Suzanna Adlof, Pamela Hadley
Laurence Leonard, Sean Redmond
Mabel Rice

MARGARET: We have had a tremendous day and I, I think we should start off by thanking our panelists for being here and bringing everything today, and for still having energy to participate in the panel, so I just wanted to start by thanking you all. (Applause)

And at this point, we are opening up questions to anybody who as a question on anything. (Several people laugh) Well no, sorry. (She laughs) Related to the topic. Um… so is there anybody that wants to get goin'? Oh good. I feel like I should have a prize for you. Come on down. (Laugh) And all of us, please introduce yourself so we'll, we know who you are.

Q: Thank you. I'm Sarah Benham I'm a doc student at UT Dallas, and I'm here with Elena Plante. I just wanted to thank you all for your talks today. I learned a lot and it was just wonderful to hear from you all. The question that I have is, I know in reading these papers and hearing these presentations, thinking about the role of comorbidities in the diagnostic profile of children with SLI or DLD. And, and I was just thinking about you know, to what extent do these comorbidities inform the profile of SLI and DLD, and how can we better integrate them into the laboratory setting. And also, you know having you all sitting here in front a me, I now just wanna ask too, in consideration of that, what would be kind of your dream diagnostic profile that we could all maybe get on the same page with, in thinking about (Everyone laughs) you know the role of all this. What's your, what's on your wish list?

MABEL: I'll be happy to start that one off. First of all the… the speakers of today's symposium as I said at the outset, was lined up to talk about the science on SLI. So part of the (Laugh) part of the answer is we don't have a science on this definition of DLD that's in play now, we just don't. The… some of the history of the work on, on the diagnosis of SLI has been informed by the earlier work of Stark and Tallal dealt with comorbidity as kind of an issue in heterogeneity in a sample of children who have language impairment. So much of the… value and long term contribution of the definition of SLI is it helps us restrict heri—uh, heterogeneity or unknown sources of error variance in that when we do these comparative studies, and I'll let whoever else here wants to pick this up, then we do have a definition of the SLI for the language impaired group that can be compared to definition of another group. IN principle, it would be possible to compare well, SLI with NLI as has been very well illustrated in a variety of studies. So… and it would be possible to do future studies on what are the differences when you do combined categories of the configuration that has now been put in play, where you let in some of these other disorders like ADHD. I think what, uh, uh, not letting in ADHD, but letting in some of the other neurologically based disorders, remains to be done. And, some of the papers that have been reported here have been examples of how we would expect to do that, to sort these things out. And I now yield to whoever else wants to jump in.

LAURENCE L.: I just wanna respond to a, another part of your question, what would be the dream. I would, I don't wanna put it quite as the dream phenotype, but there's, there's one thing that I think is, that we struggle with in SLI. If you think of autism, where there's enormous heterogeneity, three's a lot of multifactorial things going on with that, but the public and the professionals understand that there's one key element, despite this enormous variability in level and in profile. But there's one key characteristic, you know, in autism that people identify. And, with language, people aren't able to identify something in, in quite that way. And so I, uh, put it this way, I'm jealous that there are areas, even though they got a career's worth of, of work ahead of them, to really understand the puzzle of autism spectrum disorder, nevertheless, they seem to be dealing with an entity that people are, are really recognizing. And we, we fight that, that obstacle a lot.

MABEL: let me just add. I just want to ask Larry for clarification. You mean the, the general public recognizes people with autism, but the general public doesn't recomi—recognize kids with language impairment, or the scientists can't sort this out?

LAURENCE L.: No, no I, the, the former. The, the former, much, much more so. That, I mean, this, the symptoms are such, where they're not confused as, you know, oh, he'll grow out of it, or she'll grow out of it, like, like as in the case that could actually, can occur, does occur, in, in terms of mistaking language impairment for you know something that's a, a maturational factor until it's kinda too late. And then, and then we jump in. That's really what I was referring to.

SEAN R.: I would, maybe jump in with an observation or, or an opportunity. So one lesson we could take from the ADHD literature is that we should start engaging in more cross ideological comparisons. And, for a lot a questions, the appropriate comparison group isn't a typically developing control group. And so if I'm interested in some putative mechanism that I think is deficient in specific language impairment or DLD, there is probably a clinical profile that already has that as their main defining feature, and you could recruit children from that group, and then look at whether or not your expectations about the links between language and this non--language mechanism are actually there and operative. So, children with developmental coordination disorder, children with ADHD, come to mind, as good candidates for some of the, some of the models that are currently being considered with specific language impairment.

Q: Okay, thank you. And did you have anything?

PAMELA H.: Can—Well I'll jump in on, from a slightly different perspective. And I wanted to pick up on your topic of comorbidities. And so, I guess one of my dreams would be that we would… as a scientific community, and as clinical practitioners, move towards more shared and agreed upon measures that we used across those settings, because I think we tend to have measures that we're using in, in the science that don't get carried over into clinical practice. And some of the measures in clinical practice, we just can't get clinicians to give up, even though we know they're not sensitive to kids

particularly with an SLI kind of profile. So that's, that would be one dream. The other piece is that—and, and the reason to get towards more uniform measures, and start to pick up on what those measures might be at different ages, because we really need to be tracing kids in our clinical practices, as well as our research studies longitudinally on shared measures, so that we can get a sense of how they change trajectory over time. And I guess when I think about it too, we're gonna need more team science where people with different areas of expertise are coming together. And the reason that I say that too, is when I think about my 2 year old, you know, I know that I had one little guy who was probably way more a dyslexia profile because of the way the grammar came in and the lexical retrieval did not. And I know I had a little girl in there who, you know is kind of in that mild moderate group who had a clear family history of ADHD, and I didn't know enough then to really appreciate what I was seeing, but having these kinds of measures across the different specialty areas that could really track how kids with comorbidities develop longitudinally I think would give us incredibly new insights.

