BRENDA EAGAN BROWN: So BrainSTEPS is happy to announce that we have two world-renowned speakers with us today. First, I'd like to introduce Dr. Peg Dawson. She received her doctorate in School and Child Clinical Psychology from the University of Virginia. She worked as a school psychologist for 16 years in Maine and New Hampshire, and for the past 20 years has worked at the Center for Learning and Attention Disorders in Portsmouth, New Hampshire, where she specializes in the assessment of children and adults with learning and attention disorders.

Along with her colleague Dr. Richard Guare, she has authored several books, including a book for professionals, *Executive Skills in Children and Adolescents: A Practical Guide to Assessment and Intervention,* which was recently revised, as well as a book for parents called *Smart but Scattered*. And all of you here today will be receiving a copy of the book *Smart but Scattered* for attending. So that's why I wanted you to register.

She and Dr. Guare have two books in press at the present time. One on executive skills geared to parents of teenagers and a second on coaching, *Coaching Students with Executive Skill Deficits*. I think that just came out. Yes. So our team leaders all have that book. They were given it last month, so if you'd like to read it, your team leader has it. Dr. Dawson is a past president of both the National Association of School Psychologists and the International School Psychology Association. She is also the 2006 recipient of NASP's Lifetime Achievement Award and a 2010 recipient of the International School Psychology Association Distinguished Services Award.

And Dr. Richard Guare is a neuropsychologist and currently serves as director of the Center for Leaning and Attention Disorders at Seacoast's Mental Health Center in Portsmouth, New Hampshire. Dr. Guare received his PhD in School and Child Clinical Psychology from the University of Virginia and completed a postdoctoral fellowship in neuropsychology at Children's Hospital Harvard Medical School. Dr. Guare is board-certified as a behavior analyst. He serves as a consultant to schools and agencies in programs for autism, learning and behavior disorders, and acquired brain injuries.

Dr. Guare has presented and published research in clinical work involving attention, executive skill, and neurological disorders. Dr. Guare is co-author with Dr. Peg Dawson of books for clinicians on executive skills in children and adolescents, and on coaching students with ADHD. Okay, so I'm going to hand it off.

DR. PEG DAWSON: Okay, thank you. We're going to start by having you all do some work. This is a really -- it's a quick way to introduce executive skills or at least our framework for understanding executive skills. So you've got two handouts. The smaller one has what's called an executive skills questionnaire. So this is an opportunity for you to learn what your own executive skill strengths and weaknesses are. So once you do that, you should be able to -- it's a two-page questionnaire. It shouldn't take very long. You can figure out what your three

highest and your three lowest scores are. We'll go through the definitions, but if you want a quick preview of the definitions, the last page of that questionnaire just gives you the definitions of each skill. So why don't we start there.

DR. RICHARD GUARE: When you fill this out, fill it out from the perspective of your work environment and not your home environment, because it will make a difference. Thanks.

FEMALE SPEAKER: Okay, we've got a problem. So I don't know where it went. Oh.

DR. PEG DAWSON: Oh, here's where it went. Hold on, I'll just move this over. That does it. And now I'll just get it back again. Okay, thanks. Yep, well, we have two different chairs here, so we want to --

DR. RICHARD GUARE: But I don't want to be reading off the slides when I'm going through the definitions. It's just in order to stay in the camera, I need to work off the computer.

DR. PEG DAWSON: Yeah, okay. Yeah, although the computer, as you can see, is pretty small. Can you read the --

DR. RICHARD GUARE: We can't bring up a full slide?

DR. PEG DAWSON: I don't know how to do that. The swap display just moves it. Here's what happens when you swap the display.

DR. RICHARD GUARE: So if that's the case, then I'll --

DR. PEG DAWSON: Do you want the -- I mean, you got the --

DR. RICHARD GUARE: No, I can't. I'll stay close enough to be able to refer to them. He can just focus on me, what I'm doing. Why don't you just move that chair this way because I'll do it from this side. It's easier.

DR. PEG DAWSON: I can't get it back. I'm going to need a tech person to help me with this.

DR. RICHARD GUARE: Let me just check. Your mic is live.

DR. PEG DAWSON: Yeah. We were trying to figure out a way to get the full display here and there, and now I can't get it -- if you know how to do that, that would be great. I found a combination of Macs and these --

MALE SPEAKER: So we got -- it is --

DR. PEG DAWSON: Is it the other Windows will detect displays?

MALE SPEAKER: No, we're okay there because it is mirroring.

DR. PEG DAWSON: You can see it's at the very top of the screen when it's -- that's how I switched it to start

with. But now I can't get it. Oh, maybe you can do it by -- yeah, there we go.

MALE SPEAKER: Is it that button there?

DR. PEG DAWSON: Yeah, it's that one. There we go. Okay. Thanks.

DR. RICHARD GUARE: We're never going to try to bring the big screen.

DR. PEG DAWSON: He said it was set up to do that, but it's not. And that's been my problem.

DR. RICHARD GUARE: I'll work from here.

DR. PEG DAWSON: Okay. Did you let him know that? Yeah, okay.

DR. RICHARD GUARE: Yeah, he said he's got the capacity to follow -- the idea was to pan the audience, that's all. I'm moving between the podium and the chair. That's my area.

DR. PEG DAWSON: I've actually found that if I take out my left contact lens, I can read the computer because my eyesight is so bad in my left eye, I rarely rely on it for scanning the audience. But I can read closeups, so that's what I do when I do presentations now so I don't have to keep switching back and forth with my glasses.

DR. RICHARD GUARE: I'm looking for somebody to develop a new pair of glasses that are like 3-foot reading glasses. [inaudible].

DR. PEG DAWSON: Well, they've already did that with the iPhone. I mean, they made everything larger. How many have finished? Okay, let me give you a couple more minutes since most people haven't raised their hand, but -- and then we'll start and we'll talk about what it means. Okay, I can't get this working either, so do you want -- you're going to be -- no, you're not. Do you want me to move?

DR. RICHARD GUARE: I can't be here and there at the same time. It's not working.

DR. PEG DAWSON: Not the way I know how to use this. But I may up, down. Do you want to ask him, see if we can get that working? Just can you get it to --

MALE SPEAKER: Is that -- you're looking to advance your slides?

DR. PEG DAWSON: Yeah, is that what this does? No. Oh okay, you need to pop that in here. Okay.

MALE SPEAKER: And we may get a prompt here saying that it complains that it doesn't know what the keyword is.

DR. PEG DAWSON: Right, I want to handle that.

MALE SPEAKER: Keyboard. You may need to [inaudible]. Okay, do the wrong one. That's okay. We don't even

need this part. Yeah, this is actually the projector, so we're good.

DR. RICHARD GUARE: Where am I pointing this at or --

DR. PEG DAWSON: I think you can -- see if you can point it at the screen. Yeah. Okay, this is -- the questionnaire you just filled out is not a norm referenced questionnaire, which means we don't have average scores, so you can't really compare yourself to anybody else. We use it primarily for people to identify their own particular strengths and weaknesses, which we think is more useful actually then comparing yourself to a norm referenced population. And the reason we start with this is, first of all, it's a good introduction to executive skills, but we've also found, and I'll speak for myself personally, the more I've understood my own executive skill strengths and weaknesses, the better able I am to understand how I do my work, that I -- particularly understanding what strengths to draw on and how to try to compensate for weaknesses.

So for instance, one of my strengths is time management, so we will end exactly on time today. We may speed through part of the workshop, and to be honest, this is the first day of a three-day set of workshops and we're feeling our way a bit because we've tailored it to this audience. And we're just -- we just weren't sure whether we'd put in too much information. So we're going to pick and choose based on, in part, some feedback from you partway through the day.

But so the executive skills, you've got 12 different executive skills questionnaire, executive skills here. When we talk about kids, and Dick will be going through these in a minute, we generally talk about 11 different executive skills. The one we've added for adults is stress tolerance. We think it's more relevant to adults, and actually we developed this as a rating scale to help people understand what kind of work environment they do best in or what kind of jobs they do best with. So those of you who are high in stress tolerance probably work well in an environment that's fast-paced, that's unpredictable, where you may encounter a crisis, you know, every other day when you get to work.

I personally, once I understood what my own executive skills profile was, I understood why I no longer work in the public schools because stress tolerance is one of my weaker skills. So with that as introduction, I don't know where Dick will want to add anything to it, but he'll now go through and talk a bit about each of the executive skills.

DR. RICHARD GUARE: Yeah, we don't have the same executive skills at all. Mine is flexibility, it's not time management. So when Peg says we'll end on time, we'll end on time for the most part. There are times when Peg and I have little confrontations in the middle. So if that crops up in the afternoon, you'll understand where that's coming from. It's a clash of executive skills. Yeah, and since my strength is flexibility, I spend about all of my time working in public schools, probably 70 or 80% of my time working in public schools and working

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directly with kids, working with teams.

A few years ago, we had agreed to New Hampshire to do a statewide consultation to establish teams not unlike this in the public schools for kids that were coming back in with various types of acquired traumatic brain injuries. It's not nearly as, you know, again, I think intact and sophisticated as this. Funding is continually an issue for us in New Hampshire. But I understand the issue and I understand the problem. I spent the first eight years of my career working in a post-acute inpatient rehabilitation facility for kids and adults, primarily with traumatic brain injury, but the longer we were there, the more we saw just kind of different types of brain injuries.

So we're going to walk you through the executive skills this morning. I think, as Peg said, it's important to understand something about your own executive skills because, you know, in the world that I live in, a lot of what I'm dealing with are behavioral issues. They're manifestation of executive skill weaknesses that show up as behavioral issues. And so to understand something, to be able to put a label on those kinds of things and understand that, in a lot of cases, you're dealing with skill deficits as opposed to motivational deficits or simply noncompliant behavior we think is pretty important as a perspective.

This happens to be our particular scheme. There are obviously other schemes out there. When we put this together, we put it together based on what we knew about the research in the clinical literature at the time. And also, what we tried to come up with were what we thought were definitions that people could understand, that would give them a pretty good understanding of what an executive skill was and an ability to kind of picture what it looked like, how it was going to manifest in yourself and also in the kids that you work with.

The first couple that I'm going to show you are the order in which they emerge developmentally, at least in terms of what we understand about the developmental literature at this point. So the first of the executive skills, and our scheme is response inhibition, the capacity to think before you act, the ability to resist the urge to say or to do something that allows us the time to evaluate a situation and how our behavior might impact it. So it really is that capacity to be able to stop and look and listen, think before you say something or do something. And again, if you're working with, you know, a population of kids, particularly with frontal lobe types of injuries, this would be quite familiar to you. As a skill, it tends to be weak at best.

Now developmentally, this skill emerges at about six months of age, but it emerges in a very different form than this. It emerges as simply the capacity to initiate or not initiate a response. And so what will show up at that point as just that skill? Do I move or do I not move, basically? It's a kind of umbrella skill in terms of executive skills because if you don't have this, then the rest of your executive skills pretty much go by the

board. So planning, time management, organization, all of those things go out the window if you act before you think. Because nothing else is going to come into play. So in that sense, it turns out to be a pretty critical skill. And in terms of intervention, if you've got to intervene, this is probably one of the first skills that you're going to intervene with because if you don't have this, you're not going to have much of anything else.

The second skill, working memory, the ability to hold information in memory while performing complex tasks, incorporates the ability to draw on past learning or experience to apply to the situation at hand or to project into the future. So and again, this is thought to emerge at about six or seven months in the infant. And at that age, it emerges simply as the capacity to hold in mind a visual image for relatively short periods of time to begin with. So it's quite rudimentary. But prior to that time, the infant lives perpetually in the present. Can't hear it, taste it, touch it, smell it, feel it, doesn't exist. Truly is out of sight, out of mind. So what this gives the infant the capacity to do is now begin to operate around things that are not necessarily immediately present in the environment. Now there's two aspects to this skill. One of them, the more simplistic aspect of working memory is what we're used to when we talk about, for example, mental arithmetic. So if I say to you, I want you to do this problem. Don't use pencil and paper, 23 minus 9. So you'll employ an aspect of working memory to be able to do that problem. You have the information in your head, you manipulate that information, you'll come up with an answer, so there's a memory kind of component to that. But the much more sophisticated aspect, and the part of working memory that we're more interested in, is this notion about the ability to draw on past learning or experience to apply to the situation at hand or to project into the future. It's what Russ Barkley refers as the capacity for hindsight and foresight, and this turns out to be an absolutely critical skill for us in terms of operating in the world. So imagine an 11-year-old girl says to herself on a Saturday morning, last Saturday, when I cleaned my room, Mom let me have a friend over, and she took us out for pizza in the afternoon. Maybe if I clean my room this morning, Mom will let me call a friend and she'll take us out to do something this afternoon.

Now for a cognitively intact 11-year-old girl, that's not a particularly difficult or complex piece of thinking. But when you think about it, it's a pretty remarkable cognitive act. Here a kid places herself in a specific time and situation, and she reaches back into her own experience a week. But it could have been two weeks or three weeks, it really doesn't make a whole lot of difference. She immediately brings that experience forward, and she compares that past experience to her current situation. And on that basis, she makes a decision about how she's going to regulate her own behavior. Not only that, but she makes a prediction about how other people might respond to the way that she regulates her behavior. And so now you get a sense of that's a very important aspect of executive skills because it's our capacity to be able to use past experience to impact our current behavior. In combination with meta-cognition that we'll talk about later on, which is that

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kind of ability to observe yourself, these two skills are critical for problem-solving in somewhat less familiar or new situations for us.

Now the other thing that's interesting about working memory is that working memory provides us with a continuity or thread of our lives. So when I think about myself, I think about myself today as the same person I was last week, as the same person I was last year, as the same person I was five years ago. I understand that I've changed over that time, but there's a kind of continuous thread for who I am as myself. What you'll see is that when somebody sustains a traumatic brain injury, that that sense of self, that sense of continuity, dependent on working memory, basically gets lost.

And so what happens in a lot of cases, we talk about a loss of sense of self in the case of traumatic brain injury. And that's what it is. You can imagine how that would be for yourself. So imagine you get up this morning, tomorrow morning and you're driving someplace, and suddenly you wake up and it's four weeks or five weeks or six weeks later and you have no recollection whatsoever that happened -- about what happened in the intervening time. And not only that, but if you're lucky enough to be able to reach back into your past experience and bring that forward, you understand that there's something fundamentally different about the person you are now and the person you can remember a while ago, and that past experience no longer serves you in your ability to be able to do things.

That's the impact of that kind of injury, at least to the extent that these injuries are quite significant. And you could image how, just from a psychological perspective, how devastating that can be, because basically that is -- that breaks that sense of continuity that we have, and suddenly you are a new, and in almost all cases less competent individual than you were previously.

Emotional control. The ability to manage emotions in order to achieve goals, complete tasks, or to control and direct behavior. So again, this turns outs to be quite important. We talk about adolescent behavior later on this morning, you'll see how the development of the limbic system and the kind of lagging development of the frontal lobes during adolescence exaggerates issues of emotional control in adolescence. Exaggerated, again, potentially by kids who've sustained frontal lobe injuries because of that lack of frontal lobe control over developing limbic system, particularly as kids move into middle school and into adolescence.

