

*Transcript*

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So thank you. I'm happy to be here, and I'm also you know, I'm gonna acknowledge right off the bat that I am not an SLP, and I have been fortunate to collaborate with a lot of really smart people and SL, you know, smart SLP's. And this work that I'll talk about today is, kind of grew out of some work that really Judith Cooper and Helen, both spearheaded through NIH workshops. So I thank you for that. And I also thank my colleagues who were kind of right along this road with me in the beginning. So Becky Landa who's here, and Ann Kaiser who's here. So it's kind of exciting that you know, they share in this same work.

Alright, so, I'm gonna talk kind of broadly. And I know it's a research symposium, so I'm gonna share a lot of my mistakes, and, um, oh, and I have coffee; thank you. (She and others laugh) And, this is Lisa, she's an SLP here in L.A. who's amazing, and that I often refer kids to that are minimally verbal; amazing. So she's the expert. Disclosures are due to research funding, um, so I have, uh, a number of projects. And what I thought I'd talk about today are 3 different issues. Um, first is sorta what our intervention focus is, um, especially with minimally verbal kids, but also preverbal kids, and tryin' to distinguish those two, which I think is sometimes hard to do. The fact that there are lots a different interventions out there that work, we don't have just a single intervention. And I'll talk about how do we personalize interventions, knowing that. And then lastly, kind of thinking about how do we move these things out into the community. And I think it's really hard to follow Amy Wetherby, 'cause she has beautiful videos, and she's been in the community, and she really thinks you know very deeply and broadly about these issues. So, um, you know, uh, just take everything I say with a grain of salt. (Laughs)

Um, so the first issue is can we improve core impairments in social communication. And I think most of you SLP'S know that yes, we can. But I think back in the day when I was in Marion's lab, we actually didn't know if we could. We knew it was a core impairment, but we weren't really sure that we could actually teach kids things like joint attention. So when we think about, or, the way that I come at this, and I think about these early core deficits in social communication, we're talking about joint engagement. So how that child engages with other people. And you saw some beautiful examples of that in Amy's work. How children play, and what that play looks like. We know that the kids have some restrictions in play, and particularly in that symbolic imaginative play. And then of course about communicative gestures, so joint attention gestures, yes, pointing and showing and coordinated looking, and then a, and, and language. And while we used to think that language was the, you know one of the core impairments, we don't think about that as much in autism, right? Most of our kids are language delayed, but it's not the core impairment, it's really the social communication.

And so you know, I have my videos too; not as beautiful as Amy's. Mine are often done in schools, (Laugh) and so, or homes. But I'll show you a couple of little kiddos, just to remind us what the characteristics of kids are like. And these, both of these little boys are 3 year olds. So we would think that a preschooler is preverbal, right. They're not talking yet, but we're expecting them to talk. I don't really think of them as minimally verbal. But at what point are they on the road to becoming minimally verbal? And I would say that these two boys are on the

road to becoming minimally verbal. They're 3, and they're both very, very delayed in language. Neither of them have any words at all, and very few sounds. So the first little boy has had a; he's 3, just turning 3; he's had a year of ABA, and, um, he doesn't like to play. And so Mom had asked us to start to do an intervention with him, and this is his first attempt at intervention. Two days in a row, right. How you really get it, right? (Laughs) So, this little guy, um, you know, he's having trouble because he's thinking that task is completed, right? That's what you do; you finish something and you go on. And sorta inadvertently we're training that up in the therapy he's had. And so he doesn't wanna do that. And so when we try to expand the plat, to keep the engagement going, he's having none of it, and he's very dysregulated. And so that's a, that's a problem for the mom to work with, it's a problem for the therapist to work through.

This other little guy is about the same age, maybe just a little tad younger than 3. And Dad is trying to engage him in a really nice, uh, you know, responsive way. And the child is, is not, uh, you know, he's not really focused on Dad, he's much more object focused. Or unengaged. How do you engage him; what do you do first, right? So these are the problems that we tackle, with therapists, with parents.

So why do we focus on those early core deficits? Well we know that language by the time you're 5 or 6 years of age, is still the best social outcome for kids with autism. Um, and you know, what does that mean, language, right? So it usually means some phrase speech. Joint attention predicts to language. And, this is the work that came out of the lab with Marion and Peter, or that's, you know, my understanding of it was my work with them. And joint attention in this case, really refers to sharing attention. So that pointing, that showing, that coordinated looking. And requesting, which also involves some, you know, shared attention, has a different, uh, function, but perhaps the same form. And that is not as predictive of language in the work that we had done. So it was really that joint attention, and really initiating joint attention, child initiated, predicted to language. And then play skills are associated with cognitive abilities.

So there's also some evidence that it really matters what kind of approach you use, for teaching these kinds of skills. And I think Amy already presented the, um, the more combined developmental behavioral approach. And I think that that is the approach that's more effective for changing the quality and the, the frequency and the child's initiations of joint attention. Especially if you want it to be spontaneous.

So I'll give you some examples. And this again is from a study that I did with Becky again, (laugh) and, um... with Trish Smith. And just to illustrate this one aspect, of the treatment. It's, and I'm not saying that discrete trial training which is a very common ABA approach, is not a good approach. It is a good approach for certain kinds of outcomes. But it may not be the best approach for social communication, or for play. And so these are two little boys that are low, they're limited language kiddos. They both have fewer than 5 words to begin with, and they're 4 years old. So they're pretty delayed. And they're getting in a play assessment in the school. Can see that he has, um, some communicative intent, right. He has some, some joint attention, some coordinated looking. Think he says the word "Milk" in this little clip as well. So he has, you know, just a few words. Um... and, and that's likely important. He doesn't have symbolic play, he has some functional play there. So he's coming in, but with some skills. And, and that's important as somebody was asking about what are the predictors of kids to having a good

outcome while coming in with more skills, and especially coming in with some joint attention does predict later on to outcome. So this is 4 months into treatment. So these little guys got an hour of treatment in their school every day for 6 months. And this is 4 months into treatment, and these are the, the programs in this discrete trial, um, curriculum that we use. So you'll see some symbolic targets, right. So what's the symbolic target? You guys know, right? It's the book is piano, right? So does that look like play? I see a lot of no's. Right, it's really not play, because if you think about what play is for young children, it's creative, it's spontaneous, it comes from them, the idea comes from them. This idea came from the therapist. Right? And have you ever seen a kid go up to another kid, and say "Hey, let's pretend book is piano?" (Everyone laughs) So you, you know, you really do wonder about the generalization. Now that being said, a lot a kids can put this together, you know, regardless of the approach. But perhaps the quality, and you get there quicker, if you use a different approach. So this other little guy, same age, they're about the same, um, DQ, so they're in the... like mid 50s for DQ, and that too could be important. Um, he's getting the structured play assessment in school as well. And fewer than 5 words of baby talk. Right? But he also has a nice show. That was a nice show to the camera person. So again, some joint attention initiation. And then this is same point 4 months into treatment, in his school library, and you'll see that with this approach it's a much more develop—one of the NDBI's, right? So it's combining behavioral strategies and developmental strategies in their playing.