MABEL: How many; how many of you in the room here are involved in clinical practice now as your primary employment situation? And how many of you in here are primarily researchers? Okay. So, we are, we are in a room of more researchers than practitioners. How many of you in the room are in training? Doctoral students? Okay, fair number of those. Some of us have kind of been through all those different sets of responsibilities. One of the things that comes to mind from your question and the responses are… that… from what we understand in the work our lab does with practitioners and asking, asking them about what they're doing, there's great variation in access to materials for diagnosis. So one of the things that we haven't mentioned here today is that sometimes we don't think of it as diagnosis when we're doing studies of children who meet the criteria for SLI. I have to tell you that in the longitudinal work that I'm doing where I'm working with families, one a my big anxieties is to go home and get written up all the data we have from the siblings of kids with SLI. We know that almost all of them were not identified as bein' affected when we know they're affected and they stay affected for years on end. And this is an interesting group of children that you just can't go out and get. So we have that information, it's a pledge, I will do my best to get those papers out here soon. But I want to return to the notion of diagnosis. And out of those of you that are in clinical practice, are you able to do a diagnostic workup on the children that you see? Do you have access to… the kind of standardized language tests that allow you to know if a child is at the 85th standard score or the 15th percentile on some good measurement system. And, are you able to get information from somebody in your system about the nonverbal IQ level of the kids that you're seeing? So we, we've had children referred into my lab, a little girl that was sitting in a classroom, she had a nonverbal IQ of 60 as it turns out. When we tested her, her language was fine. So she didn't come into our study because her language was very good. But she was sitting quietly in a classroom with a nonverbal IQ of 60, and there was no one to catch that child. Do you want to speak to what I'm talking to? You at the, at the microphone.

Q: No. (Everyone laughs)

MABEL: Does anyone else want to come up? The… I don't want to preempt if you have another question though. Do you have another question?

Q: No that was it; thank you so much.

MABEL: Okay. Tell us, tell us about diagnosis. Tell us about, is that, is that something that somebody's told you can't do, that you just have to come up with a, an immediate treatment plan and that's it?

Q: Hi. I'm Sue Ellen Kraus. I have the… good fortune of having a private practice in the city of Chicago. And so… you know I lay, I lay out the plan when people come into the practice, so people know what they're getting into. And I do very thorough evaluation services. And when necessary, either in, either refer for a neuropsychological evaluation or read the reports that come in from, from neuro psych evals as well as school reports. Interestingly, three's a boy who just came into my practice who I evaluated at the age of 9 ½ years old who really never has had any treatment. He started out in a Montessori school, and was very compliant and quiet and cooperative. You know that we've heard the story before. And eventually was transitioned into a more structured program. But, in the schools, was only afforded 30 minutes weekly for a year. So now he's in real trouble, you know, with the… primarily language disorder, but literacy disorder, having difficulty with reading fluency and with writing. Thank you.

MABEL: Do you wanna comment on that?

PAMELA H.: I'm good.

Q: That's fine, 'cause I'm gonna ask about a very similar question. So my name's Crystle Alonzo. I'm a protégé here with Shelley Gray. And I'm a postdoctoral student at the University of Montana. So, I actually am quite interested in clinical practice research, and the applicability of what we're studying. And I, I think this is a very balanced panel where we got to hear about those who are thinking about how this will actually perhaps apply with… our clinicians who are getting those 30 minutes once or twice a week in schools. But I really would love to hear a little bit more about what you all might be thinking in terms of, we've talked a lot about diagnostics, and I, I know Suzanne Adlof's work, and that she's thinking about progress monitoring and, and how to do this in schools. But it just, listening to Dr. Leonard, and, and his study of like well how can we pull that very explicit, those many exposures, that, you know, the variability that they need to, um, hear the different complex things, into a school setting, which my background is as a clinician before I went on to research. So I just would love to open up and hear that discussion from you all.

SEAN R.: So, I liked your question, but I'll answer a different one. (Everyone laughs) Um… one of the, one of the things that em—embracing the idea that there are diagnostic boundaries, which is the first thing you need to have before you can even talk about comorbidity, or differential diagnosis is, I, I wonder how clear… the boundaries of our scope of practice are, relative to other… clinical responsibilities. Responsibilities of