Here again, this shows up in infancy, estimated somewhere between six and eight months, but it shows up in a very different form than what we understand as emotion. It shows up only as approach avoidance behavior. So all it means is that the infant has the capacity now to move towards something because it's pleasurable or to move away from something because it's not pleasurable. Out of that, you'll get differentiated emotion over time.

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If you take these three skills, response inhibition, working memory, and emotional control, so now the infant has the capacity to initiate or not initiate a response, has the capacity to keep some sort of image of something in mind even though it's not currently present in the environment, and has the capacity to move toward or away from something depending on whether it's pleasant or unpleasant. What else is happening at this particular time? Locomotion.

And so if you're a parent, and you've got children this age, an infant this age, what you realize for the first time is that they're going to make decisions without consulting you. You know, when you watch your kid moving someplace, even crawling around, you understand you don't know where they're going necessarily. They've got their kind of own agenda. And by age two, you understand vividly that they've got their own agenda. You know, and they're going to fight to be able to make that kind of decision. And then again, for the next 24, 25 years, you're going to see that grow greater and greater. You know, you'll see it explode in adolescence. But I can tell you as a parent of a 25-year-old with some fairly significant executive skill problems, it doesn't end all that soon.

Flexibility, the ability to revise plans in the face of obstacles, setbacks, new information, or mistakes relates to an adaptability to changing conditions. This isn't an universal phenomenon that you'll see for kids who've experienced some sort of traumatic or acquired brain injury, but it surely will show up sometimes. I got a call from a mom yesterday morning as we were getting ready to come here. Her son was hit by a truck in November. He's moved back into school full-time at this point. Had a relationship with a girlfriend pre-injury that was pretty important to him. He has become absolutely obsessed with this girl at this point. Absolutely obsessed. Wants to be -- doesn't want to be separated from her at all anytime in school, can't let go of this at this particular point, and it's causing major problems for the school, causing major problems for the parents.

Sustained attention capacity to maintain attention to a situation or a task in spite of distractibility or fatigue or boredom. So the first part of this, the capacity to maintain attention to a situation or a task is something that you'll see fairly early. So once infants develop their capacity for visual tracking, you'll see what looks like a capacity for somewhat better sustained attention. But for us, the heart of this definition isn't in that capacity to follow something or to attend to something for a short period of time, it's the capacity to attend to something in spite of the fact of distractibility, fatigue, or boredom. And that becomes important because now can you redirect your attention under conditions that don't necessarily favor paying attention? That's when this really becomes important. And the way that we notice that is when we talk about kids being distractible, can they redirect their attention in the face of that kind of distractibility or fatigue or do they become what I'll talk about in a few minutes, what's called context-dependent?

Task-initiation, the ability to begin projects without undue procrastination in an efficient or timely

fashion. So if you're working with kids, I have occasional worked with kids with these kinds of problems fairly often, and if there are classroom paraprofessionals or if there are -- these kids have their own paraprofessionals, we're aware of the fact that paraprofessionals do a lot of task-initiation cueing. You need to get started on this. How you doing on that? When are you going to start doing this? You know, and again, if you got adolescent kids, you do this a lot for homework if you're a parent.

Planning prioritization, the ability to create a roadmap to reach a goal or to complete a task also involves being able to make decisions about what's important to focus on and what's not important. So you'll hear that throughout the morning. We'll talk about this notion about the ability to create a roadmap to be able to get to a particular goal. So that once you've set a goal, it's not enough to know that you have a goal out there, it really is that ability, can you formulate a realistic plan to be able to get to that goal? In a lot of cases, adults are really going to be working with kids to help them formulate those kinds of roadmaps to get to a goal.

Organization, the ability to create and maintain systems to keep track of information or materials. We haven't defined an organizational system or a set of organizational systems here, although Peg will show you one that's kind of targeted to school this afternoon. But what we're aware of is that my organization system might not look like your organization system. We only define organization as a problem to the extent that it gets in the way of you efficiently completing a task. So we meet people, kids and adults, who, on the face of it, appear to be somewhat disorganized, but they manage to get through their day without any kind of impediment in terms of meeting deadlines and so forth like that because somehow they've got some sort of organizational scheme. So we're willing to call it a decent organizational scheme as long as it doesn't interfere with the use of other kinds of executive skills.

Time management, capacity to estimate how much time one has, how to allocate it, how to stay within time limits and deadlines, also involves a sense that time is important or what's referred to as a sense of time urgency. So the phenomenon in adolescence that you'll notice is that adolescents, at least in terms of non-preferred tasks, they typically overestimate how long they've got to complete a non-preferred task, and they typically underestimate how long the task will take. When you go start on your algebra homework, well, it's only four o'clock. I'm not going to go to bed till 11. I'll start on it about nine. How long is it going to take you? It's going to take me a half-hour. And so they get to nine o'clock and, as it turns out, algebra's going to take about three hours. You know, and they've somehow not left enough time to be able to manage that particular problem. You notice that that time estimation problem always works to the advantage of the adolescent, so it's always in the service of avoiding the non-preferred task.

Goal-directed persistence, the capacity to have a goal, follow through to the completion of that goal, and not be put off or distracted by competing interests. So this is really what the heart of executive skills is all

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about. Can you set a goal in the future and maintain your attention and all of -- use all of your other executive skills to be able to get to this particular goal?

And then finally, meta-cognition, the ability to stand back and take a bird's eye view of one's self in a situation. It's the ability to observe how you problem-solve, also includes self-monitoring and self-evaluative skills. Asking yourself, how am I doing, how did I do in this particular situation? It's a late emerging skill in terms of kids being able to use it and think about it consciously in terms of using it. Probably isn't going to -- you're not going to see it until 10, 11, 12 years old.

But as I said before, in combination with working memory, it's an absolutely critical skill for managing new situations. So if I can bring some experience forward from my past, and in addition to that I can understand what I did in the past, I can kind of see myself in that situation in the past, I can bring that forward to the present and make decisions about did what I do in the past work for me in that particular situation? If not, how would I change it? That's the combination of using both working memory, the experience that's stored in working memory, and meta-cognition to be able to adjust your behavior to new situations.

So those are -- that's our particular set of definitions. I don't want to spend a lot of time on questions. But if people have any questions about these skills right now? Okay. So why do we think it's important to teach executive skills? Here, Dale's fourth-grade education pays off. The job you're applying for will require you to know long division, state capitals, and cursive writing. No, that's not what Dale's job is going to require him to be able to do. It's going to require some other kinds of skills.

From our perspective, in a complex world, if we're expecting kids and adults to manage their own behavior, to regulate their own behavior, to be able to deal with the rate and the information load that's available, that's out there, it really has a lot less to do with stored skills and the capacity to adapt to new information, which really is what executive skills are all about.

So if you go back into -- this is familiar territory for me because when I first came into traumatic brain injury in particular, it was in the late '70s because neuropsychology was my major. I was working at the Children's Rehabilitation Center at the University of Virginia at that time, and we were dealing primarily with kids with brain and spinal cord injuries.

And so after that, I did my postdoc and went to work in a, as I say, a post-acute rehabilitation facility. If you were to look in the neuropsychology literature in the early '80s and certainly in the late '70s, you wouldn't see the term executive skills mentioned. It wasn't mentioned. And part of the reason why it wasn't mentioned is people were aware that there was something different about people who sustained these kinds of injuries. But until the survival rates of kids and adults with traumatic brain injury really accelerated significantly, you

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weren't seeing constellations of behavior of people who were surviving long enough to be able to recognize that.

But with the advent of these acute and post-acute rehabilitation facilities particularly devoted to, as I say, kids and adults with traumatic brain injuries, now what you started to see was a significant population of people with what are referred to as acceleration/deceleration kinds of injuries. So that's the typical injury that would occur in automobile accidents and falls among other kinds of things, where, you know, you remember the crash dummy photos, the head comes forward, then snaps back, or in a rear-end collision the head goes back and then comes forward. And so the head moves back and forth on the axis of the cervical spine. But for fractions of a second after that, the brain moves inside the skull and it bumps up against the skull. Now when it bumps up against the back of the skull, you know, which is there's a fairly larger area there, it's fairly flat, the force is distributed over a fairly wide area. But in the frontal areas of the brain, it rides up over the orbits of the eyes, over those bony ridges of the orbits of the eyes and tends to be compressed into more of the frontal area here. So there was a predominance of these kinds of frontal lobe injuries as a result.

And out of this came a recognition, somewhat of a misnomer, about what was referred to as a frontal lobe syndrome, you know, that stood for dis-inhibition, poor sustained attention, inappropriate social behavior. I say it was something of a misnomer because not everybody that's sustained frontal lobe injuries show that kind of behavioral profile, but it was prevalent enough for people to understand that suddenly we were seeing this phenomenon of people with a constellation of symptoms that looked surprisingly the same.

And so in 1983, when I'm working in one of these facilities, one of the things that we're aware of immediately is we're getting a lot of, what you'd expect, we're getting a lot of adolescents and young adults. You know, what's the highest-risk population? 16- to 24-year-old males. So we're seeing a lot of these adolescents and adults come into this particular facility, and suddenly their past experience isn't serving them well anymore. It isn't that they don't necessarily remember how to do something, they can't put it into place anymore. Looks almost like an apraxia.

And it was referred to earlier in the neuropsychology literature as the curious dissociation between knowing and doing. And what that referred to was that people understood what it was they should do at times, but they still couldn't put that behavior into effect. And so there came to be this realization, and that's really when the notion of executive skills emerged, it emerged in about the mid-80s as people started to see more and more of people with frontal lobe injuries, enclosed head injuries in particular, surviving pretty significant levels of trauma so that they became, in a lot of ways, the kind of walking wounded out there.

In 1993, in the *Journal of Head Trauma Rehabilitation*, two neuropsychologists wrote an article

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conceptualizing executive skills as frontal lobe functions. And here's what they had to say about that. They said the frontal lobes decide what is worth attending to and what is worth doing. Impairments are manifested as distractibility, poor sustained attention and effort, perseveration, and confusion. Now you'll see in their definitions there are multiple examples of executive skills contained, but that's really what they're talking about. They're talking about a couple of different executive skills.

Frontal lobes provide continuity and coherence to behavior across time, so that's what I was talking about before. Our frontal lobes, and particularly working memory, give us this sense that we are the same people today as we were yesterday, as we were a year ago. Impairments are manifested in the inability to plan and execute a sequence of behaviors needed to meet a goal. So here the planning, the task-initiation, those kinds of skills suddenly are lost. So even if somebody's got a goal, now they don't know how to execute the behavior to be able to get to that particular goal.

Frontal lobes modulate affect of an interpersonal behavior so the drives are satisfied within the constraints of the internal and external environments. Impairments are manifested as emotional ability, flatness and indifference, irritability and belligerence, and childishness. Now I particularly like this definition in this notion that drives are satisfied within the constraints of the internal and external environments. So basically what this says is we depend on our frontal lobes to be able to modulate our drives. So if I walk into a situation, if I walk into a school, I walk into a church, I walk into a meeting like this, I understand that there are certain kind of behavioral and social expectations when I come into this situation. My frontal lobes allow me to appreciate that and help me regulate my behavior accordingly. Now if you walk into a party or you walk into a bar, there's a different set of expectations in that situation, and you understand that there's a different set of expectations, and you can behave differently in that situation.

If you had a couple of drinks, you basically take the frontal lobes offline or you start to take the frontal lobes offline. That's right, that's what you do. For those of you who haven't experienced it, you know, like you've certainly seen other people experience it. So now all of the sudden not only are the demands of that particular social situation different, but you start to diminish frontal lobe functioning. And what do you see? You start to see disinhibited behavior. You start to see inappropriate social behavior. You start to see all of the things that, as I say, you've either experienced yourself or would recognize from having been in these kinds of situations. So that's what the frontal lobes allow us to do. They allow us to modulate our particular behavior. But when you take some degree of frontal lobe monitoring and control away, then that modulation and understanding what's expected in situations becomes much more difficult.

When I was working at this facility, I was working with an adolescent guy who had come to us -- actually was injured in Pennsylvania. He was injured when he was 16 or 17 years old. It was an automobile

accident. I think a couple of kids in the car were killed. He was in the backseat with another kid. Sustained significant closed-head injury. So he came to us and he was with us on and off for a couple of years. Finally moved out of the facility, moved into a community.

And I used to go up and have dinner with him sometimes. So I go up on a particular day. In this community, they lived in a -- it's kind of a recreation community north of where we were. You know, it's a summer and winter recreation area. It's real popular with younger people. You know, a lot of opportunities for -- a lot of jobs up there, but you know, fairly low paying jobs. But a lot of -- kind of a party atmosphere. So and it was attractive to a lot of the people that we had in this particular -- adolescents that we had in this particular facility.

So I went up to see this guy on this particular day. It's about two o'clock in the afternoon. He doesn't have a lot of money and so he says, can we go out to get something to eat? And I said, yeah, sure, we can do that. So we go out to a restaurant and he orders a cheeseburger and french fries. And I got what was, probably for me, one of the most vivid demonstrations of this modulation of drive. It was clear to me that he had probably hadn't eaten in a while. I don't know if it was probably maybe just that day, I don't know. So he picks up the cheeseburger and he takes one bite of the cheeseburger, and then with these four fingers he stuffs the entire cheeseburger in his mouth. I thought he was going to choke himself to death.

And the food is dripping down, and this guy's -- and this guy, he would not make a spectacle of himself if he was aware of what he was doing. But in that particular moment, basically what happened was his own drive to eat and the taste of the food essentially took over his behavior. And he consumed the entire cheeseburger probably in less than a minute. Fortunately didn't choke himself. You know, but I was absolutely kind of sitting back and watching this. You know, I was aware -- because in other aspects of his life, he was doing okay. I was aware of, from time to time, how when one of those drives takes over, the inability of the frontal lobes to shut down that kind of drive in a deprivation situation can be a really, really serious kind of issue.

Impairments are manifested as emotional ability, flatness and indifference, irritability and belligerence, and childishness. So we see -- you'd see what looked like, you know, kind of regressed behavior. And then finally, the frontal lobes monitor, evaluate, and adjust. Impairments are manifested as rigidity, lack of insight, and this inability to profit from experience. So it's this notion that in spite of the fact that I've experienced this particular thing, I don't recollect that experience enough so that it guides me in new behavior. So we'd be working with the kids and the adults and you'd say for yourself, from time to time, don't they get it? We've been here before. Nothing is changing about this particular situation. But that is the phenomenon of this kind of injury.

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So I want to talk a little bit about Barkley's theory of attention disorders not because -- just because of attention disorders, but because -- could you shut your mic off? I'm getting feedback from it. Because Barkley's notion of attention is something that you'll see reflected. You'll see it reflected in your own behavior, but you'll certainly see it reflected in the behavior of the kids that you work with, whether you're talking about kids with traumatic or acquired brain injuries or kids with attention disorders.

