

Transcript

SUDHA ARUNACHALAM, PHD, BOSTON UNIVERSITY

MARGARET: 'Kay. So we have questions from many of our (sounds like rumpta) folks. (Sounds like C&R Square)

Q: Um, hi.

SUDHA ARUNACHALAM: Hi.

Q: Uh, so I prepared a question based on the review article that, (Laughs) but, but I think I'm, I think it connects to some of the stuff you talked about today. I just wanna say you presented so many exciting things, and I'm kind of wrapping my—right, (Laughs) yeah, I'm wrapping my head around those. But, I've recently, so I'm also interested in lexical acquisition. Um, and particularly for function words actually. Um, and, one thing we see evidence of in autism in speech perception, is difficulty with audio/visual integration. Um, you know, like lack of susceptibility to (Sounds like the McGurk Effect), for instance. And I wonder if you've thought about that at all in terms of, um, lexical acquisition. So I, I haven't, I, I've looked, and I haven't seen any research on this. But, um, I'm wondering if you have, and if you've thought about that at all. Because. Because I'm, in my environment, and I'm focusing only on the visual cues. And I'm hearing language, but I'm not able to integrate those things. Uh, to me that seems like it's gotta affect my learning—my, my reference mapping. And I wonder if that's why they do so well in like the syntactical bootstrapping cases, right, where they're not having to integrate, uh, at the same time. So I don't know, I'm just wondering if you've thought about that. That's my question.

SUDHA ARUNACHALAM: Yeah, that's a great question. So, that's exactly why we thought that this, um, this particular version of this paradigm, let me find it, where we had, you know, these shapes moving around, um, where you don't, the, the linguistic information that you're hearing is not related to the visual information that you're seeing. And in fact you are supposed to ignore the visual information altogether. It's not relevant to the reason that you're here in this lab, right/ (Laugh)

Q: Right.

SUDHA ARUNACHALAM: So you, this, what this allows you to do is say, oh here's a novel phonological form, it's got an "ing" on it, so maybe it's a verb, it comes before, uh, one content noun and after another content noun, so this is transitive. Maybe it has some kind of causation meaning right. You can do all of this work, you can learn so much about this word. And then... you see some possible candidate reference, (Right) and have to figure out what it means . . .

Q: So they've gotten a lot of input though without having to do that initial (**Exactly**) right, yeah. Yeah, yeah, yeah.

SUDHA ARUNACHALAM: Exactly. So, I, I don't have an answer for your question except to say that this is why we did this (Laughs)

Q: Yeah, okay . . .

SUDHA ARUNACHALAM: This is why we thought this would be good, was because we thought it would avoid, uh, requiring them to do that kind of integration. And I think, um... the, this is an idea behind a lot of the work that we're doing is to say is there a way that we can build up sort of rudimentary, but some kind of fundamental lexical representation in the absence of the communicative stuff. Obviously you have to learn the other stuff. We're only studying receptive knowledge. We're only studying, you know, we're, we're taking it out of the social communication context. And of course you have to learn those things. But our question is can we help you with the very beginning parts, in the absence of any kind of integration of that kind? And then, hopefully it'll be easier to build on later.

Q: 'Kay, great, thank you.

Q: Thanks. I really enjoyed your talk.

SUDHA ARUNACHALAM: Thanks.

Q: One of the things that came to my mind is trying to reconcile some of your findings with some of the work by Patricia Kuhl, about to what extent can children learn words when they're not socially engaged, which has some potentially contradictory findings to yours. **(Yeah)** I'm just curious how you reconcile that, or if you have.

SUDHA ARUNACHALAM: yeah. Yeah, absolutely. So, there are a lot of differences (Laugh) between that work and this work. And one difference, um... yeah maybe I'll just ta—tackle one; there are many. But one is that that the babies in her studies are very little. And so they're just beginning to learn about some of the things that we have as prerequisite abilities. So the kids in these studies have to know that to do the syntactic bootstrapping task, you have to know that words refer, you have to know that verbs denote events, you have to know that transitive syntax goes with causative events, right. You have to know all of this stuff already, and I don't think that this would work—I mean, I know it wouldn't work if you didn't have those prerequisite abilities, right. Um, so, we are relying on the fact that these kids have already figured out that language is communicative and how to deal with that fact. Um... so that's, yeah, that's one of, one difference that I think is particularly relevant.

Q: Hi, um, very fascinating data, and a story beautifully told as always. Um, my question has to do with trying to reconcile how beautifully tailored these parents were able to provide this input to their children, um, without any instruction, with the kind of laborious parent implemented coaching models we must go through to get parents to be beautifully tailored to their children, right. So, uh, I, I guess, I just want help thinking that through. I mean, wh—I mean one possibility is that families who can get themselves together enough to go into your lab are different than other families. Um... but, but maybe it's, maybe you have other ideas. And our perhaps there is some, uh, diversity in, in the range of; I'm, I'm just curious about that.