other clinical professions. And, um… and I, and I think this is true, 'cause it, I've had a few clinicians report back to me, that when they go to, when they go to ASHA sessions, or conference sessions, they're introduced to new things to worry about. And, what they don't often hear is, here's some things you don't have to worry about. Here's some things that are not in your scope of practice. And… that could happen as we think through what is and isn't a language impairment, what is and isn't a pragmatic disorder. But at some point, some place, our scope of practice has to stop. And, and if we can't conceptualize that or think that as a boundary, then that's, could be the real problem with this ironic situation where we have crushing caseloads, and yet the majority, the vast majority of children with, with the profile that we've been talking about today are not receiving services. So it can't be the message to clinicians, oh by the way, you need to like triple, quadruple, maybe by a factor of 6 the number of kids that are on your case, on your caseload. The, those kids in our study sample who were getting services but didn't have an identifiable communication disorder that we could see, are an interesting place to start this conversation. Why are they there. What, what is it about the concerns that are being brought in by the parents or the teachers that got those children into services, that doesn't translate into a language impairment, but is somehow sufficient enough to occupy our services? I don't have an answer to that. (He and several others laugh) But, but I think that's, I think that's a legitimate question to, to… to start thinking about where we wanna go with this, right. So we can, we can squabble about criteria and who goes where, and what does what. But if we, we can't think about what isn't a language impairment, then I think we're in big trouble.

Q: Can I just ask; (yeah) I wanted to ask a clarifying question, which is, is it possible that the treatment worked? And so that's why they're not showing, like the, you know so that getting services, but . . .

SEAN R.: Well then, then, then the, then that could be a scenario where well, what, what is the dismissal criteria calibrated on, um… an objective criteria. Yeah, you're right, there's, there's all kinds a reasons.

SUZANNE A.: I guess I had another answer to Crystle's question about like how do we… how do we take the evidence from Dr. Leonard's work and apply it in practice. And I think that's what really good intervention resear—I mean that wasn't really intervention research, but it was an intervention. This kind of research is really powerful because the kids were learning, and the, we saw the effects of learning in 5 minutes. and, so if we think about like the, the kids who were performing like typically developing kids in this 5 minute session, and when you, when you structure the input in this way, you get this effect that's robust over a week. But when you do it the traditional way it's not. I think that's really powerful. So it's not really ready like immediately for implementation, but it's on the path. And if we're thinking about how it would be imp—you know, implemented, then, we can get there.

Q: Hi. I'm Arielle Borovsky, Purdue University. One thing I'm wondering about, sort of listening to all of these talks today where we're talking about kind of clinical boundaries, who should we be screening, should be screening them all. What kind of

mechanisms could we even target for intervention and treatment? what exactly is the problem? And I'm wondering about another kind of… trend in education now which is the idea of like individualized kind of education and how we might even be able to leverage technology to deliver… just normal everyday kind of learning to children based on where they are at in the moment. And, if this might serve as a promising avenue for us as a field, and that not only are we screening and monitoring progress kind of continually, but we don't need to even worry so much about these… like are you at 86 or are you 85 today, right? And if like we can help children sort of where they are at in the moment, and maybe even kind of you know, this, gives us a different role for where the SLP in a school might be. We're not adding... maybe they, they're, they're kind of tending to the needs of, of all children in the school, but, in a sense of, you know, we don't need to pull out this child for this extra intervention, but maybe we need to sorta tweak their kind of own sort of educational progress in, in some way. And where people see that's kind of, where people see the, the kind of future for that and where that's going and, and what we can do here. So I'd love to hear your comments on this idea.

MABEL: Well I, I'll jump in a little bit. I think one, one take home point of the work of people like this panel is, the… the replicated scientific studies that demonstrate that these children exist, and their parents exist, and other members of their family exist who weren't identified either. And one of the things that we can provide for practitioners is… this kind of a document. That if you don't have one, I hope that you take one home with you. We didn't bring enough for today. They're available from the National Institute on Deafness and Communication Disorders. So it provides validation that these people have a significant individual difference that is often, and mostly unidentified, and this institute is willing to put money into these studies to help us un—under, uh, understand better the cause of this difference and how it aligns with other diagnostic categories, and how do children do on a very well controlled study of vocabulary development. Because it's very important to dig into those fundamental learning mechanisms. And we saw a premier example in Larry's work. It's going to matter to us how we present the new information to the children, and I hope somebody we'll start working with the parents of the children to enable them to learn to do better in what they need to do in their, in their school and in their life. And, it reminds me that years ago I was a doctoral student at the University of Kansas. I went there because there was brilliant work being done on the learning abilities of individuals with severe intellectual impairments to prove that they could learn. That was a, that was an eye opening thing. Most of society believed they could not learn at all, and they locked them up in warehouses, so they didn't get in the way of people who could learn. And it was my colleagues at Kansas and about 3 or 4 other universities in the U.S., that, that demonstrated these people could learn, and they could learn how to function outside of being locked up in an old building. And one of the things I asked, one, my professor, a man whom I respected very much, Joe Spradlin who is still alive, and I asked Joe, I said, "You have demonstrated that it takes almost 6 months to teach these people new words, and you're using nonsense words. So you've demonstrated they can do it, but it takes a lot a time under highly controlled circumstances, with very careful presentation and reinforcement schedules." And I said, "Does it ever bother you that you're not teaching them real words?" And he (Laughs), he paused for a graceful interlude (Laugh), and he said, "No, it does not." (A few people