Barkley says there are really two variables, two factors that impact our attention. One of them is what he calls context -- contingency-shaped or context-dependent sustained attention versus goal-directed persistence, okay. And when he talks about context-dependent attention, he's talking about what influences your attention in this particular context? So right here, right now. So some of the obvious kinds of things are the lighting in the room, my vocal intonation, the temperature in the room. If you want to get a kind of vivid demonstration of what a contextual variable is, at about 1:30 or two o'clock this afternoon, you know, like when you've had lunch and you're back here from lunch, you'll notice that your attentional capacity is different purely for situational kinds of reasons. You know, because your attention will suffer to some extent in the afternoon. So that's what he's talking about. There are contextual things that impact our attention. Versus what he calls goal-directed persistence, which means our behavior, our attention is under the control of some future goal.

So here, for context-dependent attention, a person's sustained response depends on novelty, on intrinsic reinforcement or interest and value, and extrinsically provided consequence. So if a task is fun, if it's interesting, if it's immediately rewarding, then you're likely to get sustained attention. Now this notion that the brain is novelty detector, so we'll generally pay attention to novel kinds of stimuli. If we have intrinsic interest in the situation, so if this topic, for example, is interesting to you or you're listening to somebody, if you're listening to get some information or you're watching a TV program and you have some intrinsic interest in that, then you'll be able to maintain some sort of attention to that. There's not much in the way of extrinsically provided consequences here. There's breakfast, there's coffee, there's those kinds of things that will influence your attention to some extent. If Peg or I were walking around handing out 20-dollar bills to the people who look like they were paying attention, that would be a more powerful extrinsically provided consequence, but we're not doing that obviously.

If you've got good contextual variables in a situation, you can control on-task behavior. Now the reason I'm talking about this is because what I'm going to tell you is that, for a lot of the kids that you're going to work with with executive skill problems, this is all you're going to have. You're going to have to manipulate the context because if you don't have that, you're not going to have much of anything to manipulate. And so one of the things that you've got to think about in terms of intervention is can you make the task fun or interesting or

immediately rewarding?

So I had a kid that I work with in school. Last year, junior in high school, and so we pick and choose his classes. And one of the things that I'm aware of is we have to fairly carefully pick and choose his classes. So I'm looking at his grades. He's got a B in English Literature. He's got a D in Natural Resources. And so I say to him -- this is not -- this is a kid who upfront says, I'm never going to school. All I want to do is graduate. Sorry, college. I'm never going to -- all I want is just graduate and get out of here. He would have quit school, but in New Hampshire you got to be 18 to quit school without your parent's permission.

So I ask him about the B and he says -- I say -- he doesn't have any interest in English Literature. I know he doesn't. I say, what's with the deal with the B? He says, I like the teacher. Not only that, but he says -- he adds this. I don't even ask him about it. He adds, and the smart kids are in there. Which means that, number one, the teacher is a contextual variable. So if somebody comes into a room and I like the person, just by virtue or the fact that I like them, I'm more likely to pay attention to them even if the subject matter is not necessarily of interest to me. And on top of that, this kid doesn't hang around with the smart kids, but he doesn't want to look like a jerk in front of the smart kids.

So I say to him -- and Natural Resources, where he's got a D headed toward an F, and I say to him, so what's the deal with Natural Resources? And he says the teacher is a fill in the blank. And I know two of his best friends are in there. And this kid has made his entire high school reputation on his willingness to challenge adult authority at the drop of a hat. So all he needs for a teacher that he doesn't like to begin with is a little bit of encouragement from his friends and he will get into it with that particular teacher.

Now those are two entirely different contextual situations, one of which appears that it would be a mismatch for this kid, but it's not because he likes the teacher. And so what I'm suggesting to you and what we'll talk when we talk about interventions later on is, in a lot of cases, we're talking about manipulating contextual variables because we feel like that's all we're going to have to be able to work with, okay.

Goal-directed persistence is very different. Goal-directed persistence means my behavior in this current situation comes under the control of some future goal, not what's happening in this situation. So and that's important because now it doesn't make any difference what's going on right here. I can basically ignore what's going on right here in the service of some future behavior.

So I'm the kid and it's a Sunday afternoon, and it's really nice out and my friends call me up and they say, let's go out this afternoon and do something. You know, let's go surfing. Let's do whatever. I got a chemistry test tomorrow. If I got good goal-directed persistence and I've got some reason that chemistry represents a step toward a goal, then I can stay in in that particular situation. Otherwise, the contextual

variable, and peers are a powerful contextual variable, basically my goal-directed persistence goes out the window in that particular circumstance because what happens right here, right now with my friends is much more appealing to me. It's the notion of immediate versus delayed gratification.

And as you'll see, we talk about adolescent kids. There are even good reasons in terms of brain development for why immediate gratification tends to hold sway over delayed gratification. They're in this funny kind of transition period of going through that. But if you're going to have good goal-directed persistence, first of all you got to generate and hold a mental representation of the goal in mind, so that's what Barkley refers to as working memory. So if you're going to have good goal-directed persistence, you've got to have a goal out there. You've got to remember what that particular goal is.

So if I -- like I come into this situation in the morning and my goal is not to have put on a lot of weight when I come back from this thee-day trip, which I can run into when we're traveling, so I come in this morning and I have a plan about what I'm going to do. I will only eat the fruit, okay. At lunch time, I actually have fruit in my car to keep me -- I don't even know what's for lunch, but I don't want to take the chance, to be honest with you, because it's quite easy for me to come back in this situation and -- but that's an important goal for me, you know, because my doctor says I should keep my weight down because you know, because I got a 19- and a 25-year-old kids. I'd like to be around long enough to see them get jobs and stuff like that, frankly. Just to let you know, I'm not shooting too high in terms of goals.

Formulate a plan or a set of rules to follow, self-directed speech. So I have to say to myself, this is what I'm going to do. You know, so that's what I did last night. I took the car and I went out, I bought fruit. You know, I went to Wal-Mart the superstore and I brought fruit. My one -- the one temptation that I gave into is I also stopped and bought a bottle of wine, so just one bottle of wine though. This was going to be a breakout. It would have been a bottle of wine for each night.

Inhibit or regulate negative affect. The disappointment and the frustration associated with self-deprivation. So you're going to experience, when you put yourself in this kind of -- so a kid's got to be able to say to himself, it's Sunday afternoon. It's beautiful. I really feel -- I really want to go out, but I've also got to kindle some sort of positive or self-motivated affect. I understand that if I go out now, I'm probably going to do lousy on this particular test. I don't want to be able to -- I don't want that to happen. I'm going to stay in. I'm going to avoid that. That's a very hard decision for kids to make. You know, it used to be a hard decision for me to make when I first started to travel to say, I'm going by McDonald's. I'm tired. I'm cranky. I really only want comfort food, and so I'll just stop and I'll get the comfort food. So but if you make a plan and you talk to yourself, and we're going to talk about self-talk strategies because they turn out to be quite important in terms of how to guide behavior, and using self-talk strategies even with very young kids, then that becomes an

important introduction to how you manage your own behavior.

And then finally, a way to experiment with multiple novel approaches toward goal achievement before selecting one to perform. So what that means is if your first plan didn't work, if you came up with a plan and that plan wasn't particularly effective for you, you've got to come up with some other plan. Now all of us as adults experience this aspect of context-dependent attention at times versus goal-directed persistence. We don't all live our lives under the control of goal-directed persistence. You know, otherwise we would be, you know, close to perfect human beings. I would have no bad habits. You know, but that's not the way that we live.

But if you achieved a certain station in life and if you've achieved a certain level of success in your life, you understand what it means to give up what's immediately available and immediately satisfying for some sort of delayed effect. That's what we would like our kids to be able to do. That's really what we're shooting for our kids to be able to do. This turns out to be a particularly difficult enterprise for, you know, kids that have sustained various types of acquired and traumatic brain injuries because you absolutely are dependent on the frontal lobes for this kind of executive skill. And so in a lot of cases, you'll see these kids, they become very, very -- like my kid, my middle school kid with his girlfriend, he is absolutely -- seeing her makes him totally context-dependent in that situation. All of his attention is directed toward her and toward finding ways to be able to spend his time with her in that particular situation.

So for Barkley, the individual with attention disorders is highly context-dependent and contingency-dependent. And without rewards or interest in the immediate context, work is cut short. That's why I said what I said. One of the things that you want to be aware of is that if you're going to work with your kids and you're seeing this kind of context-dependent attention, understand that you're going to have to manipulate the context. That's where the power and the intervention's going to come initially. It would be nice to say, you know, this would be the best thing for you to do. You know, if you want to be able to get through this particular day, if you want to get through this particular class, it would be better to do this. We all understand that. It's a question about whether they're going to be able to do that or not. If not, then you're going to have to create a context that makes it much more likely that they're going to pay attention in that situation. The individual without ADHD has adequate self-regulation and therefore requires no source of reward or motivation in the immediate context for performance.

DR. PEG DAWSON: Dick and I are switching off here. What I want to do is just give you sort of a brief introduction of what's going on in the brain in general in terms of development of executive skills across the developmental period that we're talking about from children to adolescents. And I think understanding it within normal brain development, we can then talk about so what happens with those with head injuries.

Basically executive skills develop through a process called myelination. And so that every time a nerve cell fires, something called myelin, which is a thick fatty sheath, wraps itself around the central nerve cell. So what you see there is an electron microscope photograph of nerve cells, and you can see the dark center part, that's the nerve cell. And the lighter part around it, that's the myelin. Myelin acts just like insulation on an electric cord. So the thicker the myelin, the faster the impulse travels. And the faster the impulse travels, the better the skill. Now this is obviously not just true with executive skills, this is true of skills in general.

And actually the reason I have a picture of a woman playing -- of a girl playing tennis here is that this information came to me from a *New York Times* Sunday magazine article several years ago that talked about -- it was written by a sports writer who got really curious to know why one tennis school in Moscow was producing an inordinately high number of top-seeded tennis players in the world. So he went to that tennis school to try to figure out what's going here that's different from other tennis schools.

And what he found was this little 72-year-old lady teaching tennis to children as young as four or five. And he watched to see how she taught tennis, and what he noticed was that she had those kids spending a lot of time just practicing swings, forward strokes, backhand strokes, overhead servers or whatever, without the ball. Just over and over again, practicing that stroke. And then he went to John Hopkins and talked to neuroscientists there and said, what's going on? And they explained myelin. So what's happening with that tennis instructor, that each time they're practicing the perfect stroke, the myelin is wrapping itself around those nerve cells so that the stroke is getting better so that once the ball is introduced, you know, kids can react faster and, yeah, they'll have to adjust their stroke depending on where the ball is coming, but they'll always return to that perfect stroke.

Now he noticed something else about this, and that was that no matter how skilled the tennis teacher was and how -- or how young and how talented the kids were, it still took about ten years for them to start winning tennis tournaments. And he got curious about that ten-year mark and looked at other sort of natural talents that kids seemed to have. Chess, for instance. If you look at chess, it's still about ten years from the time kids start playing chess to the time they start winning tournaments against adults.

I don't know if any of you saw the HBO special last year on Bobby Fischer who, you know, experts on chess believe was probably the best chess player who ever lived. It was interesting to see in that special, they said that Bobby Fischer started playing chess at age six and he started winning tournaments at age 15. So nine years, he shaved one year off that ten-year mark. And if you're familiar with Malcolm Gladwell's book on outliers, he talks about the ten years of practice too. And in fact, the researcher who did the research on that, a guy named Ericson, basically concluded that in order to get proficient -- to become an expert at a skill, it takes ten years of deliberate practice. And that ten years translated into weeks and hours is six days a week, three

hours a day, for ten years.

So I mean, we very often present this workshop to people just interested in executive skill development in general, so we're talking about normal typically developing kids that it still is taking ten years of deliberate practice. Obviously we're not trying to get kids up to the skill where they could win executive skills tournaments if there were such a thing. But even cut that in half, six days a week, ten years, an hour and a half a day. We're still talking about a lot of time it takes to become proficient in these kinds of skills.

So basically myelin performs two functions. It increases the speed with which the nerve cells fire, but it also decreases the recovery time because there's a lag. Once the nerve cell's fired, it needs to recover and be able to fire again. And so myelin also decreases that recovery time. So as a result, during adolescence, as these skills are developing, there's a 3,000-fold increase in the amount of information transmitted per second. And what that means is that this enables -- these changes enable -- improve the brain's ability to handle complexity in adolescence. That's why meta-cognition is an achievable skill in adolescence, where it's not with younger kids because it really does require the brain to be able to handle much greater quantities of information much faster.

And the other thing going on -- there are two other things going on in the brain during adolescence. One is called pruning. We're born with more brain cells than we need, and there are two times sort of in child development when the brain sort of -- when we sluff off extra nerve cells. One is during the preschool years and the other is during adolescence. So what that means is how teenagers are spending their time, those are the nerve cells that are getting preserved. So if they're spending hours and hours of time playing video games, you know that those nerve cells are building up myelin. If they're not doing things like deep reading comprehension activities or things like that, then those skills don't have the same opportunity to develop. But the other thing that's going on is there's increased connectivity between brain regions so that there's greater ability to make associations between thoughts and experiences. Again, something that's absolutely critical for higher-order thinking skills or what we would call meta-cognition.

Now, there's some evidence that students with traumatic brain injury function better and more commonly at the sort of rote verbatim level than they do at that sort of higher-order thinking level. And it looks like especially kids who've experienced head injury at a young age that there's a leveling off or a delay in terms of their ability to do that sort of higher-order thinking skills. Which you know, at its basic, it's the ability to summarize. In fact, there have been some interesting studies to show that you can actually teach kids how to summarize, but if you don't teach them how to summarize, then that's a skill which, in the typical fifth-grader, about 14% of the time fifth-graders can do summarization. You know, it increases to 27% during middle school years, 36% during high school. But again, this is in typically developing kids. And just thinking, which is higher-

order thinking is really the ability to, among other things, the ability to summarize.

Okay, so basically what we've got with adolescents is, I mean, this is one of my favorite cartoons that sort of -- this will lead into a discussion about risk-taking because [inaudible] friend Pierce is -- or Jeremy's friend Pierce is saying scientific studies of the human brain show that it takes about 25 years for decision-making skills to develop. And Jeremy then says, so then we have an excuse for this. And Pierce is saying, factory-installed, and you may see that they've built a skateboard ramp that goes from the second floor of the house down to the ground and back up again, and they think this is perfectly fine. What could possibly go wrong? So I'm going to give this back to Dick and he'll talk about risk-taking in adolescence.

DR. RICHARD GUARE: If you have the privilege of having a son with reasonably serious executive skill problems, you get to live these kinds of things. So when my kid was 14, we grew up -- my kid grew up in a neighborhood where there were nine or ten boys, all of whom from my perspective had horrible executive skills. A couple of whom, interestingly enough, had had multiple concussions, which probably just added to the factor.