SUDHA ARUNACHALAM: Yeah. Yeah that's a, a great question, and that's one that, um, it's one that I've struggled with. Because on the one hand I wanna say parents are intuitive and brilliant, and everything's so easy, but then obviously it isn't. Um, so... your, your first hypothesis is certainly one that I think is very plausible, right. That the parents who come into our lab are already good at stuff like this. But we did have some pretty terrible parents in this task as well. And, um, I, we don't have enough language data about the kids to know, and, there weren't enough of them for me to be able to say whether that mattered to the kids. Um, but, yeah I think, so I think that there's much more variability out in the wide world than there is in our lab. Um, but another thing about this is the very, uh, constrained nature of this game. So, the parent doesn't even have to do anything. They're just, I mean in terms of physical activity, right. Whereas, if you're in a play session with your child, you are figuring out the toys and where the toys are supposed to be, and everything has to be just so. And you're worrying about a lot of things. And this, on purpose obviously, was a very constrained kind of situation, and I wonder if, um, having to control all of those things might make it very difficult for parents to focus on what they're supposed to be focusing on, particularly because you're supposed to be following the child's lead and interests. And so if they wanna go and play with this other thing, you are suddenly recalibrating everything to deal with that.

Q: Hi. Um, I would like to ask a follow up to the first question about, um, the audio/visual aspects of speech. Um, how did, in your pronoun study, um, you said that, um, the gaze followers made fewer mistakes. How did you define gaze following, since it could be that the gaze following is a proxy for like visual attention to speech?

SUDHA ARUNACHALAM: Yeah, that's a great question. We, uh, we didn't. Um, (Laughs) so what I meant by gaze following was that we watch the video and we said, does it look like he's looking up at the speaker, or does it look like he's looking down at the boxes? And we couldn't do anything more sophisticated than that, um, with the setup that we had. So we would love to be able to... train some kids on wearing some eye tracing glasses, and then bring them into the lab, and do basically redo every study we've ever done (Laughs) with this kind of measure. Because that is our biggest challenge. And we also have a challenge of course of visual attention is not identical to attention attention. And so even if they're looking at something, we don't know what they're doing with that information. That's particularly interesting in our, um, noun overhearing task, were we can say, is, does the child

seem to be watching the two adults have this interaction, but we don't know whether they're attending in a way that is allowing them to learn the word or not. So that's a much deeper problem that we can't solve with eye tracking glasses.

MARGARET: We have time for 2 more questions, and I see 2 more questions. Raise your hands higher, 'cause I've already lost you. Okay. Let's, woop.

Q: Hi, I'm Jenna De Carlo from Ohio State. And I was wondering if you just like planned on doing any work across languages with this task, where like modifica—like modifiers and like syntactic structures will be different. Or if you've given that any thought at all.

SUDHA ARUNACHALAM: Yes. Um, (She and several others laugh)

Q: Thank you. (Several people laugh)

SUDHA ARUNACHALAM: specifically in Korean, where the, where modifier placement is interestingly different. But where we, again, we would have to do 8 studies with typically developing kids before we could tackle, um, kids with ASD in Korea. Thanks. Hi.

Q: Hi. Uh, I'm Devon, I'm a clinician. Um, so I don't have a school to associate with. Um... although your work doesn't address treatment, I'm wondering what effect you can deduce your results have on the development or selection of treatment materials for teaching verbs, um, and/or pronouns. Meaning, is there a visual correlate to these sentences that you've placed on I think you called it a spectrum of linguistic context. I called it the smiley skill. But, (**Yeah, right**) you know. (She and several others laugh)

SUDHA ARUNACHALAM: So... so sorry, say that again? Is there a visual correlate to it, is that what you said?

Q: I'm, I'm wondering what effect you have on the... you, your results have on clinicians picking specific treatment materials, um, based on that more descriptive sentences don't necessarily mean better identification of these verbs.

SUDHA ARUNACHALAM: Yeah. Yeah, that's, um, that's like the million dollar question obviously. (**Laugh**) Um, we are not ready to do an RCT here with this. But we think that this is a direction that one could go in, right. (**Laugh**) So we're hoping that we will get there at some point. So certainly the idea is that if we select materials that will make certain kinds of sentence context more appropriate for the situation, that we would be able to use those sentence contexts over others and in turn facilitate learning of those verbs. So kind of our next steps are like again, way before the RCT part, are still to go through and figure out how this spectrum really works, not just in you know the samples of kids that we've had, but much larger, more diverse samples, um, and then going through and seeing if we can take these highly constrained, um, artificial experimental lab tasks, and turn them into real play situations. And then we'll be in a position I hope to do that RCT and hopefully answer that question.

MARGARET: Please help me thank Dr. Arunachalam. (Applause)