laugh) Because what we are demonstrating is that they can learn, even nonsense words, and we are learning the fundamental mechanisms by which they learn that. And that's essential if we are going to understand better how to do that. Now, we all take for granted that individuals with intellectual disabilities are no longer locked up. That's because of the work of fundamental scientists who did the kind of studies like we're reporting here, to show that people's understanding about causal pathways aren't right, to show that we do need to do the kinds of studies that drill into the details. Whether it's Pam's… amazingly complicated and time consuming and technically accurate analysis of children's spontaneous utterances. We don't support that as a society because we believe that every teacher out there is gonna jump right in and do that same thing. We're doing it so that it can be distilled into the kinds of efforts that are likely to make a difference, and exactly where to look in that kind of information for what we need to know. And that depends on the minds and the commitment of people like Pam. And Suzanne did that beautifully with reading. We're beginning to sort out that kids with dyslexia are different from kids with language impairment. They both wind up with reading problems in 3rd grade, but they're a different kind of reading problem. Another analogy I'm using is breast cancer. We want a world, where when we go to the doctor we're told something better than you have a lump in your breast, and those basic medical scientists have spent years and decades of their life to sort out what's going on there. And we now know there's different kinds, the prognosis is entirely different, the treatment pathways are entirely different, the genetics are entirely dif—different, depending upon a very precise diagnosis. So, I'm happy to have the opportunity to kinda put into context the work that we heard about today, and the work that remains to be done in translating it into the real world of how to help people. But we start with this. Okay. Thank you for the question.

Q: Hi, Sean Stalley from South Alabama, Dr. Matthew Rispoli is my mentor. I didn't know if I had to restate that or not, but here I am. So I'm, I'm, I come from a linguistics background. I'm, I'm a doctoral student in CSD. So my clinical experience is somewhere around zero. Just about there. but, so, my understanding, my, my education so far has been kind of you know catching up, catching up with what's going on in communication sciences and disorders, because you know, linguists generally don't… besides aphasia, I my education, we didn't really touch anything about disorders, right. So kind of as a, I guess an inverse question then, that I wanted, that, that's the background I'm coming from is, for the panelists, what recommendations would you make for, if any, for improving the education of SLP's in order to bridge the gap between the kinds of research that we see today, that we saw today in the presentations, and clinical practice? Specifically I guess, not specifically, it can be about any particular sub field or topic, or any kind of improvement you would like. But for me, for instance, you know for the technicalities that, uh… syntactic com—complications for instance that Dr. Rice and Dr. Hadley point out, and Dr. Leonard point out, in research, how do you best prepare SLP's for kind of engaging that work and putting into clinical, clinical practice? But it could be beyond syntax. I, I'm a syntaxitian, so I'm more focused on that, but. (A few people laugh)

SUZANNE A.: Have a really… strong opinion about this, so it's like I, I'll talk. So, it is not uncommon for a Master of Speech-Language Pathology programs to have one child language course in the Mater's program. And so that child language course will cover, 'kay, you know, sorry birth to 21.

Yeah.

(A few people laugh)

And, um, and that that's a lot, you know. We've talked about a lot of stuff here, but, you know, it's, it requires some background to get. So I think one thing we could think about is you know, expanding the amount of coursework that we offer. I know that is not exciting to students. But I think just the idea that we would teach all of child language in one course is, is problematic. So, that's, that's one thing I would do.

PAMELA H.: I guess, one of… I think the most; yes, I think we need curriculum revisions. And one of the challenges, and this speaks to Sean's point, when we keep adding more to our scope of practice, we can't just keep adding more to our curriculum. And so that, that's a challenge there. But I guess one of the things that I feel is the single best thing that we could do is to really begin thinking about some of these details with language analysis in the context of labs. So, you know, I think that almost every one of our programs really has a clear lab component to phonetic transcription. We need the same kind of commitment to language transcription and language analysis as part of our curriculum so that, because you can do a language sample analysis with one child in a class, and it's not enough to get people feeling confident. And if you don't feel confident about it, you're not gonna continue to engage in it. So you have to either work very hard to bridge the classroom and the clinic so that the students in the clinic are doing it constantly, which was the good fortune that I had as a Mater's student. But if not that, then how do we get a lab and get skills based education into our clinical prep, preparation program?

(Inaudible comment, and several people laugh)

Q: Hi, my name's Lauren Baron, and I'm at the University of South Carolina. I'm here with my mentor Tammie Spalding. And my question is still kind of in this area of scope of practice. And as we think about whether it's an exclusionary criteria for how we think about language, or something that's possible related to language. What… advice or idea or concerns do you have about SLP's approach other complex ideas like intelligence and executive function and attention, when they bring that in to their work? And one example of that, I wanted to kind of address to Dr. Redmond is, when we think about rating scales is one way to measure attention, versus other things that are subcomponents that maybe underlie some of the things, things like attention and executive function. So just how do you navigate? You know language is complex, and so are these other things. And is that our job? Is it someone else's?

SEAN R.: Um… I, I think there are… forces, pressures, in… work environments for us as speech-language pathologists to be jack of all trades, and… work with everybody. And, many clinicians report back to me that they get the sense that, that they're the only ones left. That the, that the presence of the clinical psychologist and social workers and other healthcare professionals is pretty minimal. And so they feel conflicted because these are children who are clearly struggling, and they need help. And… the, the risk that I see for professional practice is that we can, we can… unintentionally degrade ourselves into sort of the all-purpose tutor for kids in Special Ed, for something that's kind of like a life coach kind of approach where we're-- So, not every problem a child has boils down to a communication disorder. And… I, I don't think we should be messing around with, with… things just because they're shiny. And so, yeah, I don't see a clear connection, and people can argue with me, they do all the time, (A few people laugh) between executive function and what I see as the scope of practice for someone who should be focusing on the domains of language. Now that's not to say that isn't a problem that our kids have, in that would fold into sort of like that second category of, of symptoms of clinical management. But that would be the place where the interdisciplinary transdisciplinary, whatever disciplinary team, someone besides us comes in, and helps out with that aspects of that child's management. That's what I think.