But so on a Friday night, my neighbors, the kids who were across the street, they were in camp out. So this is a group of boys having a camp out across the street. My neighbor drives down the road and stops over there to see them. And so he stops over at the house for a beer afterward, and he said, so did you see what the boys were doing? And I said, yeah, they were out there. They're pitching tents and they were talking about making supper. He said, no, they got two compound bows out there and they're firing arrows up into the air to see if they could see the arrows coming down. No joke. This is so typically a boy brain's kind of activity. I mean, that just says it all. And he said, you know, what was the really surprising part that they were most surprised by is how difficult it is to see the arrows coming down.

So later on that night, unknown to us until the next morning, they decided they were going to try to build a Molotov cocktail. Does it get any better than fire explosion when you're 14 years old? It does not, I'm telling you, not for a boy. And so they get gasoline, they get a couple of bottles, they get rags. They miss a couple -- thank god, this is where the executive skills piece comes in. They miss a couple of critical features in terms of how you put together a Molotov cocktail. They put the gas in the bottle. They jam the rags into the bottle. They don't soak the rags in gasoline, number one. Number two, they jam the rags so tightly into the bottle, that no air would ever get through there anyway, and three, they missed the critical issue that you got to break the bottle to get the explosion. I'm not sure what they thought was going to happen. So they throw the bottle a few times and nothing happens. And they give -- honest to god, they give it up and they go to bed. And we get up the next morning and the smell of gasoline pervades the neighborhood, which is the first time that we found this out. I got a lot of those kinds of stories.

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So a couple of other changes in adolescence that's important to keep in mind that gets to the point of risk-taking, which both from a kind of intervention but also from a prevention perspective relates to head injury. Dopamine decreases in adolescence. Now dopamine plays a role in emotional response and the ability to experience pleasure and pain. It results in mood changes, difficulty with emotional increase, increased sensation-seeking and risk-taking. Dopamine also plays a role in attention disorders, interestingly enough. And so at least it's hypothesized that there's a relative dopamine depletion for kids with attention disorders. And dopamine has a role in activating the frontal lobes. You need more active frontal lobes because the frontal lobes are an inhibitory organ.

And then the other piece is that serotonin plays a role in mood fluctuations, anxiety, impulse control, and arousal levels. So the decreases result in decreased impulse control, so you could see what's happening in adolescence already, that as part of this kind of natural development, these issues are going on in adolescence.

Then there's a kind -- this evolving relationship between the limbic system and the immature prefrontal cortex. So teens tend to rely more on the emotional brain. It results in quickness to anger, intense mood swings, and decision-making based on gut feelings. So we -- again, if you work around adolescent kids, if you got adolescent kids, you've certainly experienced this, where that the emotional volatility goes up. It goes up because of the decreases in the neurotransmitters. Also it goes up because the prefrontal cortex, both in terms of its own connections with the limbic system, but also because its kind of immaturity relative to the development of the limbic system, doesn't have the same ability to be able to damp down that kind of emotional reactivity.

And you get what's referred to in neuroscience as increased hot versus cold cognition. That is increased thinking under conditions of high arousal and intense emotion. And so we're aware of this. You know, when we -- one of the -- we just finished this book on smart but scattered teens. And as we're writing, you know, we're writing intervention strategies, we're aware of the fact of saying to parents, you know, how you communicate with your kids is absolutely critical because all kids have to do is hear just a little bit of emotion in your voice, particularly if it's negative emotion, and you will immediately elicit this hot cognition, where you're going to get a response back that's going to be ten-fold what you thought you should have gotten. But again, if you work, you know, with kids, particularly with certain types of acquired or traumatic brain injuries, you're going to see this kind of stuff all of the time, where you can make a statement to them, you say something to them, and you elicit a response that seems hugely out of proportion to the issue that you brought up. And that's because of that tendency to rely -- and in fact the development of these limbic system structures and the relative lack of frontal lobe control in those kinds of situations.

So the negative outcomes associated with this stage of brain develop -- the adolescent brain. Motor

vehicle accidents increase by, again, 40%. Homicides, 15%. This is the adolescent death. Suicide by 12%. Those are stunning kinds of statistics. You know, nearly 300,000 kids injured in automobile accidents and estimates of 4,000 to 6,000 killed every year during adolescence as a result of that kind of -- that more emotional kind of reactivity. But also where we're talking about context-dependent behavior before.

You know, Peg was telling me yesterday that she was looking at stuff and girls seemed to be susceptible to this context-dependent behavior than boys. And if you've seen the Allstate ads, we didn't bring up the Allstate ad, but you've seen the guy driving around in the pink SUV who's supposed to be an adolescent girl. He's driving around a parking lot. He's got a cell phone. The radio's blasting and he's just running into cars. You know, because, well, it's near and dear to my heart because my daughter totaled two cars. My daughter -- you wouldn't pick my daughter out of a crowd as a kid with significant executive skill problems. They actually sustained a concussion in the second injury that she had. In both cases in a car, playing music, either using a phone or with peers, and all of her attentional capacity is basically devoted to the context at that particular point and not to the road in that situation. That's a fairly common phenomenon in this. Alcohol occurs in 41% of motor vehicle deaths. Nearly 50% of -- did that get cut off?

DR. PEG DAWSON: No, I think -- that was what you gave me and I haven't --

DR. RICHARD GUARE: Oh, nearly 50% of sexually transmitted diseases occur during adolescence. And the -- I forget what the statistic is on the number of kids, but when you survey kids about -- I think it's 40% of kids in high school who report that they've had sexual intercourse have not used any kind of protection whatsoever. So in spite of the information that's out there about AIDS, I mean, basically what this says is that these kids are by developmental -- brain development alone, they tend to be risk-takers. And so what they depend on us for as kind of surrogate frontal lobes is basically to manage that kind of risk-taking behavior. Yeah, I don't -- do you want to? We should take a break pretty soon.

DR. PEG DAWSON: Yeah, we've got two minutes. Basically this just shows that if you ask kids about risky situations at various ages, actually ten- and 11-year-olds tend to be more cautious than adolescents. And then at late adolescence, it dips again and we become more cautious as adults. And then the next slide shows a quote from Parade magazine that came out. Dick, can you -- yeah, that came out from Parade magazine that we really like. The teenage brain is like a Ferrari. It's sleek, shiny, sexy, and fast, and corners really well, but also has really crappy brakes. So okay, so we have a 15-minute break now and we'll start again after that.

I have not -- hello, I have not received any questions yet that have been written, so I know that doesn't mean you don't have questions. I just know it's something new that we've never done before, so maybe you just haven't gotten them to me. So we're going to take questions now for a couple of minutes, so I'm going to

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hand it over. Okay, thanks. People have any questions about anything we talked about this morning, yeah? There's one over there.

AUDIENCE MEMBER: I just got a quick question. If there's any connection between nutrition and myelination?

DR. PEG DAWSON: Do you know how to answer that? The question was whether there's any connection between myelination and nutrition.

DR. RICHARD GUARE: All right, you get the proverbial maybe. You know, I think that the problem is -- I mean, you know, just based on what's out there, you know, we'd guess that there is. You know, on the other hand, I'm not aware of anybody making any claims, at least in controlled studies at this point, you know, that clearly state that. But it's just hard to believe you're not going to run into that. I mean, that there's not going to be an issue. But it gets around that nutrition question about all of its impact on behavior.

I mean, I think we're assuming that, you know, if nutrition has an impact on behavior -- and when I talk, you're talking broad based nutrition, and we're talking about supplements and everything at that point. I think that we're assuming that those kinds of things affect. I don't know about myelination, but they certainly affect neurotransmitters. I mean, there's not any reason to believe -- for example, I was reading a magazine article last night, but there's not any reason to believe that, you know, like if -- SSRIs, you know, for example, facilitate the availability of serotonin, you know, in the system. Or you know, a methylphenidate facilitates the availability of dopamine at the synapse. That it's hard to believe that you're not going to get some other things out there that are going to do something similar. You know, St. John's wort and those kinds of things. I think we just don't have any hard evidence for that. So but if I had to guess, my guess would be -- it's more likely to be at this point around neurotransmitters, at least more in terms of more immediate impact than it would be around myelination.

DR. PEG DAWSON: Someone asked at the break about what happens, you know, as skills -- with these skills over the lifespan, particularly in terms of myelination. I've seen a couple of studies recently, including one just yesterday in *Science Daily,* which is a great place to find out what the latest research is. But they talked about how myelination thins out the older we get. And so what you'll see then is a slowdown in processing speed and a slowdown in that connectivity. So that -- and I certainly am, and I'm 62. I notice that it takes me longer to make those kinds of connections that used to just come like this. And I can certainly see it, especially the more complex the task is, the more I have to slow down and think my way through it. So that's one of the downsides of the aging process.

DR. RICHARD GUARE: Yeah, although my caveat for that, I'm always forced to bring this up is that it's funny, when I was doing my postdoc, I was also at the VA in Boston. And the notion at that time that you could do

anything to improve brain function, you know, in the sense of like treating the brain as if it were a muscle was thought to be absolutely crazy. You know, people thought that was just was absurd. And as it turns out, that's not so absurd. You know, and so we look at ways to enhance pathways and there's pretty good evidence. I saw a study sometime in the last day or two looking at the impact of both physical exercise and, you know, significant cognitive activation, and the extent to which it not only that it's possible to maintain skill levels, but enhance skill levels even in people where you would have expected some sort of decline. So I would think it's an area we just don't know a lot about at this point.

DR. PEG DAWSON: Other questions or comments or reactions? Yeah?

AUDIENCE MEMBER: Just the other questions is a lot of people on our team work with students with high-functioning autism and Asperger's diagnoses, and we see so much of this talk of executive function. Is that -- is there a specific link that you see with that diagnosis with executive function?

DR. PEG DAWSON: Dick can talk more about this because this is the population he works with, but clearly cognitive flexibility is particularly weak in kids on the spectrum. It's almost a defining characteristic with those kids. And associated with that, problems with emotional control. Those two seem to pair -- I mean, if you're inflexible, you get upset or anxious quickly, so.

AUDIENCE MEMBER: [inaudible] planning and organization.

DR. RICHARD GUARE: Yeah, in fact, we were -- we mentioned this to somebody else. We were reading a study yesterday looking at brain plasticity. And if you -- again, if you look at the more research side of autism and Asperger's disorder and those types of things now, that for a lot of people -- a lot of people characterize this, if not primarily, than significantly as an issue of executive skill disorders. I mean, even from a practical perspective, I mean, a lot of the work that I do, you know, I probably -- 50% of my time in the schools is spent working with kids on the autism spectrum. And kids who fall in a more significant range on the autism spectrum.

And it's pretty clear the day and day out, I mean, at a very practical level, we are their surrogate frontal lobes. Parents are their surrogate frontal lobes. And a lot of what this is about is the extent to which not only can you come up with strategies to help them become more independent, you know, like over a period of time, you know, but to what extent can you get that to generalize? Because that's really what the critical issue here is, that issue of being able to get them to generalize those kinds of skills across environments. So I think it's pretty accurate. Even if you look at [inaudible] and talk about the BRIEF, if you look at the Behavior Rating Inventory of Executive Function, that they have -- I mean, even in their original stuff, Peter Isquith was at a presentation we did last Friday. And he's one of the developers and he's responsible -- they're going to revise

the BRIEF, but they've got subsets of data that they've collected on kids with autism, looking at constellations of executive skills that are weaker.

DR. PEG DAWSON: Yeah?

AUDIENCE MEMBER: This one refers to current research out there. [inaudible]?

DR. RICHARD GUARE: I'm not. Is that ringing bells for you? What is it?

AUDIENCE MEMBER: There's a drug in phase three clinical trials now. It's a specific receptor binder. And in animal models, absolutely it seems to reverse the effects of Fragile X and so there are multiple sites now doing clinical trials, but I mean, it's not available yet.

AUDIENCE MEMBER: Right, and I just wondered if -- I wasn't sure how far it had gone out, what information is out there, and that [inaudible].

AUDIENCE MEMBER: Seaside Therapeutics.

AUDIENCE MEMBER: Pardon me?

AUDIENCE MEMBER: Seaside Therapeutics is the company. Their research is on their website. But it's actually amazing because it may mean the end of Fragile X, which accounts for something like a little under 10% of autism.

DR. RICHARD GUARE: It reminds me of -- it's a little bit off-topic, but there was a novel years ago called *Flowers for Algernon* and a movie called *Charlie*. And it was about the effects of drugs basically, you know, reversing cognitive -- I mean, it was basically cognitive disabilities, which is potentially -- I mean, now we're into a realm that gets fairly scary for, I think, for all of us because it's just hard to believe that there are blessings and no curses. Thank you.

DR. PEG DAWSON: We're going to move on. And we're not going to spend a lot of time talking about assessment because I think most people are here primarily through an interest in interventions. So but I just want to mention a couple of resources. I mean, I do primarily assessment for kids, you know, looking at executive skills issues. And I have a multifaceted assessment process.

But I think in terms of usefulness of information that leads directly to interventions, what we find is that when you use structured interviews or rating scales that get directly at executive skills themselves, such as the BRIEF, that's the most useful, in addition to the parent interview, to be honest, because I get probably better information from my parent interviews than just about anything else I do. But I supplement that with structured interviews and rating scales. And it's easier for me to understand and see executive skill problems

using those resources than formal psychological or neuropsychological tests.

So I just want to mention, you know, a couple of them here. The Behavior Rating Inventory of Executive Function. There are others. In fact, Peter Isquith was telling us on Friday that every test publisher out there is now generating a new executive skills questionnaire. Barkley has a couple out. And I've looked at both his kid executive skills measure as well as his adult one. Frankly, I still prefer the BRIEF. And the reason I like the BRIEF is that if you read the actual items on the BRIEF, it's so easy to start thinking about interventions. You know, becomes overwhelmed by large tasks, leaves a trail of belongings wherever he goes.

And in fact, I was telling Peter this. When I do my assessments, I look at what's checked off as often on the BRIEF, and then I look at *Smart but Scattered* and the various teaching strategies and pull out two or three and send them to parents and say, this is the strategy for leaves a trail of belongings wherever he goes. And so I found it really helpful in that respect.

The other one, let me just briefly show you what it looks like, the Casey Life Skills Assessment. Is anybody familiar with this? The Casey Foundation, they particularly focus on kids in foster care, but when you look at -- and I'll just show you quickly what it looks like. You have the website there, but they have a whole four- or five-page life skills assessment that really sort of captures the kinds of problems that kids at the end of high school you need to be thinking about. I mean, there are questions that deal with daily living. You know, I know where to go on the -- to get on the Internet. I can find what I need on the Internet. If someone sent the messages -- sent me messages online that made me feel bad or scared, I would know what to do or who to tell. And you can see there's a rating scale. You can actually take this assessment online. I've never had someone actually do it, so I don't know what you get as a result, but it's definitely worth looking into.