Alright, so you can see lots of opportunities, right, for social communication, is, the therapist keeps him, uh, really engaged. And the language comes out, right. So the language on asse—an assessment, a standardized test, assessment might not be that different for those 2 boys, but it's gonna look different in context, in, in the ways in which the therapy is progressing. And that was Lizzy Fuller; Ann, wherever you are, where we share; my RA went to graduate school with Ann, so, um... if you recognize the voice. Alright.

So I'm gonna talk just a little bit about an approach that we developed at UCLA based on that early work with Peter and with Marion, which was how do you teach these kind of core deficits that we were finding in the experimental studies that we were doing? So it has the components of the, the different areas that we were working on. So joint attention, symbolic play, engagement and regulation, sure, you know, for JASPER. Um... and it is one of those NDBI kinds of interventions. In terms of research, we think of it as a very targeted intervention. So it's not comprehensive. It's really targeted on social communication. But it's a comprehensive social communication module that you would add into a background intervention, or another intervention, or it could stand alone, depending on the age of the child. But most kids by the time they hit 3, are going off into school settings. So you're adding it in. And short term, and because we're expecting to see change in a very short period of time, I'm usually thinking in, in 3 month chunks.

So we have core concepts, joint attention play and engagement, we have these core strategies that are involved, and they're similar to this kind of layering idea that Amy also uses, but we're on these very specific strategies. So, environmental arrangement. We then you know would layer in imitation modeling, routines expansion, and language techniques and programming for JA come at the end. Even though we're really focused on joint attention, it's one a the harder things to teach right up front. So we teach it sequentially. So for example in environmental

arrangement we're gonna pay very close attention to the kinds of toys that we choose, that they're at the child's developmental level. We are very careful about assessing play skills and play levels, and our choice of toys depends on that. And then we have a clear space to play, which could be on the floor, could be in a chair, a table; depends on how to regulate that child. And then the caregiver facing the child.

Alright. So those JASPER effects with younger preverbal kids, have shown effects above and beyond the background treatment. And the findings have been highly replicable. Whether we are mediating at 3 therapists or teachers or parents, we always get a change in child initiated joint engagement, that's a duration measure. We wanna make sure that the child is actively engaged. And we, the way that we code it, which is a di—I think somewhat different from you Amy, is we use Laruen Adamson's Joint Engagement Coding from *Developmental Psych*. She has a nice way of describing this for you know typically developing children, and we've used that in our work from the very beginning. We get increases in play skills, and play skills, you know, it's functional play when the kid is really young, 2 year old, and it's symbolic play when the child is older, right. So developmentally you expect these differences. And then we get changes in joint attention; the same thing. Responding to joint attention when they're younger, and initiating when they're a little bit older. You expect this developmentally.

And so there's several randomized trials that have been conducted with kids using JASPER, and a couple from outside my lab; I think there are about 9 altogether. And so in this very beginning one, when I was just coming out of Marion's lab, we tried to think about well what happens if you add in content. So you as a speech therapist are thinking about you know how do I get this child to do gestures, how do I you know improve these different aspects of social communication. So we kind of took this apart. We said well, if we can improve joint attention, will we get better language outcomes. So that was our hypothesis. But we also had a contrast intervention of play. We didn't think play was gonna affect language outcomes, because at that time, we didn't have a lot of good experimental data from the lab that suggested that chan—the play was related to language. That was silly because of course in typical development there's a lot of evidence of that. So, what we got, so we randomized kids that were in a 30 hour a week ABA program and a day treatment program at UCLA, and they got randomized to receive joint attention content, or symbolic play, or play content, um, and, or they just got the ABA program. And so dose was controlled, right. They had the same number of therapist's kind of contact hours. And what we found was that you know, time one to time two was 6 weeks, about 25 to 30 sessions, 'cause it was every day. Time three is 6 months later, time four is 12 months later. And what we found was that you know if you teach joint attention, and we're looking here at ini—spontaneous initiation, you get that effect. So you kind of, what you teach is what you get. But we also got it in the play group. But we didn't get it in the group that was just staying in ABA. So the red line on the bottom where the kids are just getting that 30 hours of ABA. And at that time, started in 1997, you know, ABA therapists weren't really focused in on gesture teaching. So they weren't getting any of that. And with play it was the same thing. If you teach play skills, or play level, or play diversity, you're gonna get changes in those skills. And we got that for the play group which was significantly different from the joint attention group, but that group, both groups were significantly different from the kids who stayed in ABA.

But the big question for us is what happens to expressive language? So when we test on standardized tests a year later what do we get? Well we get a change on both of those experimental groups, improved language 15 to 17 months gain, compared to about 7 ½ months gain for the kids who just got ABA. And these were kids who were getting a lot of hours of therapy. So when they left that treatment program of 30 hours, some of the kids were getting up to 46 hours a week of individualized therapy. So these are not treatment naïve children at all. And so if you can get an effect of your treatment above and beyond really a lot of intervention, I think that that's saying something. So content matters. And that's the one thing we haven't paid as much attention to as we pay to approach. And so we have to think about this. And this is the role of the SLP. This is your, you know, wheelhouse; social communication, language, speech. This is what you can move above and beyond what an early childhood educator can do, what a BCBA can do, and who's doing, you know, who's doing, um, more traditional ABA methods DTT, for even verbal behavior.

So from this study, we also got generalization to parents. So this was a therapist mediated intervention. We looked at what happened with parents. There was more child initiated joint engagement for the experimental groups, compared to the comparison ABA group. We had more shared positive affect with our kiddos. We had maintenance a year later, 5 years later. We had prediction even up to age 8 to 10, that the experimental groups were still affecting language and cognition.

Okay. But so, you know, because we didn't have differences between joint attention and play, we talk about why we think that is. But we joined it together into JASPER. And so again, this is layered in over time. So when we teach parents, you know, we have phases, and we, um, teach these, um, different strategies week by week. And then we have modules that float. So the unengaged module, the pave irregulation module. Because you know kids vary in how they come to you. Not all kids need exactly the same thing. And we had started with weightless control designs, in parent mediated. I think Amy reported on one a those. But that was a small study. And we've done a couple of other studies where we really thought about trying to give parents information versus doing hands on coaching. Because obviously if you can give them information and they can get the same effect on their kid, that's what we wanna do. That will work. But, you know, it's not clear that that's what parents need. They probably need a lot more coaching, or at least that's from our data. So in one data—in one study with toddlers, so 2-3 year olds, um, we did a short term, so a 3 month intervention where we used JASPER with our primary outcome being this child initiated joint enca—engagement. And the reason that's the primary outcome is because the longer you keep a child engaged, the more opportunities they have for social communication, for joint attention, for language, right? So the goal is to extend that and to have it child initiated. Anyway, so with the hands on coaching, we get a bigger effect on child initiated joint engagement than we do when we just give them the information. And so this again was kids coming off of a 30 hour a week ABA program, and getting this kind of parent training. So, and dose was the same in hour, an hour.