Q: Shelley Gray. I think one of the discrepancies between we scientists and the clinicians that are out there working every day who face a lot of problems is the prize. What, keeping our eye on the prize. And I think parents in there too. So, look at the reading comprehension levels in our nation compared to other nations of the world. Seems like a clear tie back to these unidentified kids with language impairment who aren't getting any services. So the eye on the prize is that we would be able to produce students who can compete in the world, can read and write, can access health literacy, because they're literate people. We as scientists are pretty happy with baby steps because it takes baby steps to do a lot of the underlying work. I think what the community and this research to practice are asking for is that we perhaps come to some agreement on what the prize is at the end, and acknowledge that there may be some other things besides our baby steps that we need to do to get there. And if I'm the parent of a kindergartener, that the screener has just identified with dyslexia, I don't wanna wait 20 years for, for my student to be able to make some progress. So I think the coming together of the researchers, and the clinicians is important for multiple reasons, and that includes scope of practice and how we're training, which may require a whole redo of curriculum. Here we are all working at universities, and I don't think we're doing a great job of revising curriculum to reach this. So I think it's kind of a 3 part. If you'd like to chime in, I'd be interested in what you think.

LAURENCE L.: Of course I, I don't have a good answer. But to the extent that I was understanding your question, it almost sounds… though that to handle the big problems without taking these baby steps, these are policy kinds of things. I mean, there are pros and cons to that. One can look at the… Head Start movement for instance, and, and all it brought. But on the other hand, you know, oh, it took decades to try to sort through the data, what's effective, what isn't, because of all the lack of controls, because this is one very, very large program that was, you know, pla—put in place for a very good cause to

answer a very, very big question. So, I, I think that you, you can't answer that question without getting into a policy issue, and therefore you have to make some decisions. And ironically a lot a those decisions are gonna have to be based on well what does the current sci— if we're gonna be taking such big steps, we need to make sure at least some of the science is there in order to, you know, know what general direction. So I totally support the, the idea in, in spirit. But I think it, it gets into, into policy as much as it gets into big science.

MABEL: I, uh, want to just build on what Larry said, and I appreciate very much Shelley's encouragement to… move beyond baby steps. On the other hand, I'm aware of the fact that after the germ theory was developed back there in the… (Laugh) somewhere after the Middle Ages, the people who realized that germs caused disease were vilified for a very long time. And it took something like a hundred years to get doctors to wash their hands from one, from one surgical… uh, operations to another one, and when they would see one patient to another one. So, when we go into the hospitals now and see all of the sani-wipes that are hanging on every wall, that's to ensure that the doctors and nurses wash their hands. We've known for centuries that germs cause disease. So, (Laugh) we have a, we have an uphill battle to… work with people's built in assumptions about why people communicate in a way that wasn't what they expected. So I'm not, I'm not sayin' we don't take on the good fight. And most of us up here are actually involved in that. The other thing that I… I'm noting in my mind, including with Shelley, is those of us on this panel, have made commitments to longitudinal studies. Longitudinal studies cannot be done by practitioners in the way in which we do these group based long term longitudinal studies. And that's not a baby step, that's a huge step. And we're learning from some of the work of our colleagues in Canada. I think Beachman's work on… what happens to girls with SLI, has shocking… impact on us. Basically the short form of the research is that it documented that women in their 30s who had a documented history of SLI as little girls, and had been followed, were 3 times more likely to be sexually assaulted. That came out in their adolescence. They, uh… confirmed it again when they were in their early 20s, and again in their 30s. That's long term stuff. And it causes us to think more carefully about the many ways in which the provision of special services to these children in the schools to make it known to everybody that they warrant special services, because they have language problems. And if nothing else, it helps the child and their family maintain their dignity as they go forward. So we haven't even gotten around to understanding what the long term implications are for when somebody cares and somebody understands, even if they don't know exactly how to increase their vocabulary to the levels expected for the age level peers. It's, it's a big job that we're involved in, and that's why we're all here in the room.

Q: Hello, good afternoon, my name is Stephanie De Anda. I am an assistant professor at the University of Oregon. Thank you very much for a lot of stimulating talks today. My question is about, you know, a lot of the, the issues that you raise, even in this discussion now, are exacerbated in the context of underrepresented communities that speak things other than English. And so, you know, w—we had some talks to, uh, at this co—very conference about how we see over-diagnosis in particular communities, African American for example. We're doing a, a records review of assessments in chil—of

children in Oregon, and they're finding too that Latino students are also getting over-diagnoses. So, how do you think about those issues, and what are the ways that we can, that you think some of your work translates to, translates to this context? Just your thoughts about how that interacts with race, ethnicity, language, etcetera.