And as I say, they've got multiple sections. Relationships and communication questions. You know, I can speak up for myself. I know how to act in social professional situations. Let me just get this a little smaller. I can describe my racial and ethnic identity. I have friends I like to be with who help me feel valued and worthwhile. Then going down to housing and money management, I understand the disadvantages of making purchases with my credit card. I know an adult who would help -- I know there are some of us as adults who have trouble with that, right? I use online banking to keep track of money. Other ones, I can explain how to get -- renew a driver's license or a state ID. Work and study life, I know what employee benefits are or I know what sexual harassment and discrimination are.

So and those are you who are working with teenagers, especially teenagers who have this sort of rosy idea that they can live on their own independently. You know, one of my sons decided he was going to move out of the house when he was 14. He felt like he would have everything he needed to know by then. But this

might sort of an eye-opener. Let's go through this checklist and see how many of these things you can actually do.

DR. RICHARD GUARE: I use this with a -- and actually you can use this with young adolescent kids. I use the earlier version of this, but this is a brand new version. You know, this is free. Not only is it free, but when you get the ratings back, they have resources for how to address these skills across the board with kids. It's an absolutely remarkable resource. And although it's, you know, ostensibly targeted toward kids in foster care, I use this with a 15-year-old boy, 14-year-old boy, actually. He was 14 at the time who had -- he survived Eastern equine encephalitis which is a -- it's very unusual for anybody to survive Eastern equine encephalitis period. And in New Hampshire in that particular year, four people died from it. And it's the first kid that I'd ever seen. The only other kids that I'd ever seen with triple E had been in persistent vegetative states.

But this kid, not only did this kid survive, but he's about to graduate from high school. But he and his mother filled this assessment out when he was 15. And there was an enormous discrepancy between what he thought he was capable of doing independently and what his mom thought he was capable of doing. And this is a kid who's pretty high-functioning. On the basis of that particular instrument, he and his mother together made some decisions about transition planning for him. And we're going through that transition planning process now in terms of what's -- in fact, they met with an attorney the other day about guardianship. You know, again, based on what his particular information was about what he could manage and not manage in a situation. So at a practical level, it's probably one of the best instruments out there we've seen.

DR. PEG DAWSON: And in terms of an interview approach, we have -- and it's in both the coaching book and the executive skills in children and adolescents book. Let me see if I can get to it. We have a structured interview that we use, and actually I prefer this to norm referenced rating scales with teenagers because it's too easy for teenagers, A, to lie or, B, not to know themselves well enough to fill out a rating scale and describe honestly how often something happens. When you ask very specific questions -- in fact, I just got feedback from someone last week who also uses this and had the same experience I did. When you ask very specific questions about homework, it's hard for kids to make stuff up. So when you say, do you have trouble getting started on homework? And if so, is that true for some subjects more than others? You know, I'm not sure, I can't remember. What are the best times for you to do homework?

And this is a several page interview. And each question, each key question, is tied to a different executive skill. So the question about do you have trouble sticking with it long enough to get it done? That's getting at sustained attention. And so once I've done the interview, I can go back and see, where have I checked off not a problem and where do I have lots of notes? And then just look to see which executive skills are featured, and that gives me some sense of the student's own perception of strengths and weaknesses.

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Now I will also have parents and teachers fill out the BRIEF so I can make a comparison, but it does get me more information from the student's point of view. And this one, do you have trouble remembering assignments? That gets at working memory, and then there are others ones. As you can see, it goes on. And there're sections for long-term projects, for organization, for -- we have some impulse control questions as well. And this is a rating scale, unfortunately I can't read, it's too small, that Tom Ylvisaker, not Tom, Mark Ylvisaker developed. And it's available in some of his materials. That is -- it looks -- again, the wording looks a little better than some rating scales, so it may be easier for kids to be honest in terms of filling it out.

DR. RICHARD GUARE: Sorry. We assume that people have seen Mark's -- know Mark's material that was developed for the state of New York.

AUDIENCE MEMBER: We actually were bringing him here to present, and then Tim Finney came.

DR. RICHARD GUARE: Yeah, actually, I watched the Tim Finney presentations, the stuff you've done. He's a really entertaining guy. But Mark and I first met in 1985. We were both working for the same company at that time. Just a wonderful guy and been -- again, we looked back to a lot of his materials in terms of executive skills. He's a pretty remarkable guy.

DR. PEG DAWSON: Just in terms of the BRIEF, is everybody here familiar with the BRIEF? If you are, raise your hands. Okay, most here, some of you aren't. And that may differentiate school psychologists from other people, because it's usually school psychs who use this. But what you get, it actually maps really nicely onto our definitions of executive skills. It divides it up at this point into, and it may in the revision, but at this point they talk about problems with behavior regulation, which are the three data points on the left-hand side of that graph. And then in the middle are meta-cognitive skills. And then on the right-hand side are the index scores of global index and then behavior regulation, metacognition.

So this student here is a fairly typical, predominately inattentive type of ADD kid. You know, he doesn't have problems with behavior regulation. He's got huge problems with task initiation, sustained attention, working memory, those kinds of things. When Dick talked about kids on the spectrum, you know, at a minimum what we typically see on the BRIEF with those kids is they're elevated on the Shift scale, which is just like our flexibility, they're elevated on Emotional Control, and then they're elevated on the Monitor scale, because that's the ability to read how other people are responding or reacting to them. Many of the kids we see on the spectrum also have attention disorders, so then you might find that they're elevated across the board.

And then to sort of round out this part of the presentation before we get to interventions, what we have here are -- wow, it didn't -- oh okay, let me see if this worked. Yeah, okay, looks different on my page. This

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is a set of behavioral characteristics. This is what these kids look like in real life, in the classroom or at home. And we divided it out using the BRIEF's sort of breakdown of problems with behavior regulation. So all of these things here are problems with emotional control, flexibility, or response inhibition. And then the next set are problems with metacognition, so it's task initiation, planning, organization, time management, you know, metacognition. And so that's what these kids look like in real life. Now you can look at these and say, but every kid has these problems. And that is true. So you know, sometimes we get into discussions about at what point does it constitute either a disability or, you know, the need to put in place a 504 plan? And we have rules regarding -- I mean, we have guidelines regarding that, but I would assume most of the population you're working with are -- the majority of the kids that you're working with are on IEPs, am I right? Yes. No.

AUDIENCE MEMBER: Not as a BrainSTEPS program.

DR. PEG DAWSON: Oh, okay. And those who aren't, what's left over, are they on 504 plans? Some? How many of you work with kids who don't fall into either of those categories, but clearly have executive skill problems? Okay, so most -- okay, 504 plans and IEPs then cover most of the population. Okay. Any question? Again, I don't want to spend a lot of time on it, but if you have a burning question about assessment, you know, I'd be happy to take a question before we move on. Okay.

What we want to do before -- because we're going to spend the rest of today talking about interventions. This is actually kind of fun to get to this point before the day has gone too far. But before we do that, again, particularly looking at these two slides as well as everything we've talked about this morning, we'd be curious to know from the audience, what are the issues? Either what are the executive skills or what are the tasks that you find particularly frustrating with the populations that you're working with? So that we can tailor our presentation from here on out to cover those kinds of issues. Someone at the break talked about -- yeah, why don't you repeat what your concern is?

AUDIENCE MEMBER: With impulsivity being such a key that all the other executive functions [inaudible] what are the best ways to work on that impulsivity? Second would be [inaudible].

DR. PEG DAWSON: And the emotional control, okay. Yeah, she said her biggest interests are when the impulsivity is so extensive or so pervasive that it just prevents you from doing anything with any of the other executive skills. And then you can have the same problem with emotional control. The emotions are so out of control that you can't move forward either. Other issues that people, yeah?

AUDIENCE MEMBER: I find one of the most frustrating things to be a lack of self-awareness.

DR. PEG DAWSON: Okay. Can you just give an example of how you see that?

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AUDIENCE MEMBER: Inability to recognize certain faults.

DR. PEG DAWSON: Okay.

AUDIENCE MEMBER: [inaudible].

DR. PEG DAWSON: Okay, so it could be any particular executive skill, but they're clueless that it's actually a problem. Okay, yeah, that's good. What are some other issues that people are dealing with? And if you can give specific, you know, activities or situations, that would be helpful, too. Yeah?

AUDIENCE MEMBER: It seems like on many of our referrals of students that the parents referred that they were functioning on an honor's level, an AP level coursework, and now they're having great difficulty being able to really sustain much of anything as far as academic work in a, you know, time period [inaudible].

DR. PEG DAWSON: Okay, yeah. And that's real common. Where's the breakdown coming? Is it coming across the board or is it particularly with time management?

AUDIENCE MEMBER: I wouldn't be able to point to specific skill areas, but I would think there's a lot of [inaudible] that's contributing as well as physical, you know, there's headaches.

DR. PEG DAWSON: Yeah, increased fatigue, yeah. Okay, that's helpful. Other things that people -- yeah?

AUDIENCE MEMBER: Problem solving and sequencing like multi-step tasks.

DR. PEG DAWSON: Okay. So for like a long-term project or something like that?

AUDIENCE MEMBER: A project or even organizing sequencing, like even multi-step math problems.

DR. PEG DAWSON: Oh, okay, so even down to more of a micro level. Okay.

AUDIENCE MEMBER: Use a lot of graphic organizers and things like that that help structure [inaudible].

DR. PEG DAWSON: All right, okay. Did everybody hear that? Her concern was problem solving and the ability to sequence even within a particular task like multiple steps to do a math problem, but also long-term projects and things like that. Other sort of burning issues? This is your chance if you really want us to talk about as the day goes on.

AUDIENCE MEMBER: I think self-reinforcement, because with the executive functioning being off and again, at a different level, a lower level, you know, some [inaudible]. And talking about that, you know, desire to want to reach that goal, how can we inspire some type of motivation when they don't really want it.

DR. PEG DAWSON: Ah, okay.

AUDIENCE MEMBER: [inaudible] just kind of coast along.

DR. PEG DAWSON: Okay, so the motivational issues become compounded in the case of a head injury.

AUDIENCE MEMBER: Right, or somebody knows that they're having issues, but they're not motivated to improve, so how do we develop and motivate those kids?

DR. PEG DAWSON: Yeah, over there.

AUDIENCE MEMBER: The overreacting to small problems I would see as a big one. And just one other is just the ability to pace themselves, not to rush through a task.

DR. PEG DAWSON: Yeah, that's a good one.

DR. RICHARD GUARE: I'm a little bit surprised I haven't heard anything about social interaction and socially unacceptable or inappropriate behavior. I wasn't trolling for one, either.

AUDIENCE MEMBER: We were just talking about this one student who she had a stroke in elementary school and she's a senior now. And one of her big -- when she's around a group that she's comfortable with, the social interactions are much, much more appropriate. And just for example, we're having a function right now as part of our support group for kids transitioning. And there are other teams and other parents who are part of our group now that she doesn't know and is not comfortable with, and her social behavior goes right out the window when new people are out in the group. The structure's still pretty much the same, but her behavior -- and she's visiting transition classroom and she's acting out like she did years ago, which we've worked so hard on to work on with her in her normal environment. And now she's being placed in this transition place and she's completely acting out again.

DR. RICHARD GUARE: Yeah.

DR. PEG DAWSON: Interesting.

DR. RICHARD GUARE: It's funny, when you say that, I have a vision of her going into these transition classrooms surrounded by four kids and they all work as a group, so they move like a little pod so that these four kids -- and as long as she's within that pod, everything's just dandy.

AUDIENCE MEMBER: Yeah, so she's been a challenge. We had a little conversation yesterday about it. But yeah, I find that, again, I guess it's that context of the environment you're thinking about. And now we're changing it on her. Although we know she has the ability, I think she automatically throws up these brick walls and then starts reverting back to her behavior [inaudible].

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DR. RICHARD GUARE: Yeah. And one of the questions that we would ask about that, I don't want to get too far, you know, down the road with this particular thing, but when you talk about context, I mean, we talk our behavior being context-dependent. To some extent, my guess would be she doesn't have the skill in those situations. And she has the skill kind of in the abstract, but you know, one of the things that we're aware of, and I'm aware of because I do a fair amount of work with social skills and social coaching with kids in general, is that changing the context, the social context, in very small ways changes the context for kids completely. And a lot of what you would for in terms of generalization and transfer of skills is exactly what you're -- it doesn't happen, yeah.

AUDIENCE MEMBER: I did have one other question if you could jump on that. But you kind of touched on at the beginning that response inhibition, that working memory and emotional control, as far as a hierarchy, would you place them -- like you need these three skills executive functioning wise before we can address some of these other ones?

DR. RICHARD GUARE: Probably response inhibition and emotional control. And I say that from a perspective of somebody who -- I mean, I spend most of my time, I spend -- I only work in public schools at this point. And our commitment to teachers has always been at the point that kids become disruptive, you've got to come out because we're trying to -- we understand that if we're going to keep kids integrated into regular classrooms, to the extent that they start to interfere with the instructional process, it isn't going to work anyway.

And so then response inhibition and emotional control become priorities because if you're going to see some sort of explosive behavior, then it's going to -- it's more likely to come around those kinds of issues. It would be nice to have the other kinds of skills, but Peg just talked about, you know, the typical -- the nightmare scenario for us is poor response inhibition, lack of flexibility, and emotional control problems almost always come with lack of flexibility. And so that means any time you introduced a change, you know, you're going to get some sort of explosion in that situation.

DR. PEG DAWSON: But interestingly enough, if you have those two pieces and so kids are able to focus on a cognitive or academic task, then it seems like working memory would become the key skill. Okay, anything else? Yeah?

AUDIENCE MEMBER: We did have a referral with a girl in high school who one of the big things mentioned was sexual inhibition.

DR. PEG DAWSON: Oh, okay.

AUDIENCE MEMBER: And that was something that was --

DR. PEG DAWSON: Or lack thereof?

AUDIENCE MEMBER: Lack of.

DR. PEG DAWSON: Yeah, just want to make sure.

DR. RICHARD GUARE: Yeah, I was happy to hear my daughter talk about sexual inhibition. That's not what she was talking about. She missed the disinhibition piece of it.

DR. PEG DAWSON: Okay, so now it's your turn.

DR. RICHARD GUARE: Yeah, I think that that's probably enough. You've already hit all the areas that we're not going to be able to solve for you anyway, so.

DR. PEG DAWSON: Okay, so Dick, this is where you --

DR. RICHARD GUARE: Okay, so you're going to hear -- I mean, first of all, you know, from an intervention perspective. You know, I'm board certified as a behavior analyst, so you're going to hear behavioral and cognitive behavioral stuff as the bias that we're coming from on this. And I have both theoretical reasons for that and very practical reasons for this, having spent a lot of time working with kids and adults with these kinds of issues. You know, we're looking for what we think is well validated in terms of stuff that works, so.

But I guess in terms of strategies, we think about that there are three really critical strategies, and we're going to come at everything from this perspective. So first of all, you intervene at the level of the environment, so that's one level of intervention. And then secondly, you can intervene at the level of the child. You can teach the child the weak skill. That's really where we'd all like to be, ultimately. Or if the kids get the skill, then you would like to have them -- you'd like to motivate them to be able to use the skill. And we'll give you examples of both of those kinds of things.

