem' behavior. Bak adds that she wants to transfer what was learned from the in-home communicative repair process to interventions in the schools so that educators can rethink how they teach language. "People communicate because they want to say something or to have a connection and express themselves and if you only allow them to do that in a manner for you to understand, this could be one reason why we see language interventions not sustained and many individuals are deemed as nothing having 'functional' communication after the intervention."

It is important to not only honor the mode of communication a child wants to use but also to find a communicative repair process where the burden of communication lies on both sides of the dyad instead of just on the autistic child.

Bak notes that some intervention's effectiveness is only measured in the context of the intervention and not in more natural circumstances. It is difficult to do natural interventions that don't have a system set up or are not pre-planned and are instead child-led. She does add that children with ASD do respond better to systematic instruction and wants to extend the investigation to other methods in addition to the traditional quantitative analysis for measuring effectiveness.

Many interventions are assessed based on quantitative data collection, for example reporting on how many times an individual performs a certain behavior. It is an easy way to collect data in a short period of time. Yet, Bak brings up the importance of qualitative data collection. Quantitative data is easier to collect than qualitative data as qualitative data can take a longer time to collect than quantitative, but watching videos and conducting observations can help to notice certain gestures children may make and what they mean, whereas quantitative data may not include that context. The gestures, vocalizations, etc. that are lost in quantitative data are a way of reaching out and can help better learn the child's language and their way of communicating to ultimately know what they mean.

The value of qualitative analysis was realized while working with Dr. David DeLiema and doctoral candidate Qichao (Zoe) Pan on a modeling intervention with shark toys to teach relevant phrases like "I won," "I'm safe," and "Ow!" "Your turn," to a

minimally verbal autistic child. When watching the videos they took off the interaction, they saw that the child loved playing, learned how to play, and even cheated (which is an important part of play). The child would even wince when he felt the clamp coming. Bak shares that it is difficult to capture these details with quantitative data when the predetermined goal of success is specific verbalizations and following sequences. But these details can be captured using interaction analysis and qualitative data. Bak adds that qualitative does not mean subjective but rather spending as much time on both kinds of data (what did he enjoy, did he reach out to friends, did he smile, etc). We can't mark down vocalizations on the data sheet based solely on what we accept or consider functional as the norm.

I decided to end our conversation with what the most interesting thing Savana Bak thinks is relating to the research area of special education.

Bak shares that she grew up in the 70s and 80s as a misdiagnosed neurodivergent and when receiving her training, neurodivergence and cultural relevance were not often-used concepts in special education. "We need diversity of who conducts the research and does interventions. We need to listen. We haven't been listening to autistic individuals for 40 years. We were talking more than listening as researchers."

Much of autism research is from a sliver of the world's population which dominates the narrative and research as a whole. Bak notes that the biggest backlash for culturally relevant research is "Isn't that included in individualization?" Applied Behavior Analysis (ABA), a science-based on behavior analysis accepted as evidence-based interventions for autistic individuals, is based on individualization. "But we are still trying to tweak what is already developed and apply it to other populations. You can't tweak what is already made for another population for another population," says Bak. "It's wrong. You have to start at the beginning like you did for the over-represented population in research for all populations - neurodivergent, non-speaking or non-hearing individuals, and those from other under-represented linguistically and culturally diverse communities. Some things may be tweaked but you should start with the assumption that you are wrong. Because science is trying to make sure nobody can disprove your hypothesis by trying to disprove your hypothesis yourself."

Bak adds that neurotypical, cisgendered, heterosexual, English-speaking and hearing, mid-to-high SES, and White males were the models for autism interventions and diagnosis. These were then tweaked for other populations. But even in medicine we now know that heart attacks may not present in the same way in women as they do in men, which led to women not getting treatment or accurate diagnosis in time. She explains that the foundational training is good and sound, but it is important to acknowledge how different behavior can present in different populations. Behavior differs based on a person's experiences, identities, and how they live. "You have to start new and listen to those involved and throw out what you know and your ego and start at the beginning."

Bak leaves us with some imagery regarding what currently constitutes the

research world of special education as well as many other fields of study and what her hopes are for the future.

"Right now, let's say the pond of research is a shade of green. Maybe I'm one speck of purple in that greenish pond. But maybe my speck of purple can grow and grow and grow and we have more pink or purple or blue so that the pond is not entirely green anymore. Like it's a mix of colors. So it is inclusion but not in the sense of treating every individual as a representation of the many identities they represent, but inclusion in the sense that a study conducted in a faraway country, or a qualitative study, or a study with just one student, cause the student's case is really rare, is regarded as important as those studies who enroll 200 or 300 autistic individuals. The reality is that the population that I try to serve typically doesn't get enrolled in those 200 or 300-people studies. They are outliers because they may not meet certain criteria like understanding a spoken instruction or maybe their families live in a rural community where they can't drive three hours back and forth to participate in the study, or they are an immigrant family who can't participate because they can't understand English. I just hope my impact is how we think about research including human beings carries similar weight, not because it's related to genetics or medicine or the number of people involved, but that it is sound research no matter who the participants are, how many they are, as long as it follows sound scientific research methodology. The research objective should be respected in the color pond that is currently dominated by one color."

References

[1] Figure sent in by M.Y. Savana Bak.

[2] Figure taken from the ALAB webpage at innovation.umn.edu/autism-research/

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Dr. M.Y. Savana Bak is an assistant professor in the Department of Educational Psychology at the University of Minnesota. Her research interests include social communication interventions for autistic children using multi-mode language data from the children's natural environment and supporting communities to advocate for culturally responsive interventions.