SEAN R.: There's evidence of both over and under-identification in those groups. So it's something we have to be really careful about. So the, the arguments for over-identification are because the groups; so if you're, for example, if you're talking about African American, if you compare the rate of a certain disorder in the African American population to the rate of a certain disorder in the Caucasian population, you'll see a higher rate. And so that's where that argument of over-identification comes from. But I've been really following Paul Morgan's work on this. And when you control for… socioeconomic status, or other things, then that, over-identification actually becomes under-identification. I think we just need to be really careful about this. And if we're thinking about does this child need help to succeed in school, maybe they do. Even if the diagnosis, you know, maybe it, maybe it's not a diagnostic category, but they need help to be successful in school. So I think kind of just going back to some of the conversation that we had earlier, we need to think about what the goal is. So is the goal to understand a disorder and to understand the characteristics of the disorder? In that case we really need a homogenous group, and we need to be really careful about our diagnostic criteria. And then we need research to show that the treatment matters for which group you're in. Until we have research that shows that the, that the treatment matters for which group you're in, we don't necessarily need to, you know, we can, we can then think about well what's good instruction regardless of a diagnosis. As in the case of word reading, we know what good instruction is, regardless of the diagnosis. And you just need more of it, if you have a, if you have dyslexia. Needs to be more intensive and more explicit and more systematic. But it's, it's still the same kind of intervention, so, um-hm.

SEAN R.: Um… but I think your observation, uh, adds more urgency to the idea that maybe the referral model has outlived its usefulness. And, if we believe that a language impairment is as critical to success as identifying a visual impairment or a hearing impairment, or a reading risk, where we don't trust referrals to identify kids at that, in those categories, why, why is it that language isn't as important or urgent as that? And what is' or, and/or, what is special about language which means a referral system is the way to go. And, the disparities in either direction argue that it should be sort of a dispassionate, unbiased objective kind a measure. And I'm, I'm not suggesting that we're there yet, but I think it's an attainable goal, that we could get there, is the model we should be moving towards.

Q: Hi, Tiffany Hogan. I wanna thank all the panelists for describing their programmatic research in specific language impairment; very informative. And I want to… bring up the efforts that have been in advocacy around DLD. Dr. Adlof brought up the DLD and Me campaign that Sean Redmond and I have been involved in. And I want each of your, to weigh in on, how do you see the… the programmatic work you've done in the past and in the future, how does that relate to the advocacy that's happening now in DLD?

SEAN R.: Well; I, I hope that it, it informs, or encourages, or supports advocacy efforts at some level. I… I do think sometimes you slip into a false dichotomy that it has to be either DLD or SLI. And, we need to all get on the same page, and we all have, need to have the same branding slogan going. I think there are… if you get, if you wanna think about DLD as a broad clinical category, that is a good fit for the reality of clinicians that have to work with kids that have all different kinds of profiles that are idiopathic apparently in nature, and but include a range of abilities in other areas. I don't see the, the… the promotion of visibility, or awareness of that as necessarily incompatible with the work where we're, that we're doing where we're slicing out subgroups for particular purposes. So, one thing I'm starting to appreciate, if you wanna study comorbidity, you gotta be agile and kind of like float between more specific profiles and more generally compromised profiles. And you need some terminology to like move around in that. And so I, I think if you don't have SLI's and available category to describe your population, your study will be compared to another study that includes a wider range of kids, and there might be incompatible or discrepant results, um, that enter into the literature and add confusion or noise. I don't know if that answered your question, but.

MABEL: I, I would second that. I think that, uh… in our, in our research efforts, we want to be sure to use SLI to label the more specific diagnosis for a host of reasons. One of the challenges in the DLD usage as advocacy is that it also carriers other meanings here in the U.S. So, developmental language disorders, I'd publish with this, with this title. I even have an edited book, that that was the tile of, *Developmental Language Disorders in Children*, which is the umbrella term to bring in language disorders manifest across a variety of, of conditions. So it's really an overarching clinical term. It's not used in that way when we're looking at causal pathways or diagnostic identifiers, or any of the things that have driven our work in SLI. And then it also gets confused with developmental learning disabilities greatly as well. I personally think that we do need to put SLI out there as, um, a descriptive category. It's the majority of the kids that are now sometimes running under the, this new DLD label. But it is, it is a large proportion of children who meet this definition, and we do have a solid literature base behind it. I see, I think that's—do you wanna say something? Yeah.

LAURENCE L.: I just wanna, I really wanna say that… that the advocacy really needs to be from that grassroots. Practicing clinicians. I mean for, for years, many of us in research had learned from practicing clinicians, well, we don't really have many kids in this caseload because we, because they, sure they got the language problem, but they have this subtle problem in this area and this area, and they don't have a pure deficit, and so on. But, another point I think is, well what were you calling these kids? You know, are they getting service in the first place? And of course they're, what these children are being referred to, it's all over the map. And, whatever you think of DLD or SLI, if there's inconsistency in how these kids are even being referred, I mean you know, I, I've written a little piece, at one point it says that, you know, in… I mean what basically happens, we, we see kids who have longstanding language problems, and then at a certain age they get an ADHD diagnosis, and that trumps everything. And the focus is gonna be on ADHD for instance. Their language problem did not go away. And I, I would argue that one of the reasons why this occurred is because people know what ADHD is.