But that's -- so that's -- and when we talk about this, I mentioned this to a couple of people at the break, you're going to hear intervention stuff out of our experience. My experience isn't going to be your experience, and so hopefully some of it makes sense. But what you're going to hear are general principles, and what you're going to have to do is put your kid -- the kids that you think about in the context of these particular principles. And we'll a little more specific than this, but you've got to think about, how would this particular intervention apply for this particular kid that I'm thinking about? And then if at that point it still doesn't get there, then ask the question. Because as I say, ultimately this isn't hard stuff for us to talk about. We could do this all day. I mean, it's what we write about, it's what we like. But it's really take something out of it that practically you can use. You want to?

DR. PEG DAWSON: Yeah, on page three of this same handout that has the executive skills questionnaire is a

one-page what I call a cheat sheet. Because this basically, this allows you to design an individualized intervention based on the strategies that we're going to talk about for the rest of the day. So if you go down and answer all of these questions about the kid that you're concerned about, then you would have designed an individualized intervention for that child. So just sort of keep that in mind also.

DR. RICHARD GUARE: Now in terms of the dimensions, and part of the reason why we approach this, modify at the level of the environment, then at the level of the child, is for this reason. Developmentally, what we talked about this morning is the developmental course of executive skills follows these particular characteristics. You go from external to internal. So initially, you're talking about either the environment or specific adults acting as a surrogate frontal lobe for the kid. That's what's the role that we're all playing. But eventually, we would like kids to internalize those kinds of skills.

Now if you want to get a look at what that looks like in a kind of -- in a way that a lot of us are familiar with, if you think about kids two, two and a half, three years old, it really depends on their language facility. They start to talk to themselves. And when they're talking to themselves, they're doing this out loud. And initially when they do that, they do that in a voice that sounds suspiciously like your own. Not only that, but they're using vocabulary that they don't typically use. Hopefully they've left the obscenities out of it, but they're using that kind of vocabulary. I mean, to the point where you say to yourself, my god, do I really sound like that? And in fact, you do sound like that.

And it's one of those strange times in cognitive development when kids, they superimpose your frontal lobe on their behavior in a way that it's part of them, but it's not really part of them. So they use your voice, they use your words, but they use it to direct their behavior. And what happens is over the next five or six years, that voice becomes internalized, the vocal intonation becomes theirs rather than yours, and the vocabulary becomes theirs. But that's really the most vivid demonstration that you get of how people internalize, how kids internalize executive skills. And one of the few times when you can actually see it happening.

You know, my son's fond of pointing out that at my age, the process starts to reverse itself and you do start to talk out loud again. And more and more, you're following the advice of your kids, which is fairly scary I guess. It's scary for me, anyway.

So then change the environment to change the child. Part of the reason why we think about change the environment to chance the child is this: that kids come to us with what they've got. And so our job is take the high road. You know, I use this example for, you know, working with kids on the autism spectrum. So I follow, you know, eight or nine kids right now who have no language whatsoever. They're all using -- we taught them

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picture exchange communication. Now they use pretty high-end voice output devices. But when these kids first came into preschool or kindergarten or elementary school, you know, if after the first day I could have said to the kids at the end of the day, you know, if when you come back tomorrow you talk, this will be a whole lot easier for all of us. We're not going to have to go through all of these kind of modifications and all of these things that we're going to have to deal with in the next 12 or 16 years to make this a better environment for you. But we don't do that. We understand that when they show up at the front door, that that's all they've got to work with. And so initially, we're going to have to adapt the environment to fit to them.

And so all of the interventions that we're going to talk about always start with the environment first. This is a goodness of fit issue. Ultimately, everything that we talk about from here on out in terms of intervention is a goodness of fit issue. And to the extent that the environment and the kid are mismatched with one another, to that extent you're going to run into a problem all of the time. Doesn't make any difference whether it's an organizational demand in the environment, the kid's got lousy organizational skills, or it's a demand in the environment that the kid waits at the top of the stairs and this kid's not very good at waiting. I got a jumper right now, and so when he gets to the top of the stairs, he has to jump to the bottom of the stairs, which is worrisome to people.

So, but we're thinking about what's the environmental modification going to be? Because I know that a lot of the kids that I work with, they're not going to have the inhibition, they're not going to have the organization. But if I don't tweak the environment to accommodate what they're bringing to this situation, we're going to run into some problems. We're either going to run into academic problems, or we're going to run into social interaction problems, or we're going to run into behavioral problems. Our barometer for goodness of fit is problems don't exist. To the extent that problems escalate or elevate in an environment, we're assuming that somewhere in there there's a bad fit between the kid and the expectations of the environment.

And then finally, going from external cueing to self-cueing. Again, if we want, if ultimately we expect our kids to develop good self-regulation, then initially we cue them. You need to pay attention to that. You didn't get your homework done. Wait. Stop. But eventually, you want them to incorporate those kinds of things into their own behavior at a self-taught level or not, but as long as they work. And so that's really the process that we're looking at all of the time. All right?

So what we're going to do now is we're going to go through these skill by skill. We're going to talk about intervention in a skill by skill process, with the environmental modifications on the left-hand side, with the teaching strategy on the right-hand side. And what you're going to see is that although we've defined this as if the intervention strategies were -- they're either environmental or they're skills teaching or they're

motivational. In fact, they're not that clean. In a lot of cases, you're going to be using all of these at one particular time. We've just tried to separate them out so that you'll be able to understand them, but also ask questions about them, okay?

So when we talk about environmental modification, what does environmental modification mean? Well, from a response inhibition perspective, we're talking about increased controls. Now that increased control can be something like putting a gate up or putting a kid inside a fenced yard or, you know, one of the slides that we show one of the other presentations looks at something called graduated drivers' licensing laws, which are in place in a number of states, where teens are restricted from driving under certain conditions until they're a little bit older. That is an environmental modification. It's also a way to increase external controls.

So when you're talking about kids, when we first think about external controls, we think about how do you physically tweak the environment to get some sort of [inaudible]. We talk about how do we physically modify the environment, but rules are an environmental modification, you know. When you say to your kids, be home at this particular time of night, you know, or, you can go out with these kids but not these kids, or, you can't go to this particular place, those are environmental modifications. So we're talking very, very broad brushstrokes when we think about those kinds of things. But the goal in all of response inhibition is stop the behavior. And when you first look at a kid in a particular situation that's got response inhibition problems, that's your first question. How am I going to inhibit this particular behavior?

So I'm walking down the hall and I get a kid, I'm walking down the hall, I'm coming back from -- a high school kid and I'm coming back from the weight room with him. Myself an occupational therapist and he hollers in the hall, screams in the hall. And that's -- so people stick their heads out and they want to know what's going on here. So the question is, you know, like how are we going to inhibit that particular thing?

So in this particular case, you know, I don't want to talk with this kid, but I got a quiet voice picture. We walk back to the weight room and we start walking again. And we keep doing that until we make it from the weight room to his particular classroom without him screaming out. Now that's purely an environmental -- started off as an environmental modification. But when all of the other people working with him over a period of two to three weeks, and I know this because I was sitting in his classroom when he left a week ago, now he goes from the classroom to the weight room and back, and I don't hear any screaming. So I know to some extent he's internalized that kind of behavior. So that's really what this is all about. And so that kind of -- that's literally stop in this particular situation, you know?

A kid, I've a little girl that I work with right now. In the middle of meeting, so this is in my wife's classroom, my wife's a public school teacher, this little girl gets up and she walks into the middle of the

meeting, which is disruptive for everybody. You know, sometimes she'll sit down, sometimes she'll take something from somebody else. And so what are we doing in that particular situation? So now we've got a classroom aide who's right now spending most of her time with this particular kid, and she reinforces the kid for sitting. Nice job sitting. Good job. Good job not talking out. But every two or three minutes, they go for a walk because I know -- we took some baseline data on this kid and I know that this kid's limit in this particular meeting is six minutes. She never gets past six minutes before she's in the middle of that circle. So a whole lot earlier before that, I want to get her up and moving around. And we'll extend her time over time, but the goal is she's being disruptive in that situation. I've got to stop her in that particular situation.

I was working with a high school kid who came back after pretty significant traumatic brain injury. And you spend much time in high school corridors, it's not explicit sex, but it's probably about as close to explicit sex as you'd want to get when classes are changing and stuff like that. You know, because kids are making out. And so, but this kid's boundaries are clearly not the same as everybody else's. And so he sees a girl and he just goes up and he hugs the girl. You know, and he doesn't think that there's a problem with that. You know, and he gets a reaction. You know, sometimes he gets bullied about that, sometimes he gets -- but in any case, he becomes socially isolated as a result of that.

And so we make a rule in that particular situation, you can't hug anybody. That's just the deal, you can't. Other kids do it, I understand that, but you can't. It doesn't work in this particular situation. And so there are times when we will make rules that are specific to our own kids, but as I say, the goal all of the time is how do I stop the behavior? Because that's really what response inhibition, job one of any response inhibition is, is stop the behavior.

Restrict access. That's another way that you do it. So GDR laws are restricting access, you know. Gates, we put gates across stairways. We childproof a kitchen. We do all of those kinds of things. All of them are in the service of how do I create some sort of physical or psychological or social barrier to keeping kids from doing what it is that they want to do but that are not acceptable to us. And so I'm always thinking environmental modifications first. What can I use in this particular situation? It's referred to in the behavioral literature as antecedent control. Am I going to put this kid in this particular situation? No, not if it's going to cause this particular problem.

I was in phys-ed yesterday morning with a kid and he's very inflexible, and so he has this notion that you have to -- if they play a game, he has to win the game. And he gets kicked out of phys-ed a lot because when he doesn't win or if he gets tagged, he gets down on the ground and he screams and he hollers and he cries. You know, and sometimes he might even be a little bit aggressive. And so I say to him beforehand, they're going to play capture the flag outside yesterday, and so I say to him, you're going to get captured. I

said, I want you to understand this. There's a 100% percent chance you're going to get captured today, couple of times. What are you going to do? I can take a break. If that doesn't work, what can you do? I can come and ask for help. What can't you do? I can't scream and holler in this particular situation. And so he manages to get through -- that doesn't always -- it would be nice if that worked all of the time, but we do a lot of that kind of rehearsal, prepping him for the situation right away.

And for kids who are inflexible, the idea is introduce a new agenda before they've formed an agenda. That's really what this is all about. Kids who are inflexible, they think once they set an agenda, because they're anxious when they're in open-ended situations, they will set an agenda that works for them. This is what I want to do in this particular situation. Once they've set that agenda, this is not what I want to do, this is what's going to happen. I can't tell you the number of times I've had up to and including arrested by police because they had an agenda that didn't work with the agenda of an adult.

And so, but the idea is -- so in this particular case, I don't even know what this kid's agenda is going in, except I know generically his agenda is win the game. So now I come along and I say, this isn't going to happen. We've got another one for this particular kid. His class, he doesn't like it when his class comes in last from recess during the day. And so he started to run away, so now we get people chasing him through the woods because we're -- you know, we don't want this to happen. And so I made a rule that his class comes in last every single day for the rest of the year. That's what I said to him. I said, your class is never coming in anything but last again, so you can go to recess or not. And that's what the deal is. If he goes to recess one day and freaks out, he misses recess the next day, and then he can try on the third day again.

But, and so we've essentially -- we've limited access to his particular agenda in that case. He can run the agenda from time to time and actually makes it through most recesses now. Once in a great while, he gets upset about that, but we've just set that up as a kind of condition for him. So, and we'll go through -- again, you know like you've got to go through, in some cases, some fairly extreme kinds of things because these are tough behaviors to deal with. But it's also the type of situation that if you can't do this, kids are going to get in trouble around this kind of stuff.

It's more complicated when you're dealing with adolescent kids because now not only do you not have the same capacity to be able to restrict access to the environment, but they potentially can engage in what are catastrophic risks. So now we're not just talking about -- we are, in a lot of cases, literally talking about matters of life or death. These kids can cause themselves enormous kinds of trouble out there. So for us, it's whatever it takes, doesn't make any difference. If it takes the police, then we use the police. That's the -- for me, it's all about did I accomplish the goal? Whatever that takes. Because sooner or later, that's what's going to happen with these kids, anyway. You know? If we can't stop the behavior and somebody else can't stop the behavior,

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somebody's going to step in to stop the behavior, you know? In my world, that's either going to be the police or the police are going to pick them up and they're going to transport them to the hospital, where we staff the emergency room and we're in charge of the admissions. And these kids are going to be judged a danger and they're going to the hospital anyway. And so they're going to be locked up for some period of days.

So and then we move down to -- so hopefully what we do is we talk about -- we post classroom rules that we review regularly. We post rules and we review them regularly. So I know a lot of kids that I work with and they're walking around with cue cards. What are the behavioral expectations? Quiet voice, follow directions. Safe hands, quiet voice, follow directions. And we're reviewing that kind of stuff all of the time with them. And we're reinforcing them for it. So now we start to cross over into this other area. It's not just an environmental modification, it's how do I begin to teach these kids to inhibit their behavior in a particular situation?

So I want to cue the child. That's what I'm doing. When my kid's coming from the weight room and I say to him, stop, that's an external cue. But now I don't need to do that with him anymore, you know? My recess kid, sometimes I need to do that, but less often. One of us used to have to be out there every day at recess because we knew every day this was going to blow up. But now we don't -- now I can say to him in the morning, you know, today's gym. What's the deal with gym today? Or when you go out to recess today, what's the deal with recess today? I want him to carry that cuing system around inside of his head. Takes a lot of work to do that.

And I guess that's the other thing I'd say. I mean, you'll hear this from us kind of all day long. These are label-intensive interventions, you know. You only have to work with kids with pretty severe traumatic brain injuries or acquired brain injuries or pretty severe -- kids who are pretty severe on the autism spectrum to understand that this is labor-intensive stuff. And in a lot of cases, if we decide that we're going to do this, this gets to your question a little bit, if we decide that it's going to do -- we're going to do this and it doesn't work, it's our fault. The plan was lousy.

And part of the reason why the plan is lousy sometimes is it's for want of attention in the sense that we didn't throw enough resources at it. But in a lot of cases, you're throwing a lot of resources at this stuff. I mean, this is going to be minute-to-minute kinds of monitoring. But you're also talking about behaviors that are so difficult, when you get into -- when we talk about social coaching later on, you're talking about behaviors that are so difficult to change that you got to understand on the front end going in what it is that you're going to try to do because otherwise you might as well say, why would I bother? You know? And I to say that, but if I feel like people don't have the resources to be able to do it to begin with, I don't know that there's a lot of sense in trying it.

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Teach wait, stop, very early on. It's interesting, we looked at a study. We don't -- I don't look at a lot of cross-cultural stuff, but if you look at development of response inhibition of kids in America, this was a study that was done of selected class, at five years old in the United States and kids in China. Guess who's got the better response inhibition? Measurably. Yeah, it's a very, very striking, you know, effect. Why? Because in that particular culture, that's a cultural value. But what it told us was that if you work on this kind of stuff early on, you can teach kids to do this kind of stuff.