So entry, exit, and a 3 month follow-up, and it's about 86 little kiddos. Um, and so comparison of these t—it's 20 session actually over 10 weeks, 6 month follow-up, okay, so I had it wrong. And so we get increases in joint engagement and play diversity. So play diversity for us is really important. It's flexibility, right. We're not teaching single play skills that they just reproduce. It



really is that flexible play that you wanna see in kiddos. And then play level increased. And, what was interesting is we used an evidence based parent education program in this study that was supposed to re—reduce parenting stress, and in fact it did. And we did not change parenting stress in the JASPER group. Want to talk about that too. I mean I, I do think that at the end of the day you wanna pair these, these kinds of interventions. We didn't increase stress in the JASPER group, but we didn't do anything about decreasing it.

We also did another study, and here my... uh, colleagues were involved. So Amy was involved in this one, Kathy Lord, um... Becky? Yes, I think. I don't see my au—authors here. Oh yeah, Be3cky's there. Um, and so this was one across 5 different sites and we were tryin' to go into low resourced homes. And these are 3 to 5 year olds. Um, to determine if again, could we do this ha—um, ha—could we do this information sharing with all the kind of same information, or could, did we have to do coaching to get a change in parent initiate—or child initiated joint engagement. And in fact again, the coaching became important. So these things are not easy to do. They're not easy to just talk about and have somebody figure it out on their own. In this study it was... 112 kids, oh, 2 to 5. (Sigh) 24 sessions over 12 weeks, 3 month follow-up. Again increase in joint engagement. Now we get an increase in symbolic play 'cause these kids are a little bit older developmentally, on initiating joint attention. Right? So the results change a little bit depending on your sample. Um, but all of those kids are what we would consider preverbal. They're gonna talk for the most part. We expect them to talk. We also know from these NDBI interventions, we can change social communication with other interventions. And I think there are two. Most people don't look at those outcomes, or they don't get the same results on the outcomes. So two that did, Brook Ingersol actually did an imitation training intervention and got an increase in joint attention initiations from that. And then Amy already did a report on the ESI project, and she gets, she collapses across a, a social communication outcome. So, um... both initiating and, um, joint, joint attention and requesting. So for me I separate those, because it's important for me to know are we actually affecting the initiations of joint attention. Because that is the hard one. Requesting, we almost always, um, see kids achieve that. Pretty rapidly, sometimes on their own. But a lot a kids need to be taught. But they're, they get that a little faster.

Okay, so we also know that you know, there's not a single effective treatment. So if anyone tells you that; parents tell me this all the time; well I have to do this because it's the only evidence based treatment. Well that's not true. There's a lot of evidence based treat, treatments. The problem is we're not very good at telling the community about those evidence based treatments, right? There's a lot of things that speech therapists do that are very effective. But how good are we at talking about those and letting people know what's effective?

So the problem, right, is that autism is so complex. We have highly gifted kids to really, really severely intellectually disabled kiddos. And there are a lot of interventions that have been designed specifically for ASD. And there's a lot of heterogeneity in the response to those different interventions. So we know, you know, a single treatment's just not gonna work. So because of that, we wanna think about that heterogeneity, and we wanna think about well what is that sequence of treatment that we need to do. Because we know what works for our kid, for one kid may not work for another. But also what works now for a child may not work later. So at what point do we change that? And so, I think that's the, the decision making and the sort of

rules around those decisions that we need information on. Like we don't know how long to go. I use 3 months because that was a practice parameter that came out of the NRC report. But how do we know that it really is 3 months? Could it be shorter; does it need to be longer; for which kinds of kids? So there are methodologies to personalize and tailor intervention.

So I'm gonna now kinda switch and really talk about sort of a research design methodology, and Amy had talked about the smart design, so I just, because you guys are all budding researchers, right, I want, or, or seasoned researchers ma—all your mentors. Um, I wanna talk a little bit about that. Um, and so we're gonna think about sequen—sequences, sequencing these treatments based on child response. Or it could be parent response. Or it could be therapist response.

So an adaptive intervention is a design that systematizes clinical practice. It's a common design in other fields, like cancer, and in substance abuse. So it's a sequence of decision rules that specify whether, how, when, and based on which measures to alter the dose, um... the type or the delivery of treatment, at decision stages in the course of care. So all of those things you have to decide on. Based on either your clinical judgment and some at, at some stage of research, or based on the research. And a smart design is the research aspect of an adaptive treatment design. So you don't need a smart really, adaptive, um, interventions are also great. Um, the smart just has more randomizations. It's a type of a multistate randomized trial design, so that each stage, subjects are randomized to a set of a feasible ethical treatment options. And one of the reasons I like these designs is because I don't feel good about random—I, I do research, but I don't like randomizing children to something or to nothing, when I know that they're not making pro—especially with minimally verbal kids, I know they're not making progress. Why am I gonna give them noting? So this is, is much more ethical. It's, and you wanna have something that's viable, that's really testing some, uh, a, a question you wanna know the answer to. Not just to get an effect. Um... so treatment options at later stages are restricted by response to the earlier treatment.

Alright. So the kids that we know the least about still in research, although I do think we're getting better; and again, I thank Judith for really bringing us together and starting us down this path. We know that between 25 and 30% of children with autism remain minimally verbal by school age. Now that's up to 55% if you look at some of Kathy Lord's research, where kids really aren't completely ver—they're not in phrased speech by even age 9. So, now it's changing, right. All of this is changing. It's like a fast moving train thank goodness, because we have better intervention. But there are a lot a children out there who we could consider limited language communicator, communicators, or minimally verbal kiddos. Again, the best social outcome are for kids who can, who have language. Again you guys are so important. And it's a relatively unstudied population, 'cause we mostly exclude them, because they often have lower IQ or DQ when they're young. So they're not developing very fast in language and we exclude them from research studies. Or when they get to school age, well they can't do like a peer intervention so we exclude them. So we don't know very much.