There's, there's a concern about ADHD, and they want to help kids with ADHD.. And somehow the language stuff is sort of amorphous. Maybe it's, it's their attempts to even sort of fold it into the problem. So I really think at the grassroots level, there needs to be a lot of, uh, agreement on the consistency of the terminology, because it's, it's, it hasn't been helping for decades. I was frankly, Pam, Pam, um, and a, and a colleague, one, long ago argued in a nice paper, that SLI was really good, because this gives parents and professionals a common term to advocate for these kids, while the, the, as we know, that really term hasn't been picked up. But, the lack of consistency has really hurt us.

PAMELA H.: I guess I'll make one comment too. So, in terms of how I'm managing this… terminology issue is, I tend to talk with my students about SLI as the largest subtype of DLD. So DLD as an umbrella category, SLI as a specific subtype. And I guess my feeling about it from a research standpoint is that we have a, a, an empirical problem to solve, right? We need to gather the empirical data to say how does language grow in populations of kids who have, we, we know a lot about how language grows in populations of children with SLI. What we don't know is how language grows and changes in this population that's more broadly defined. And if there's the same kind of regularity that we see when we open it up to all of this, to the broader characterization. So, um, as I mentioned earlier, in our clinical trial, the way that we're handling this, is we're recruiting kids broadly so that in the pra—in practice based research, that they will represent the kinds of children that are on caseloads. And then at the very end of the study, we'll go back in, and we have in our clinical protocol, um… to do subtype analyses, and to say okay, let's talk about how the children responded to the treatment, who fit our classic definition of specific language impairment, and we'll see whether or not they respond in the same way as do children who have a broader DLD profile. And so for me it's an empirical question, and we need… intervention research that represents kids on the caseload, but we need to retain this distinction in much the same way we need to understand dyslexia as a subtype of reading disorders.

SUZANNE A.: I think also, so, going back to the grassroots, one of the reasons why I think my hypothesis would be that the grassroots works for dyslexia because people can see the word reading problem, and it can work for ADHD because they see this behavioral manifestation, they have that's, that's an observable problem, and it's something that you know teachers will write, you know, tell the parent 'I'm having trouble, you know, managing your child in this classroom, we need to get that investigated. And the problem for language is that we're not, it's not measured, we're not seeing it. And so if, if instead of, it, so, Hugh Catts in arguing that we should throw out reading comprehension assessments. And, and I don't know if, if I completely agree. But maybe if we were assessing language as part of, um, an ac—as an academic target, the way that we measure word reading as an academic target. Then that would, you know, allow parents to see. You know, it would make it visible. And so, then a grassroots effort might be a little, you know, have so—have, have, have more traction because it's something that we can actually see. And I see Stacy standing there, and so she's looked at you know, what, what, what label, you know, what, how parents responded to different labels. And, I don't know, maybe you'll talk about that too, that. (Laugh)

Q: No that actually doesn't have much to do with my question actually. But (Laughs), I have a question for Sean. Based on a comment you made this morning, (Yikes) which I think was a strong clinical marker would be resistant to treatment.

SEAN R.: Well…

Q: So here's my question, okay. So, is that sort of?

SEAN R.: Well no, I, I mean, I guess what I was, the point I was tryin' to make is that it's not necessarily a bad thing if it's resistant to treatment. In that if it's durable over time, in a way that could follow the child across multiple ages, and multiple grades. Then that makes it a good clinical market, right? Is that…?

Q: Uh… ye—okay, so that changes my question a little bit. So I gue—so then my question is, I guess, two questions. One would be; so if we were to identify more of an underlying cause. I mean, I think part of what you're saying is the vitro—current treatments we have are not all that effective quickly, ink like in a very, you know, effective. And efficient. So, if we were to identify more of an underlying cause, of SLI, that could better target sort of, you know the underlying factor, (Um-hm) then might that change sort of what our clinical market would be?

SEAN R.: Sure, sure. I think, I think one thing to appreciate with that schema I was tryin' to lay out is that it's, it's sorta iterative, right? So, you, you build a taxonomy, and you build the categories, and then you ask questions about whether these say boundaries between the categories are permeable or rigid or stable. And then you pursue those trans-diagnostic, um… symptoms and see if they coalesce into some kind a mechanistic explanation. And then if that succeeds, then that creates the next new taxonomy, presumably. And kids that were placed into separate groups are now in this new group. And then we, and then we start the process all over again. I mean that could sound exhausting or maybe like (Laugh) um… sort of bad news or, or sort of discouraging news, but that's, I think that's what's really going on here, right?

Q: So I; so related question is at what point, if ever, are you concerned that we might begin identifying, or are we already identifying something that's subclinical?

SEAN R.: Well, I think… the… the… a general, or like was in the pursuit of clinical markers for language impairment?

Q: Well, in general with what we identify is the language impairment. So for example, like Mabel's reference to breast cancer. There is a concern with something like breast cancer, that you can identify something that's subclinical, that it's identified when you're 80, it will never emerge in your life time, in your conceivable lifetime that is going to cause a health risk to you. Or even at a younger age, that some growths are never going to cause a significant health problem . . .

SEAN R.: Yeah. Well . . .

Q: So similar for language impairment. I'm just wondering if, you know, we can identify kids, we can parse out numbers as fine grained as we want, to find different groups. How do we determine which groups are clinical, and which groups are subclinical?