I see it. My wife's a kindergartener and first grade teacher. You know, god love her. There's nothing scarier to me than being in her classroom in September when a group of five-year-olds come into the room. I find that to be the most intimidating experience in the world. Because they're all out of control, you know? And that doesn't -- she's also -- she got an attention disorder, and that probably helps her, but she sees where this is going and she understands. And so she manages to get them together, you know, of which, again, I'm always going to -- she manages to get them together and they start to formulate rules. She involves them in rule-formulation at that point. Because they're much more likely to be invested in their rules if they do that kind of stuff.

And so that's the other thing we tell you in general. And I know Marcus talked about this before and I did watch Tim's presentation. This is about get kids to be involved in this. Part of this is a negotiation. And if you can get them involved to some extent, then they're much more likely to be able to follow through on these kinds of things. But always we teach wait, stop, and we teach delayed gratification. I mean, a lot of what schools and a lot of what living is about is about delayed gratification. You know, but it's --

DR. PEG DAWSON: I'm sorry, can you say a little more about teaching wait, stop? I've had this question come up in our workshops.

DR. RICHARD GUARE: Well, yeah, I guess that, I mean -- not that we -- well, I mean you're always looking for naturalistic ways to teach wait, stop. So or, you know, kind of delayed gratification. So like in classroom, let's suppose like up through elementary school, if you're talking about classroom meetings, wait, stop is a critical rule because I want to say something.

You know, like you bring in something for show and tell, but my wife calls it bring and brag. You bring in something in for that and you want to talk about it right away. And you can tell kids aren't listening to other kids, you know. But you go through this process of you can't talk about your stuff right now, you've got to wait, you know? And people use visual -- they use talking sticks. They use any kind of reminder to say that some of this is about waiting. And in some classrooms, they make you ask a relevant question of the kid who's doing the show and tell to make sure that you're really just not focusing on what you're going to say when your show and

tell time comes. I think that's a -- I love that kind of strategy. So not only it's a wait, but it's a kind of wait-and-reflect type of strategy.

But at any kind of a level, you can teach this kind of -- you can teach wait or stop. I mean, we teach in the halls because we're aware of the fact that hallways in public schools basically represent kind of a runway. I mean, how often do you see little boys when they're not with their class? I mean, they walk out of the door and they bolt down the hall, you know? Some teachers lay in wait for them, you can tell. You know, these are rule enforcers who are the teachers. You need to go back and walk.

But I think that that's really what that's about. It's about, I mean, any time you get an opportunity to teach wait or stop in any kind of situation, it's valuable to teach that. When we were talking about context-dependent behavior before, that's how context-dependent starts to get discriminated from goal-directed persistence. I need to, I want to do this right now. We need to wait a couple minutes. I'll give you my watch. I'll give you a timer. All of the kids that I work with where we're working on this kind of stuff, they all get timers. They set the timers. We teach them very, very early on to set the timers. And they understand that wait is over when the timer goes off, you know. Even at a middle school and a high school level, you know, where now you get kids carrying smart phones, everything's on time, because that's really what -- you get an appreciation about wait and stop is about when you start watching the clock. And so for me, it really is kind of a time management strategy. But I think that that's anything that's a kind of visible reminder.

You know, we're working on an app right now, Peg and I and my son are working on an app right now where one of the functions of the app will be to show a task, and it would be to show how much time you've got left to finish the task, which is another kind of -- and you can't get to the next thing, you can't get to the reinforcer until the task is done. So basically you employ a task, but you also impose -- you also employ a visible timeline that says not only do you have to wait until this timeline is over, but you've got to complete this particular task at this level of expectation in order to get to the thing that you want to be able to get to. And so the other way to teach wait, stop all of the time is you've always got to go through this to get to this. You know, sometimes we have kids wait just for the sake of waiting, but there are other times when we teach wait, stop by saying, I want to do this. Well, first you need to do this and then you need to do this.

And we use picture schedules for that. You know, we use picture schedules for pretty high-functioning kids because you don't get into nearly as many arguments using picture schedules, you know? Or a written schedule, you know, where are you on this? I've still got this to do. Well, when you finish that, you can get to this. So any kind of thing that delays your gratification in the service of somebody else's gratification, in this case it's the adult's gratification. You know, as soon as you get your math done or your reading done or whatever, then you can have what you want. Anything that does that is in effect teaching wait, stop. And we're

looking for ways all day long to build that kind of stuff into intervention. And then we just talked about this delayed gratification.

So have people have got questions about response inhibition? I mean, like this kid that I'm talking about right now, this middle school kid with the obsession about the girl, you know, his mom said, well, what are we going to do? I said -- and I talked to the case manager in school yesterday morning. You know, I said to the mom, you're unequivocal about this. When the kid gets upset because the kid sees the girl and he wants to come home. and the mom has felt, you know, bad. I mean, this kid, he really is suffering. So she picks him up. I said, you can't do that anymore. He's got to stay in school. I don't stay if he stays in the principal's office or the nurse's office or whatever, but he never comes home. You know? If he's going to pine away for this girlfriend.

And the real problem with this is he's probably not going to get easy access to this girlfriend because there's some other issues going on. So, but essentially the first step is no access. It's just it's not a choice. And we are now -- what we're going to embark on over probably the next four or five days is we're going to make his access to other things that he likes contingent on his getting some of his stuff done, because nothing's getting done at this point. And then quite honestly, we're all so -- we're probably -- I had a conversation with the mom and the neurologist is a friend of ours and we're probably going to try medication. You know, we're going to try probably one of the SSRIs because we think that it's going to take more than just a behavioral intervention to break into this at some level. Any questions about that? Again, as I say, I'm not proposing we got solutions for everything, but this is the stuff that's been effective for us. Okay? All right.

So working memory devices. This notion on the left-hand side of orthotic memory devices? When I was working at this acute, post-acute rehab place, a guy named Ned Kirsch, who was from the University of Michigan at that time, he came up and he brought a computer with him. And he had on that computer, he had a cleaning task and he had a cooking task. Because we had some people with some pretty severe memory problems. And what he did was he called the computer a cognitive orthotic device, which we thought was pretty cute. Yeah, that's kind of an interesting idea. But when you think about it, you can have low-tech or high-tech cognitive orthotic devices, you know. An agenda book or a calendar is in effect a kind of cognitive orthotic device.

And one of the other things to think about all of the time is when we're going from external to internal, when you're trying to use that when you're going from external cueing to self-cueing, you don't want to be the cue. As soon as possible, you get the adult out of the situation and you create some sort of intermediary between the kid and the adult. Because you're not going to have the time. And to the extent that the kid remains prompt-dependent on the adult, at some point this is going to break down entirely. In New Hampshire, it breaks down at 21 because all of the funding disappears. That's the truth. We get zero funding after 21 for a

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lot of our kids. You know, if we're lucky, we'll get 10 or 15 hours a week, which means that these kids are going back to their families and they are becoming hyper-dependent. I mean, they basically become completely debilitated at that point. So the sooner you can create devices out there and ways for these kids to use some sort of cueing device independent of an adult, the better.

So as I say, we use agenda books and calendars at a kind of a high end. There are notebooks, to-do lists. When you have a to-do list, how do you go through your list? What happens when you do one thing on the to-do list? Yeah, you check it out. It's a hierarchy, right? It's always kind of a hierarchy, for most people it's a hierarchy. And then checking it off, what's the checking it off a cue for? Move onto the next task.

And so the principle of backward chaining, where you teach a whole sequence of behaviors, is predicated on that notion that if you complete one step in a sequence of behaviors, then that step becomes a cue for the next step. I don't know that I would -- I don't want to go through the behavior analysis of this, but part of the reason why I think when I'm walking through the kid who's coming from the weight room and he hollers and we go back to the weight room, part of the reason why I think that's an effective intervention is because I think on his agenda, it's getting from point A to point B that's reinforcing.

And so every step along the way -- because for a lot of reasons, because his classroom is reinforcing, because that's what -- but every step along the way becomes he wants to be able to get to that. So now if there's a contingency for him to be able to get through that environment successfully, he has to meet that contingency. So when he's quiet, we walk. When he's loud, we stop. And so after a while, if he wants to move, we got to move, he's got to be quiet in that situation.

I actually did this with him, this is a kid who he's got an eight-step sequence to getting all of his stuff ready for lunch, which also includes microwave, doing a microwave. And he does the same thing. He will engage in these kind of loud vocalizations when he's in the middle of that sequence of steps, and so I stopped him. Now I know we got a powerful reinforcer because I'm in the way of lunch, and food's a very powerful reinforcer for this kid. But it turns out to be quite effective. And so he can negotiate that particular strategy now quietly. And again, that helps everybody else in the classroom be able to manage that.

So electronic devices. You know, apps, you know, iPad, iPhone. I mean, so this is the iPhone 4S. I have it because I had phone envy. Both of my kids had this before I did, and so I just -- I refused to -- I just refused to allow that to happen. I don't know how to use it very well, but Siri is very effective for this. So I can say to Siri, when I get to the grocery store, remind me to buy such and such. This is really scary, actually. So Siri can track my location by GPS, and when I get to the store remind me what I need. Isn't that remarkable? At my age, I am so grateful for these kinds of devices. But tell me in ten years whether any of us will have any working memory

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capacity at all. You know, we all just -- we all have these devices hanging off us.

But I think that that's -- what that points out, part of the reason why we're developing this particular app is because rather than depending on kids being able to get through an entire sequence of tasks, remembering how much time they have and what the sequence is, now they're paraprofessional dependent. We're going to take that away. We're going to give them the app.

We've actually done this with a picture schedule already, so one of my kids can get off the bus in the morning -- the paraprofessional told me this yesterday. She said, this morning, he needed one prompt in 45 minutes, which is remarkable. And so, but we're going to go to no prompts. We think can get through a couple of hours in the day at least. I don't know if people or going to have to be close by or not, I mean, that's really the thing we're going to try out, but that these kids will be able to execute long sequences of behaviors with these kinds of prompting devices. And eventually they will internalize the sequence of behaviors. We know that that's what's going to happen.

In terms of teaching strategies, this first one, directions and past experience prompt them to access it, this is the notion that -- the power of working memory is the power of your experience in the past being able to help you guide your behavior in the current time. So one of the ways to be able to help kids understand that is -- so I say to one of my kids, I don't want to bring up the unsuccessful experiences, but I say to one of my kids, remember what you did yesterday? You did a really nice job on such-and-such yesterday or during such-and-such yesterday. Do you remember what you did? Yeah, I did such-and-such.

And we're doing that all of the time. It's a good way to teach a connection with working memory and to get kids in the habit of accessing working memory. Because in some ways, thinking about accessing working memory is a meta-cognitive strategy. They don't automatically reach back into their past experience to remember the current time. But if we're around to prompt them, then if you do that often enough, then when they go into that experience, when they go into that situation, the situation will work as what's referred to as a discriminative cue for that behavior being recalled in the past.

And if you're focused on successful experiences for kids, then that's an effective way to go. We want kids to use that past experience, and so that's a much -- that's a kind of a more sophisticated way in terms of trying to get at working memory. And then there's the, you know, generate options and have them choose or elicit options from the student. Why have them do that? Because a lot of these kids don't think if they -- again, if you're talking about kids, certainly talking about kids with traumatic brain injuries, they don't necessarily recall what the options are. Free recall is not a strength for them. So, but what we understand is that recognition memory is a much easier way to access information than free recall.

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And so a multiple choice, a set of multiple choice options, is basically providing them with a recognition cue. So that's what you need to do. And I would worry about, you know, people -- we talk to teachers sometimes and they say, well you know, he's going to have to be able to do this on his own, or, she's going to have to do this on their own. You know, or you're dumbing down the task for them. Our criteria all of the time is, can the kid successfully negotiate the task? We understand how to fade the help over a period of time, but you're not going to make them independent, you're not going to just say, well you need to do this, you know, if you're going to be independent. They're not going to get there getting that kind of approach.

Mentally rehearse the association between the cue and working memory. So again, this is this kind of mental rehearsal. So in this particular -- like with my recess kid, I want him to think all of the time when he's going out to recess what the relationship is between this particular event and the behavior that he needs to accomplish in that particular situation. Same thing with tag, although we're still having to provide that as a very concrete cue. What are you going to do in this particular situation? What do you need to do in order to be able to stay in the game? But we think that we'll be able to fade that with time, you know? But already this kid will come to me sometimes and he'll say, I did a good job in recess today, or, I did a good job in gym today. So not only did he recognize probably beforehand that he needed to use this particular behavior, but afterward he reflected on the fact that he used that particular behavior and did well at it. So there's a kind of self-monitoring component in here, again, that's part of working memory, it's also part of metacognition.

Emotional control. So the notion -- in applied behavior analysis, you know, we talk about antecedent control. Basically this is where you start to get an idea about what antecedent control is like. You eliminate the triggers for the problem in the first place. So where do your kids -- you know, if you think about this all of the time, and this is partly an issue of what's referred to as functional behavior assessment. Like if you think about your kids, where do they have trouble? Where is trouble? If I said to you, tell me the situation that's most likely for this particular kid to have this problem in. Like you gave the example of transition class. So what do we know about that? We know that -- where is the behavior most likely to happen? Can you make the behavior happen? Yeah, you could make the behavior happen just by sending her to a transition class. You know, where's the behavior least likely to happen? When she's around a group of friends. So now, in a sense, what you understand -- you know, and what I'd say to you is that now the question is, how explicit does she have to learn the steps along the way to that particular thing?

Because that's really what this is about. But the devil is in the details of that. But that's really what the notion is. What's the -- if you know what the trigger is and you know what the trigger is not or where a situation is not a trigger, how are you going to bridge those two particular things? And initially, I might not even send this kid into these classes. You know, it depends, you know? The problem in life and the problem in school

in particular is nobody can ever suspend time. You know, people are coming to you, I'm sure, and they're saying, well, this kid's got to be able to do this because this is -- we're moving on here. You know? And I do that get part of it. So sometimes you'll try to accelerate it. But initially, if time after time after time, you know, you send a kid into a situation and they have a problem in that situation, you know, after a while you say, maybe we shouldn't send them into this particular situation. I mean truly. And so we will look at that initially of just eliminate the trigger. I'm going to show you a behavior intervention this afternoon where putting a piece of math work in front of a kid is a trigger for a problem behavior. And so initially, we either don't put the math work in front of them or we put it in front of him in such incredibly modified form and delivered by somebody who's going to help him that he doesn't even see it as the same task. That's why I do -- makes me wonder whether like in the situation that you guys are talking about, whether there's a way to take what this kid -- I mean, I wasn't being serious about that, you know, five of them circling around her in --

AUDIENCE MEMBER: But I think that where I failed her is I didn't foresee that she was going to have this behavior. She had in the past [inaudible]. I should have better prepared her for what this was going to look like and what was expected of her before she went into it.