So this workshop that Helen and I both co-led, um, that was instigated by Judith, we, we really brought together people to figure out well who are these kids that we were calling nonverbal at the time. One a the first things we learned was, they're not really nonverbal. Right? You guys

know these guys. They're more minimally verbal. They might have scripts, they might have some words that are just not functional, but they're not really good communicators. We often define them by the number of functional words spoken. So, usually if under 20 words, or under 5 words, or under 30 words, you know, it varies study to study. Some of the kids can speak, but they only do it in some context. Some, you know, we see this all the time. They'll come in, they, they'll talk to the speech therapist, but they never talk in their classroom. What's going on? Um... and we don't often know what to do. So when a child's not making progress, what do we do? Do we say well I have a huge caseload, so like I don't have time for a child who's not speaking, so we're gonna decrease services? Or are we gonna increase services because we think they need more of a dose of intervention, right? And then when do we know that we actually should change something about what we're doing? And do we have enough tools in our toolbox, right, to know even what to change to?

So those are some of the questions that we're grappling with, with minimally verbal kids. And one of the first questions we tackled, and this was with Ann and with Becky, was this controversy over whether or not you should give a child an AAC device, um, if they're not talking, right. So we have parents who are often saying, oh, you know, I don't want you to use an augmentative device; he'll never talk, right?: and some speech therapists also, um, were adhering to that. So that was our first question. So we looked at minimally verbal 5 to 8 year olds, because we felt like that was the group—Ooh, am I out a time? No. What time did I start? I started at 10:30. Oh good, I'm good. Okay. Um... whew! So, um... we started with 5 to 8 year olds because of the work from this workshop was that this window of about 5 to 8 was the best window for getting, um, a kid to talk, to use words. Okay. Um, spoken words. And so, we, again, we wanted to use a different intervention. Now I've been working with little kids, and so partnering with Ann we added in EMT, which was a very structured expressive—spoken language intervention. So blending kind of the early, um, social communication with the very explicit language, we thought would be like the most powerful intervention for these kiddos. And we gave all of the kids this, because most of the kids that were coming into this project with 2 years of ABA. So we wanted to give them something very different, something more novel, to see if we could move them. And our outcome was, can we get, um, socially communicative utterances. So gestures and words and even vocalizations that approximated, that were socially, um, related. So the contrast—the contrasts were JASP, EMT, and then JASP-EMT plus AAC. We have different names for it shorthand, so you'll see it (Laugh) all different ways. So here it's just "JASP" versus "JASP plus AAC." So we ran, this is the smart design. It's a very simple smart design. So we just randomized kids to get the AAC with the, the behavioral treatment or not. And then after 3 months, which we thought was about a good chunk of time, and only 2 visits to clinic twice a week, so 2 visits a week for about 3 months, we would then determine whether they were fast responders or slow responders on the outcome, social communicative utterances. So that was based on a language sample, so Ann's language sample. And so kids who were responders, yay, you know. They just continued. And we set a purely a cutoff for that. So they had to improve, what was it Ann, 25% in I think half of the, the measures. And there were a bunch of different measures. Um, so they would just continue. And then if they were slow responders, and they didn't have the augmentative device, we could re-randomize them and they might get the device, or they might just intensify, so increase dose to 3 days a week. If you got the device, and you were responded, great; you continued. If you're a slow responder, now we don't take away the AAC device, because SLP's hate doing that; we're not gonna take it away from them,



but we're just gonna intensify. Alright, so an unbalanced design. And then at the end of that 3 months, we do a bunch of assessments, and then we did a follow-up.

Okay, so what did we find? We found, so the black line on top are the kids who got the AAC device, the red line are the kids who just got the behavioral treatment. So lo and behold, the kids, um, are doing much more socially related gesture and language, spoken language, if they had the device, than kids who just got the behavioral intervention. And so you can see that that's a nice, um... curve up and the very first, um, little part which is the first 3 months, and then it's the second 3 months, where we actually back the parent into the intervention. And then you see the follow-up. And it dips a bit at follow-up, but it's still over baseline, so, still increased. And I can talk about the reasons for that.

Um, but, we also got just now—if we just look at novel words that kids were producing, again, for the kids who got the device, they're doing more of that. And, they're making more comments. Right? So comments are joint attention language. So it's all good. So the device really helped in a lot of different ways. We also know that that initiating joint attention also improved for kids who got the device.

And then here's the parent data. So we're backing the parent in, at UCLA which is the top line. That site, we actually did monthly assessments of parent/child interaction, and at the other two sites, it was just at the main time point. But you can see how it's increasing over time in terms of children's, um, response. And children's receptive language and nonverbal IQ weren't significantly related to the parent strategy use in this. Um... and there were gains associated with children's joint engagement, which was an important aspect of this intervention, um, at all time points.

Alright. So, and the reason we backed parents in is because you know, these parents are a little gun shy. They've been trying to work with their child for many years now. And so we've kinda did a gentle backing them in. Because we as therapists also, we're kind of flying rudderless. We didn't quite know what we were doing (Laugh) and we needed to get to know the kid and figure out what was gonna work.

So let me show you some video. Just for fun. So this little guy—sorry Paul. I saw you last night, so I'm sorry, I'm just showing the same things. But you know it's always better to see it twice, 'cause then you really notice the problems, right? Um, okay. So this little guy's 5 ½. He had no words at all. Um... and he'd not used an augmentative device. And he was in a ABA based private school program. Alright. So he is initiating communication. He programmed the dynavox within 5 sessions; so he can read. Um, he's a smart little guy but needed access to communication. And he is now talking you know, uh, you know, it's been a few years. So he is now talking. He needed that access to communication. But you see how his voice is very unusual. And by the time he ended, he could approximate words, but you know, he's still not, um, very clear. So the, the... um, the iPad is what, what we moved to. It helps repair, if you can't talk. Um, okay, so we also use it with younger kids. So the little guy I showed you that was crying in the beginning, he didn't wanna play, uh, part of the issue for him was that completed toy, right. So we're gonna change up toy choice for him so that we can regulate him.

And this was the actual, the second day. And we put him on an iPad, because he had no words. So, it's good, all good.

So what we learned from this was that the augmentative device would help kids talk, as an additional support. And so we added it into the next study for all kids. Um, we saw significant gains at that midpoint, at 24 sessions, so that that would, would determine the next study's early response timing. So we're now developing the next Smart. And then we felt like the slow response measure had to be just one measure. It had to be simpler. We couldn't do assessments at the early response point. Um, but those multiple measures helped clarify the single measure. And a 25% increase is what we used in the first study. But we probably needed to be a lot more stringent, because 70% of our kids were responders in the, the pilot study. And you want about half of your kids, um, either 50/50 or 40/60 kind of, um, percentage, yeah.