SEAN R.: Well, that's a super deep question. (Everyone laughs) But I think, I think we have multiple levers. So, one is, if when we have longitudinal data, and we can identify patterns of risk, every diagnosis is just a bet on some unwri—un… realized risk . So it's sort of like, it's not like the diagnosis was false, or wrong, or like misguided, if the child ends up not experiencing the risk that they were at in the beginning. Right? So, all diagnoses are provisional and they change as information comes in. So a child could start off with a really low performance and catch up, right? And that's, that doesn't disqualify the observation that they were at risk enough to trigger concern in the beginning. And then you; to the extent that you can… you can link those… sequela in academic vocational, social domains, into some sort of well heritability. Identify the heritability co—components that are adding to that risk would also be another way of kind of moving away from the possibility of identifying low average performance. Um…

MARGARET: Have time for one more question.

Q: Hi, I'm just a normal clinician. Um…

MARGARET: and your name is Michelle.

Q: And my name is Michelle, yeah. (Several people laugh) Um, so… um… I came to this because… it's a really hard to, to decide on what trainings you're going to, and I really wanna know about current research. But, like today, I wanted to go to 40 trainings, you know. And so I had to pair down to 6, which makes it really, really hard. So, as a clinician, what I really wanna know is… you know what… should I be doing? What is the takeaway? What is the intervention takeaway of the most current stuff that you guys are doing for… SLI as I understand it which would be, my kids that are below 85 on, you know, myself, or my owls, or whatever. And that's what I define it as. Um… and then… I also had another quest—one. I have two—that's my, that's my main thing. And then the other thing is, is anyone doing any research into what I see as a tremendous rise in children entering kindergarten with a language level of abysmal, like the whole class, none of 'em can say anything, none of 'em can talk? They're like entering in as like 2 and 3 year olds. In the last 5 years? So I've been … a clinician for 20 years, and in the last 5 years, I have seen this marked… degree of… children entering kindergarten where they are, are not; they don't have language. Like they don't have language, they don't have the… and, and then the social skills and the behavior go with that as well. So and it's in the last 5 years, and… I attribute it to technology. But I just didn't know if you guys were really looking into that. I'm seeing it every day.

SEAN R.: Wow. Okay. `It's… it's interesting that we're not actually poised at sort of a public health level to answer the question, at this moment in time how many kids have a language impairment? Go. And, we don't have that capability. So, to be able to even document that there was some kind of change up or down, if we're only using cutoffs, (Laugh) it's never gonna change, 'cause it's always the 10th or 15th percentile. So, something like that could happen if there was some sort of… agent. An environmental agent like some kind of chemical agent that's been released into the water, or something like that. That, that could create a spike in language impairments or the kinds of kids that are coming in with weaker language skills. But again, unless we've got sort of a tracking system that's more sophisticated than is this child annoying the teacher; yes/no, to identify kids with language impairments, we're not gonna; we can't even; it's sad that we can't even answer your question.

MABEL: Well, I would just like to pick up on that though. If, if you… if you, any of you are experiencing that kind of a phenomenon, we do live in an era where as Sean says, you can get those effects at a given age level, when something has happened in environmental safety. So this is a classic lead toxin profile for example. And we do know now that we do have lead in many of our water supplies around, and frankly, it's the children's health issues that have flagged this in a number of communities. Or various toxic sprays, stacks in factories nearby, they're putting out something that shouldn't be in, in the air supply. The other thing to look for is patterns of medication prescription in your community, and how many of those are getting into the hands of children, or how many of them are being overprescribed for… fidgety, fidgety kids. Those are some of the things that come to mind.

I want to use this as the opportunity to make final remarks if I can. Is that good Margaret? You guys have been fantastic. Now I hope not all of the practitioners have left, nor all of those of you that were wondering why doesn't science do something more meaningful. There's a number of scientists in the room who've actually developed tests. Elena's sitting there; she's developed a test. Shelley has developed, uh, assessment instruments; I have developed a test. I have an app; I didn't even want to mention it earlier, but now that we're ending, here it is. It's an app, it's called Grammaggio, you can find it free at the Apple Store. And it will give you an iPod version of the tense marker that Sean was reporting in his evidence from his lab and our labs. It runs throughout the whole age span. It's developed with the help of funding from NIDCD, so it's been scientifically vetted to death. And I'm not making any money from it. So… if you get on, you can download it free. If you have any trouble, contact me. You can register it for research. We now have it registered in about 20 different research projects. So go at it. I mean it's, it's out there. It doesn't hurt anybody. The kids love to do it; you don't even have to train anybody on how to use it. So. (Laugh)

Q: Spell it out Mabel?

MABEL: Pardon?

Q: Spell it out.

MABEL: It's G r a m m a g g i o. Grammaggio because it's drilling into the grammar. It has to sound distinctive and be spelled in a way that doesn't get caught up with other search terms in the Apple Store. If you wanna know more about how aggravating it is to work with Apple, I'll tell you over at least 3 glasses of wine. (Several people laugh) But you all have been a super fantastic audience. I want to thank Margaret and the work with ASHA to obtain the funding for these events. I want to thank the members of the panel for the generosity of their time and their energy and effort incoming to share their work with us. I want to thank the National Institute on Deafness and Communication Disorders, that is provide, uh, the funding to support this. And I think they maybe bought us lunch. Did they?

Q: I think that was ASHA.

MABEL: ASHA bought us lunch. So we'll thank ASHA for buyin' us lunch, and for making it possible to add this to a very busy convention schedule. Thank you all very much. (Applause)