(Inaudible question)

So something about for the AAC device. Voice output. They all had voice output. Yeah. Yeah, yeah. Yeah. Um... so... let's see. Um, so issues we had to think about in developing the next Smart, was, you know, what are our treatment options, what are our decision points, what are our tailoring variables, what are the decision rules, that input tailoring variables and output treatment option, at each decision point. So these are not for the faint of heart, right. But they allow you a lot of, um, you know leeway in building an intervention study that you think is going to be interesting and viable. So, um, in this next study, our treatment options were to have 2 initial treatments, both evidence based improve language outcomes. So we used this great trial training as one. Because a lot of our kids, um, have that approach. And so that might be a very comfortable approach, and we really focus in on the langu—you know, the core DTT goals. Um, or, we use the JASP BMT, because we knew that that had worked in the last Smart. We gave all kids access to communication. So picture, exchange types of systems are common in DTT. They've always been there. They're not packs, but they're just a picture, method that, uh, Lovus always used. Um, and so those kids would have that. And we actually put it on an iPad, so... that was the same. And then for our JASP-EMT kids, we used the iPad like provoco, quo to go, um, software. But there's other software so I'm not plugging any of these things.

Um, so we, um, had a study where we had a more, uh... the enxt spar—Smart was a more balanced model. So as a compari—comparison of two evidence based treatments, um, with treat, adaptive treatments then for responders and non-responders. So in the first study we were really interested in, nonresponders. Now we're interested also in responders, and whether we can boost their outcomes. We stratified randomization based on age. These again are 5 to 8 year olds, but is there a different between the, between a 5 year old, and an 8 year old, probably. Um, and the, how much language they had to begin with, for that initial randomization. So we would have balanced groups. Um, and we were interested in parent expectancies for change, for outcomes, as a second randomization. So if we're gonna add in parent training, we wanna make sure that the parents... you know, what their expectations are, so we can balance that out. And then the sequences, um, were addressing issues that we learned in the first study. So we added in parent training, and we provided a rescue, uh, protocol. So if you were a slow responder, we wanted to give you something that was gonna move you. So our goal is always, what can we do; what can we learn; to really move kids toward that outcome that we think is so meaningful.

So measurement becomes critical right? So our outcome again was the, um, social communicative utterances from a language sample. We, um, needed to think about measuring response. So again, one measure, and... um... and then what to do once they, um, got that response. Um... so whether we would give... for, if you didn't respond would we give you more time, or would we give you this rescue? If you, um, had a fast response, let's add in parent training and see if that makes a difference. Alright. Um, and then moderators selected at each, um, time point.

Alright. So for the response now, we're using, um... a CGI severity and improvement scale. These are often used, um, by doctors in, um, studies, sort of medical, uh, medicine based studies. And we wanted to know if we could use something like that. So it's what, it's not a research measure, it's an intervention measure. So the interventionist actually does this. They rate how severe the child's social communication is, at the beginning of treatment. And they rate it at the end of, uh, early response phase, and again, at the end of treatment, and again at, um, we... do it again at follow-up. But what's critical is that we also measure improvement. So it's based, improvement's based on your initial severity and how much gain you've made. And so it's a rating scale. It takes you know, 5 minutes. Our therapists as therapists, you know if your kid is making progress or not. Our researchers, you know are always kind of skeptical as to whether we could take you know a clinical measure, and use that as a, a research in, um... indicator. Um, and so, we weren't sure that it was gonna be reliable, but our solution was to randomly select some of these, and then have the PI's rate those same, you know, beginning session and early response session, and let's see how much are, how much we all agree. It's amazing how much we all agree.

So it's a really great measure. I think that was a really good solution though to making sure that in fact, we're all seeing the same thing.

Um, for the rescue protocol, so how do you do that? How do you combine say DTT with JASP-EMT? Um, so, or, or something else, right? So a rescue proto—protocol is something that in, involves a combination of treatments. Um, to move that child forward. And, they're highly individualized. So because they're highly individualized, you wanna make sure that they're replicable, right, 'cause we're doing research. Um, so there's some precedent for doing this. And so you can use the dashboard, for mapping, uh, a treatment plan for kids, and this happens in other areas of childhood psychopathology. So, mostly the work of Bruce, Bruce, um, Chirpia(?). It does involve clinical decision making. So for clinicians this is awesome. Um, so, you wanna think about, uh, what the child's initial issues are, maybe why they weren't responding. And now we wanna add something in. So let's say the kid is super aggressive and your treatments did nothing about that. You wanna now bring in a behavior plan that's much more targeted, much more specific. You might, if the child's got JASP BMT, and they're just not really getting the target, you might do some discrete trial training to train them up, or, to prime them on those targets. So it's a way of combining all of the good elements of different treatments together to rescue that child. And then we document how that goes along, right, with the dashboard.

Alright. Um... okay. So... let's see... Can I skip this? Um, yeah, ju—this is just more about the dashboard. Just how information from one week feeds into the next. So you're just documenting as you go along. Kind of li—in, in a sense like you would in a single case design. But you're trying to replicate this, so that we can understand something about this at the end of the... um... end of the day.

So in this new one that we have just completed, uh, we randomized kids to either get the DTT core elements, or JASP-EMT. And again, they all had some kind of access to communication. Right? So comparison of those two. Um, and then we tested early response, and at this point we're doing it at 6 weeks. But the same number of sessions, because now we're in school, and we're doing this treatment every day, or at least 4 days out of the week. Um... so if you're an early, so we do those assessments, and... I can't hardly see this. If you're an early responder, you could get randomized now to parent training, and you're gonna get parent training in JASP-EMT, or you're gonna get parent training into DTT if you're an early responder. Or, you could just stay the course.

If, um, okay, so you're just gonna continue. If you're a non, or a slow responder, then you could get, um, randomized to the, um, rescue protocol where we're gonna use the dashboard, and we're gonna combine elements of different treatments. Or, we could just give you more time. Because this is a very short period of time, you know it's 6 weeks. Maybe you really do need 3 months? And so let's see if that... if that makes the difference. Then we do our exit assessments, um... and... um, what we have at the end is this comparison of this whole sequence. So that, so... depending on what your questions are, we have smart discussions (inaudible words from an interference) involved one. But depending on what your questions are, if you're interested in what do I start with; should I start with DTT? And then if they're not making good progress, I change to something else. DTT's a lot easier to learn, believe me, than JASP-EMT. Um, or do I need to start with JASP-EMT first to get this effect? And for which kids? Right? So we're trying to understand if, if a kid comes to me, what is it about this kid that would inform me to do this treatment or that treatment? Mokay? So that's our primary comparison, then is that whole sequence. And we would power it for that first question. And we just completed intervention with a sample of 192 kids across for, 4 different sites. So we'll see. We have no idea. We have a broken up line. We're still doing a few, um... follow-up assessments. So it'll be interesting to see, uh, what we find.

Okay the last thing I just wanna cover,. Ooh, super brief. There's a research to practice gap as you guys know. And Amy talked nicely about getting, pushing these things out in to the community. We've done this a little bit by training teachers. But when you do these kind of implementation studies, you know, it's really hard to train at the same level that you would a therapist, right. But we were pretty successful with training paraprofessionals in New York that were working one on one with toddlers in a pre—in preschool, um, toddler programs in Harlem, and the Bronx, and we did another one in Los Angeles. And Los Angeles, and you guys are here in Los Angeles you probably don't know this, but 80% of our kids in L.A. USD are on free and reduced lunch. My samples are very, very diverse; mostly Latino kids. Um, and we have 14,000 kids with autism in L.A. USD. We have 600, almost 650,000 kids in the school district. And so when we did this study in New York, both of these studies are published, you can look at those if you want, but we found that if we did a weightless group, and so kids were either getting

JASPER one on one, or they were getting a little social group, to try to improve outcomes on social communication. And what we found was the JASPER made a bigger difference on joint engagement, so the orange bars are the JASPER. Um, well you see Ja—uh, entry is blue, orange is exit. And it's short term, 3 months. We also get a high level joint attention gesture, so pointing and showing, it's better in the JASPER group. And the same with change in language. So these are 2 year old's, and they're coming really with no language, and they're leaving with maybe a word, maybe 2 words, maybe 3 words. And we get better outcomes when you do this kind of targeted social communication.

Okay, conclusion. We know some things, right. So we know that we can change core impairments and then we can improve meaningful outcomes for kids. Um, we know that teaching other people really matters if we're gonna get these things to be sustainable. So teaching parents and teachers, and even peers, which I didn't talk about. Um, and we have evidence of generalization and longer term outcomes. These more naturalistic kinds of models are gonna generalize better than if we teach things in isolation. And we have a lot a things to learn. And, we just lost that. So I'll just tell you. Some of the, some of the things that we still need to work on and that we don't know, um, is... what those active ingredients of interventions are. So we need to think about dismantling all the different aspects. And Amy talked a little bit about this. We've done some of this work. We have a published, um, study on active ingredients of JASPER with parent mediated. Um, we need to think about personalizing treatments, right. We all wanna do that in our clinical practice anyway, but in research, we can help get you, or get all of us there a little faster maybe, by really testing these adaptive treatments, and then also delivering treatments just when they're needed. What I didn't talk about was some a my peer work where we find that some of our kids don't need the intervention, but we be—like because they have autism, they all need an intervention when they don't. So that's a whole nother topic. Um, and then we need to think about disseminating these interventions into the community. But we still need to focus on child outcomes. So it's not just about getting teachers up to fidelity, but paying attention to child outcomes, given heterogeneity, and given the fact that we have differing levels of response to treatment.

Thank you very much. And you don't see my acknowledgements. (Applause)

Questions.

**MARGARET:** Great. Alright, well, um, I just want to let the general audience know who are new to the session, that we have, uh, research mentoring peer travel awardees who have prepared questions for the speakers. And so we are going to take their questions first. We should have plenty of time. So they're gonna hold up their orange cards. (Laugh) And we have an orange card there. And please everybody remember to introduce yourself.

**Q:** Hi, I'm Victoria Henbest, I'm at the University of South Carolina. And, what I kept thinking about when reading the article and listening to the presentation is, number one, I love the idea of using a speech generating device as a therapeutic tool, and, um, and not just as the end all, the last resort, as, um, a communication system for a child. But the piece I'm wondering about, um, for clinical practice is, lots a times SLP's have a hard time getting funding for speech generating devices, and they have to think ahead 10 years, and this is gonna be the system that goes with



the child throughout life. So, I'm curious about your thoughts on navigating that piece of it, when you're using it as a tool and it may not stay with the child, um, throughout life. What are your thoughts on that?

**CONNIE KASARI:** Well I would probably never send a child off for life with a device. You, hopefully somebody would be seeing them over time, so that you could get rid of that, if, or, you know, a child will get rid of it I guess. Um, so yeah, I think it's a, it's a problem. It was a real problem for us in that first study when we were started with dynavoxes and we needed an SLP to write a, a prescription for the child to leave with something. You know, they're \$7,000. iPads are cheaper. But I also work in low and middle income countries, and so we use, um... I think it's like, I forget what it is, but it's like \$35. It's a Kindle Fire or something like that. And then we have a, a kind of a... I shouldn't probably say this, but like a knockoff protocol to go program, that somebody else developed at a different university, and, we just download that free and we give it to people that need it. So I do agree that things have to be sort of more available. The other thing is to use other software, like Soundingboard, which is free. And then, but you know, in terms of, you don't send somebody off forever. And you would; and we used it as a tool within the context of the behavioral treatment. So, you, we would obviously wanna train the parent or somebody else to be able to use it.

**Q:** (Inaudible)

**CONNIE KASARI:** No, Hm-mm. No, not in this first study. We ni—we didn't know what we were doing. Yeah, ideally you would, ideally you would want a child to go home with like an iPad or a Kindle or something, so they could communicate across their life. Yeah, yeah.

**Q:** Um, so thank you for the very interesting talks. (Yeah) My name is Casey Ambrose Slaboch, and I'm from Vanderbilt University. My question was about the outcomes, in your study. So I think it's really important that you focus on expressive language outcomes that were related to social, that were like more socially related. But I was also wondering about if you measured any receptive language outcomes for the user base either way.

**CONNIE KASARI:** Um-hm. Um, yeah. So we always measure all of those standardized kinds of, uh, so receptive language, expressive language, cognition. Um... and I'm drawing a blank right now. But we just had somebody, you know, I just looked at like I don't know, maybe 20 abstracts going to MFAR, and another 15 going to Gatlinberg. And somebody had Receptive Language in there. So, (A few people laugh) but I can't draw it up right now. So typically receptive language and cognition are really highly correlated for us. And kids are making gains. So they're not staying flat. And so, again it's important when you do research that you are randomizing kids, and that, so in two treatments of, they're very similar to each other. For, for the most part. And if you have a no treatment group, yeah, they're doing less well, but makes sense, right? But I think it is important to... to measure those kinds of things.

**Q:** I was just curious if the use of the speech learning device improved, the receptive language as well as expressive.

**CONNIE KASARI:** I can't answer that with any confidence. But, um, email me and maybe, maybe we have. (Laughs)

**Q:** Mokay, yeah. (Laughs)

**CONNIE KASARI:** I have 15 PhD students, so I don't... I don't remember.

**WOMAN:** Am I s'pose to draw on one a these orange cards? Is that what the deal is? Or is, or do you, do you pick them out? Who, who picks them?

(Several people say Margaret's in charge.)

**WOMAN:** Margaret's in charge; thank you Margaret.

**MARGARET:** I just, I just circulate. That's, this, the, there's no method to this madness.

**WOMAN:** Okay.

**Q:** Hi, my name is Julie Feuerstein, and I'm, I'm at Kennedy Krieger Institute in Baltimore. And I was just curious about, um, the process you use for deciding what features you wanted to present on the communication devices for the children who were... receiving that component of the intervention, and sort of, um, what that looked like, what the visual displays looked like, and the vocabulary selection process.

**CONNIE KASARI:** Oh, I'm not the person to ask. Okay, these are really speech. Uh, so yes, people get very concerned about that. Becky could answer that question. (Some people laugh) And Becky was part of that study. So, I, we, what I do know in the first study is that we chose, um, buttons that went along with the treatment, right. So went along with toy choice, that went along with kids interests, that had nouns and verbs. Did we organization them as proloco desk, no, we didn't. Um, and I actually don't, I mean... in my just experience, and I'm not an SLP, I don't find that that's necessary. So I also think that sometimes our screens are too cluttered, and sometimes there's not enough on them. And so we just use our, our best judgment on those. But if I have a kid who's saying nothing, I'm gonna use one button to build a contingency. Like probably most of you would do. I might add 2 buttons, I might add more if I think they can do more. And again, nouns and verbs. And honestly, I have therapists who mix them all up all the time. Just to make sure the kid's paying attention, and really communicating. So I know there's, um... a method to that madness, that people believe in, but I don't know if it's really been tested. Has it? Has it really been tested that you have to do it a certain way or not?

**Q:** (Inaudible comment)

**CONNIE KASARI:** Yes, at Penn State, right, absolutely. And, and that may be true, but I need to see the evidence before I'm gonna change my bad behavior. Just saying. (Several people laugh) This is what I love about not being, yes, speech and language, right. What? Right? I can get away with it.

**Q:** I'm Mia Lark . . .

**CONNIE KASARI:** Where are you?

**Q:** I'm here.

**CONNIE KASARI:** Thank you.

**Q:** Mia Barocova, Boston University. Um, I wanna go back to the outcome measures question. So when we're conducting intervention studies, it's key to pick the appropriate outcome measures that are valid, that are reliable, that are sensitive to change. **(Um-hm)** How do we go about distinguishing between statistically significant change in score versus a clinically meaningful one. And do, how much do these overlap, and does it change across the spectrum?

**CONNIE KASARI:** Does it—ooh, those are like big questions. (Some people laugh) Um...yeah, so you, do you wanna distinguish between something statistically significant and something clin—clinically meaningful. At what point is a one point change on a rating scale, or on a test important. So you have to, you have to determine that. Now sometimes it could be. Right? But other times, no. So I think that's up to the researcher to make that argument. And almost always now, someone's asking you to say whether something's clinically meaningful. I would question a one point change on a rating scale. But it depends on what those anchors are. It may be meaningful. But that's your, that has to be your argument. I do think you wanna use some measure that's valid. But, let's think about minimally verbal kids. Are you gonna measure their change? Are you gonna measure that on a standardized test, in a short period of time? You may find nothing that changes, and yet you know something has changed. Um, and so you might wanna use a natural language sample. And I think there are a lot of people now that are developing these natural language samples, and those also vary. And so you have to make that argument for that. Um, but standards tests over time, at the end of the day are important as well. You know, so you wanna balance them out. In research you have to pick a primary outcome. So for us, where we thought we would get change, Natural Language Sample. And so that's what we looked at. In, with JASPER, it's joint engagement, because that is this, um... measure that is important that's a child initiated. And, I didn't go through the sort of what, joint engagement looks like for us. But we're pretty stringent on that. It's not just that the parent has organized this kid and keeping them controlled. That would not be joint engagement. Right? So it's child initiated, it's more, um, involved, um, coding, so.

**Q:** Hi, I'm Julie Ann Garbarino from the University of Maryland. Um, so in all of our fields we should be evaluating whether things are working on behalf of the child. And, with your model, the approaches changed, if the child isn't responding to treatment within a reasonable amount of time. Um... if we think about real world extensions, I'm wondering if you have thoughts on how this change would figure into IEP Plans where things sometimes are laid out very specifically.

**CONNIE KASARI:** Hm. Yeah, well IEP's can change too, over the course of the year, right? So if you're working with a parent and something, you find that something's really working for that child and they're not using it at school, you know, they can call in an IEP and change

something. I mean, a lot a times the... parents tell us that they have trouble getting like I, somebody to use an IEP in a, in a school program. I mean a IP, um, uh, augmentative device in a school program, right? So they don't wanna do that. And so, I think, um, you can call an IEP, at any time. And try to help that parent, um, do advocacy in a very effective way. Nice way. Right? Is that what, is that what you mean? Yeah. Yeah. And sometimes too, you know, you wanna wait. I mean, you wanna wait a little while. Till you really understand what's happening. So I wouldn't just run into like oh my goodness, we've had a month of treatment and then all of a sudden this is really fabulous and let's change the whole IEP. You might wait a little while. Right? Otherwise school won't like you. Yeah.

**Q:** Hi, I'm Kristin Muller from the University of Kansas. Um... it was great to watch videos on thr intervention and to also read about it. I was, I noticed that the... individuals in the study were, had receptive language skills, as less than 24 months. Of greater than 24 months.

**CONNIE KASARI:** In the first study, uh-huh, yup . . . .

**Q:** In the first study yes. And I was wondering, do you think that... individuals with receptive skills that were lowering, would respond (inaudible words).

**CONNIE KASARI:** Um-hm, okay. So, that's a good question. So 24 months because the funder made us do that. We were trying to go down to 12 months. That was probably not right. Um, and they... the reviewer suggested it, it should be 24 months. So that's where we set that bar. But the next study, the one we just finished, it was 18 months. But we do think that around 18 months, might be kind of a cutout for the AAC, to use that. Now I don't know... where that's based. That's kind of a clinical judgment, right? Certainly... some of our little kids might be a little bit lower than that. And again we're just using at it, it as a tool in the context of intervention. So I think you could go lower, depends on what your expectations are. All of those questions are really great questions. And they're really hard because we don't have... solid benchmarks based in research. But you guys have a lot a clinical judgment on that. And you have... certain intuitions that could be tested out in research so on. Be good to know that. Nancy you know this, you're working on this. Yeah.

**Q:** Thank you. I'm Jena McDaniel from Vanderbilt University. Thank you for, for your talk; it was very nice to see so many pieces put together in, in a short amount of time. I was curious to hear a little bit more about the research to practice gap. If you had any advice for things we can think on the front end of designing a study, to get in the... after completion when we have our conclusions how to get that into practice faster.

**CONNIE KASARI:** (Laughs) Oi. So. (Everyone laughs) You know, I have spent since about 2003... um, working in schools and trying to different methods of, of kind of implementation, right. So I have a whole nother project, and I didn't talk about any of this really here. Uh, where we use community partner, participatory research. For... really tryin' to change something and to get it systematized in a system. It's tough work. And you spend a lot a time on the front end; like years, first trusting each other, and sort of working this through. In schools it's really hard. I mean depending on where you are, it can be really hard. In L.A. it's super hard. They, the reason I ended up in New York on that one implementation was, I was a second year that I was

s'posed to go in and do... work in L.A. They changed the whole preschool system. They threw out the program and started over with something new, and so I couldn't go in, and do the same thing. And so we ended up in another study; it was fine. I mean another place. And now we're back in L.A. but the whole system is different, and that happens. And teachers change and, we always said we were gonna write a, a paper on working in schools, you know what happens. Right? It, it's... things happen. Um... so, I think if you can get something sustainable, the only way to do it is through this kind of partnership that you have. Um... I'm working now really closely with the UCLA Lab School. We have a lab school, that's pretty diverse, reflects California census. So we have a lot a kids with different kinds of com—we call 'em complex learners. And really working on trying to get something sustainable. Some sustainable change. And it's... it's got issues in a different way than some a my low resource schools in L.A. So right. So you have to get in there. It's, I've been working now for two years, and we haven't really done any research yet. Right. So just takes time. But, uh, one thing that doesn't work, top down, into the school. It just doesn't work. Why should you; you don't know what you're talking about, right? They're there on the ground, so, you have to partner with them. It's tough.

**Q:** Hi my name is Veronica Vidal. I'm from University of Illinois. Um... and I have I guess two, uh, one question with 2 parts. One is, um, I'm, I'm really interested in your results, and I was thinking if you have or plan to co—uh, have some measurements about quality of life indicators. **(Mm)** And the second part is, well I'm working too in, uh... put intervention these signs, but more focus on peer interaction. And so I, I would like to know what you suggest as a measurement of quality, quality of life indicators.

**CONNIE KASARI:** Hm. Quality of life. You know, I think there are better measures ow, quality of life than there were in the past. Um... but I don't actually look at that. So, I think it's good, I just... you know, I have a limited bandwidth. I do look it peer interactions. Um, I've done a quite a few studies now in schools, on peer relationships and peer interactions, and, friendships, all separate kinds of things. Um, so we've tried different ways of... improving social communication and social outcomes in kiddos, mostly that are verbal, in, uh, elementary, middle and high school. So... that's a whole nother talk, right? And there's a whole bunch a things to consider. And I've also just done a pilot, smart tryin' to think about really moving those kids along. Because what I've learned from just doing randomized control trials, with different interventions, different targets of intervention, paraprofessionals or teachers or whomever, um, is that again, kids are heterogeneous and you need to think about, what kids need at different stages. So the first thing we do in schools is think about the environment, right. Because it's not about the kids a lot a times, it's about the adults honestly. In the classroom, the adults on the playground. So we first, we have, um, um, inter—an environmental intervention called *Remaking Recess*. Can download it from the... Air B website. Um, and that is really to change the environment. It's to teach the paraprofessional, change that environment, so that kids can be successful. If that doesn't work, we have a couple more things that we've tried to do. But I think that's a great area. And that's a place too where speech and language therapists can really have an effect, because you can work on those pragmatics of language. That's a lot of what we try to do, right. Try to get them to be more flexible, right. So you're working on executive function, you're working on, um... uh, social pragmatics. You're working on lots of different things to help that kid really connect to his peers. And we have measures. We do a



social network measure in the classroom, we do observations on the playground. You'll see it all if you go to that website.

**MARGARET:** Oh we have time for one last question. Dr. (inaudible name)

**Q:** I'm stepping in and pretending to be a (Laughs) graduate student researcher. But I just ha—I'm dying to ask this question. I mean it's fabulous that you get change in productive language at this very minimal level. But something, uh, as a language development researcher, I just get so disturbed by the use of telegraphic speech.

**CONNIE KASARI:** Yeah. (Laughs)

**Q:** On the part of the SLP. So, (Several people laugh) from everything we know about early receptive language, we know that these little functioning words, like articles and past tense, and so forth, and the argument structure of verbs, everything that the child is learning over the first 2 years of life, is violated when you say something like "Bob's fixing" right, (**Um-hm**) or Bob Fix. I mean, (Laughs) there's no way that is an adequate sentence of English. And I know these are minimally verbal children. (**Yeah**) But if we're going to get a transition from there... to genuine language, (**Yeah**) what's the harm I just saying it with an "it" or saying it with a "the." (Several people laugh) It's hardly pronounced. I'm surely we should move forward in that direction. And I know of no evidence that this thing helps children, (**Right**) to speak as if you're . . .

**CONNIE KASARI:** It's just irritating to hear it.

**Q:** Exactly; it's more than irritating. Which it's, (**Totally**) disadvantageous to the (laughs) . . .

**CONNIE KASARI:** Well so I think we started off much more telegr—uh, you know, again, I'm... coming in and we're blending EMT. I think that EMT has evolved overtime too. So now that it's using much more natural language. In JASPER we tended to use more natural language. But, but also we don't wanna overwhelm a child with autism with too many words, and not giving them space to respond. So this narration... of activity which some therapists will do; they'll just narrate the kid's activity. Constantly. There's no space for the child to talk. So there's a balance here. And again, those kinds of questions could be empirically tested. To my knowledge there's no evidence that one approach is better than another. So you have your personal pr—oh, wh—excuse me, there's I, I beg to differ, right?

**Q:** I want to bring attention to a wonderful, uh, study and paper by Courtney (last name) Susan Ellis Weismer, and myself. And there were a couple of other people, and that's exactly what we demonstrated at the parents. We, we focused I think exclusively on articles. And that if the parent included was a naturalistic study, it was not in our RCT. The child made more gains over time in longitudinal, uh, uh... gains in language than if they omitted them because of what they were being guided by their therapist. So there is evidence for exactly what Jill's Aussie . . .

**CONNIE KASARI:** I stand corrected. This is good. So adding more natural language is, yeah. And I think that people have moved towards that. We certainly... yeah.

**Q:** Yeah I just wanted to say in my dataset as well, parents who speak in more complex utterances with more grammatical warpings, these are parents of children with, you know, who are low verbal. But they are the ones who show the, the highest outcomes (**Again**) of, of expressive language. (**Um-hm**) Um, one to two years later.

**CONNIE KASARI:** Yeah. Well that's; I mean that's great. So, I need those citations. Um, but the other thing I think is, but still you wanna give ch—children space to communicate.

**Q:** (Inaudible comment)

**CONNIE KASARI:** Yeah.

**Q:** (Inaudible comment)

**CONNIE KASARI:** Yeah. Yeah. Yeah, yeah, yeah. Good. Okay, so I irritated everybody with like nails on the chalkboard. (Everyone laughs) This is what I do with SLP's in the room, right? (Laugh) Yeah.

**MARGARET:** Is the symposium over? No. (Everyone laughs)

**CONNIE KASARI:** Let's end on that note. (Laugh)

**MARGARET:** Please, please, let's, let's (inaudible words).

(Applause)