DR. RICHARD GUARE: Yeah well, I don't disagree with that, although on the other hand, I mean, you know, most of the time when we recognize that kids are going to have behavioral issues, we do that by virtue of having sent them into a situation. I mean, it's really the only way -- and I think you have to do that sometimes. I mean, not because you want to subject kids to catastrophic failure, but in some cases, I mean, you really do want to know, are we past this problem?

AUDIENCE MEMBER: Right. And I clearly found that out.

DR. RICHARD GUARE: Yeah, yeah, so that's -- but you know, as I say, if you don't take that particular approach, you never let your kids go. You know, you are petrified. It's like my kid getting off the bus in the morning. Nobody wants to do that. Oh my god, what if this happens? What if he runs away? And so all we want to do is we want to create the conditions under which we can watch what happens in the particular situation. And if it blows up, then we say, well, we probably need to tweak the situation a little bit. But still you got to see what works. And I'm still more of an advocate about taking that chance. As I said, I wouldn't take it with -- I don't want to do it with a kid with lousy response inhibition driving a car, you know. But you know, I think that in the more protected situations that we work in, it's probably a little bit, you know, safer enterprise.

But so that's what -- in a lot of cases we're initially going to reduce or eliminate the trigger. We're going to damp down what that trigger is enough for the kid to be able to manage the situation. If you're working with kids who will have phobias, you're doing this all of the time because the phobia -- the fear thing triggers this

overpowering response, which is basically an avoidance behavior. They've got to get out of the situation because they don't want to experience the anxiety. And so you've got to get them out of that particular situation. You could approach that situation, but you have to approach that situation very, very gingerly at first because otherwise the kid's not going to be able to get past it. If their anxiety accelerates rapidly in that particular situation and they fall apart, you haven't gained anything at all. That's why, for us, once you know that there's going to be a problem in a situation, now you're backing down to the level where you need kids to be able to be somewhat successful in that situation before you decide you're going to move them on to the next step.

Give the child a script to follow. Why? Because that is a step. That's a guideline. That's what do I need to do in this particular situation? And again, all kids need these, right? My daughter wants to set up -- my daughter when she was 17, she said, I want to take care of my own doctors appointments. And I think, oh my god. But that's one of those -- and so I said, well, okay. She needed a physical for track, so I said, here's a good place to start, you know. She said, I don't know what to say. And so we did a kind of script, you know, for her. And so she calls up and she's got this kind of script in front of her and I'm listening to her, you know, and she gets through it. And after that, you know we do that for a couple of kind of different docs appointments, and she's fine after that.

So, but again, the script is an intermediary between you and the kid. So to the extent that you can give the kid something, and this can be a written script, this can be a picture script, this can be a video script, it really doesn't make any difference. What you want the kid is to be able to have a set of guidelines to follow. You know, don't you feel better if you go into a situation and you know what it is that you're going to do? If somebody said to you, when you get to this particular situation, do this, or, this is what these people are going to ask you? All of us feel better about that. And to the extent that we've got a script in a particular situation, it works better for us.

Remove the child from the problem situation. Well, we do that pretty routinely, as I said, because our commitment in public schools, at least in the schools that I work in, is if the kid's disruptive, we're going to get him out. It's not like -- I mean, waiting for them to -- I have a little girl that takes her clothes off, you know? She gets upset, she strips down. So it's not -- I mean, for a lot of reasons that's just not going to work in a classroom. And so as soon as the shirt comes off or as soon as the shoes come off, we're out of there, you know. She's coming out of there.

But not, you know, when people say, you know, I know -- I have a doctor intern working with me right now and he says, well, how's that not reinforcing task avoidant behavior? Because the kid is never going to escape the situation. Because they're always going to have to go back into the situation and solve the particular

problem. So my little girl's always going back into this situation, you know? That's the deal for us all of the time. So we undercut the likelihood of reinforcing the behavior by pulling a kid out, by saying there really is ultimately no escape from this particular situation. We're always coming back to this particular thing.

And that requires us to do some things that are difficult sometimes. Like I have probably four or five kids now, we have after-school protocols in place with these kids. Kid's disruptive during the day, class work doesn't get done, kid's got to be out of class? We keep the kid after school. Because the bottom line is it's got to get done. You have to finish this particular thing. And we don't do that a lot because it's very taxing on school personnel, taxing on me if I happen to be the person doing it, but we also think it's important for kids to understand somebody's always going to set a limit around this kind of behavior. Yeah?

AUDIENCE MEMBER: I just have a question. Alan Kazdin had a unique approach where he would take problem behavior and just make it less severe by, you know, saying, I understand that, you know, in uncomfortable situations, you remove clothing or whatever. Let's practice this and if you're uncomfortable, you just remove your shoes. So you're basically not seeking to necessarily eliminate the entire behavior, but make it more powerful in the situation and then kind of go backward from there so that less and less comes off, you know.

DR. RICHARD GUARE: Yeah, no, I think that that approach makes a lot of sense. We actually ended up doing that with this kid out of this particular situation, but this is also a good -- this is a kid on the autism spectrum who she's got no language. And so I can say to her till the cows come home, well, why don't just take your shoes off? And she's also very obsessive, so her particular obsession or compulsion at this point is get all of the clothes off.

AUDIENCE MEMBER: [inaudible].

DR. RICHARD GUARE: It's pretty hard, although -- yeah. And we've had a different approach to that. You know, like once all of the clothes are off, we make her work to get the clothes back, which she really is annoyed by. But which interestingly enough, because we did this a couple of years ago doing a toileting protocol for her, after a while, she doesn't take the clothes off because she doesn't want to have to work to get the clothes back, because we give her limited access to the clothes. So now she's got to construct a sentence. She's got to construct a picture sentence that says, you know, like I want my socks, please, or I want my underwear, please. You know?

And if she throws the socks or she throws the underwear, we take that and we also take the book. And we have her wait for two minutes, then she's got to shut the timer off, she gets the book back, she's got to do this sentence. So the whole process becomes quite laborious for her. And you can spend a lot of time doing this, I mean obviously, but it's proven to be effective for that.

But I know -- we like Alan Kazdin's stuff a lot, I think he's great around these behavioral issue kinds of kids. And I think we can use something like that as a way -- anything that you could do that again, in a sense, incorporates the kid's idiosyncrasy into this particular type of thing and takes care of some of that need to maybe express some sort of frustration. You know, but I mean, isn't the teacher phrase, use your words, you know, the kind of long-term extension of that, you know? This is more like, you know, throw your shoes but don't hit anybody with them. And I think, honestly, I think that that's what it's all about. And I think that the -- you know, oftentimes we're going for let's solve this problem. And there's not a -- this problem is going to take a while to get solved. So yeah, I think that's it's a good intervention, it's a good solution.

Let me get through the teaching strategies and we'll break. So teach kids to recognize situations or early signs. So in a lot of cases, what we want our kids to do is understand what their trigger situations are going to be. And again, we're doing that a kind of cognitive and cognitive-behavioral level. So beforehand, I mean, if once you've identified -- and again, kids have to be operating at a certain kind of level of cognitive ability to be able to do this to begin with. But if they are, if you say to a kid, when you go into this particular situation, what happens? Or when you go into this particular situation, this is what I notice happens. And after a while, in the same way that little kids begin to adopt our perspective from a kind of frontal lobe, from a surrogate frontal lobe perspective, that I want the kid to say that. So now I walk into the situation, I'm saying, when you go into this situation, what happens? Because if we've rehearsed that day in and day out, after a while they can parrot the words at least, but that's the first place I want to be. I want the kid to begin to internalize and to be able to recognize this situation is a problem for me. I don't want to talk through the whole scenario because I don't want to pay a lot of attention to that, but I want -- I always want to go away to the alternative. If this happens, what can you do? Well, for some kids, if you're in the early stages of this process, let's talk about some things you can do. You pick out the things that work best for you.

Teach them sort of a coping strategy, you know, like what is that? Well, that really does depend. I mean, this is where it gets down to real idiosyncratic kinds of things. And what you're talking about with that Kazdin kind of solution, kids have different kinds of coping strategies. You know, we would like all of it to be as contained as possible, where it's not disruptive to other people. So I've a kid right now and when he gets anxious, you know, he would -- I mean, he would really get agitated. He'd get motorically agitated, so he jumps up and down, and physically agitated, so that he -- I mean, sometimes he would throw things. And he gets louder and louder because he really is kind of agitated.

And so, you know, the occupational therapist just as a kind of crapshoot one day, she puts his hands together and she models some breathing exercises for him, takes a little while. And now this kid is actually able to do that. He's able to actually take himself through a breathing exercise. Because the other thing that he

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would do is he'd set this kind of agitation and he'd say to people, am I okay? Am I okay? Am I okay? And people'd be saying, it's okay. You're okay. I'm thinking, you know, this is going on two, three hundred times a day where people are trying to reassure this kid. If people are asking a couple hundred times a day if they're okay, after the first time if they hear they're okay and it doesn't reassure them, the 200th time is not going to reassure them. They're starting to feel more anxious because they're wondering why you're saying that so often and they're not feeling any better. So, but again, you know, it's probably -- in some cases, the coping strategy is, well, get out! Bail out of this particular situation. Walk out, leave, take a break, you know? With the proviso that if you do that, you've still got to come back in and deal with it at some point. But we're willing to consider anything that's a coping strategy as long as it's within the confines of what's permissible in the school and we can see a way past it that will bring a kid back into a situation. But I'm all in favor of kids making up their own coping strategies.

And then finally, rehearse the strategy repeatedly until it's internalized. This is absolutely critical. You know, and I know this -- I used to teach -- I used to work with adults with panic attacks and we would try to take them off medications, Halcyon in particular because it was a problem medication to get off. And so we would teach them progressive muscle relaxation techniques. And one of the things that we realized was that the only time that these techniques were effective for people is when they were so practiced at the technique that they could bring it on automatically. And so we're having people practice this daily, sometimes twice a day. You get to a point where if you get very good at these techniques, if you initiate the first exercise of the technique, your body will reflex relax.

But that's true for any of these kinds of skills. You know, when Peg was talking before about the tennis thing and you're having these kids practice these things over and over again, you can develop a level of automaticity with these skills that only comes with practice. And in more complex behavioral routines, you can get the same thing, but it really does take practice. I mean, you have to fade the support over a period of time. This is really where the kind of hard work of this takes place, because it is labor-intensive and you have to be pretty graded about the way that you do it. If kids fall apart in the middle of this, you know, you're starting back at kind of square one again. So that's you never want to pull the support too early. All right, so let's take a break for lunch. We'll come back and we'll pick this up.

FEMALE SPEAKER: Okay, thank you. So for lunch we have from 12 to 1. If you remember, lunch, you're going to go out this door, down the ramp, and the food will be down there. Here's how the afternoon's going to work so we get out of here right on time. We are going to finish our training portion at 2:45, and then you're going to meet here with your team from 2:45 to 3:30, and your team leaders should all have gotten a folder from me. If you are here without your team leader, find me at 2:45. But anyway, you're going to go over goals and

objectives for the coming year and kind of strategize a plan for moving your team forward. Okay? Okay.

DR. RICHARD GUARE: Okay. We're good? Okay. So this is bring and brag for us. So this is the cover for the new book, this is *Smart but Scattered Teens*. And it will be out in I think November or December is what we're thinking about now. And my son is a -- I'm actually -- my son's had some pretty significant struggles in his life, but I'm really proud of him. He's a co-author of this book. Yeah, which has been great, you know, and we got through most of this without killing each other, which is a major accomplishment. But anyway, we're really excited about the book because, you know, we wanted to, when we originally talked about *Smart but Scattered*, the editors convinced us that we were crazy to try to take on the whole gamut of development. And they said that, you know, like adolescence is such a different kind of time. And so this really is devoted to the high school years, you know, the transition from middle school to high school, and the transition from high school to college. So we've tried to make that transition into college, you know, at this particular point. And so we're pretty happy with it. Anyway, that's that.

So, and we spent a fair amount of time on the first three executive skills in part because we said that those things were really important. And I'm not going to try and blow through these really quickly, but we're going to run out time. I think there's not much question about that. So I will go -- and I don't want to discourage people at all from asking questions. If you get questions, ask them, you know, by all means. But Peg's going to be my time-keeper because that's what she does this afternoon for this kind of stuff. And she's very good at it. And so we'll go through this and we'll try to hit the highlights of what this kind of stuff is about as we go along. Before we start, any questions at all? Okay. All right.

So flexibility. You know, we talked about it in terms of environmental modifications. Limit the flexibility demand. So how do you do that? First of all, you reduce the novelty of the task. And there's a -- do you remember what the rule is? Is it 90%? When you're introducing new tasks to kids that are struggling for tasks, the recommendation in the literature is that the task should be 90% known and 10% unknown, which is pretty much the principle that we followed working with our kids who are really struggling around these kinds of things. Which means that the 90% known allows them to build up some level of behavioral momentum in getting through the task. And you're not introducing a lot of new material. It probably turns out to be particularly important for these kids.

Provide a template. We talked about the issue of templates before. Put in place a default strategy. You've always got to have a default strategy because these kids got to have something that they can do that's virtually failsafe. That might be a place to go, that might be a person to go to, which is that's really what you want, you know, in case they've got to rescue themselves. If it's going to be a person to go to, make sure that you've got a list of people long enough so that they don't run out of people. Because we run into a situation

where, you know, you've got a couple of people absent. You know, you've got a case manager, you've got a teacher, a paraprofessional. They work their way down the food chain and somebody's not available, they're going to freak out. So, and in the schools that I work in, at least while we're running these kinds of programs, we had a list of people who're going to respond. Almost everybody's carrying walkie-talkies in the schools so that they know pretty quickly. And we try to introduce the kids to the people that they might need to call in an emergency. Turn open-ended tasks into closed-ended tasks. Do you want to talk about open-ended tasks?

DR. PEG DAWSON: Yeah, yeah. This was a real eye-opener, at least as I started working with this population of kids, that inflexible kids and kids with problems with emotional control, if you look at, in Dick's language, the antecedent, you know, what triggers the meltdown or the blow up? Very often it's because you've asked them to do an open-ended task. So an open-ended task is one -- and we narrow the four criteria there. You only need one of those to be present for a task to be open-ended.

The quintessential, most demanding open-ended task you can imagine is asking a kid to do a creative writing assignment because it has all four of those. And so one of our suggestions is turn a closed-ended task into -- I mean an open-ended task into a closed-ended task. One just quick example of that would be typical spelling assignment, take your words and come up with a sentence for each word. That's an open-ended task because there's an infinite number of sentences. So to turn that into a closed-ended task, you or someone working with the kid creates sentences with all those spelling words and pull the spelling words out of the sentences, put them in the word bank at the top of the page, and then the kid only has to choose what the right word goes, what word goes in. And then there's one right answer. Or have them write the word five times if you're goal is to get them to spell. But that's just one example. But that whole notion of turning an open-ended task into a closed-ended one is that's the environmental modification for kids who are inflexible.

DR. RICHARD GUARE: When we're talking about writing, the critical issue there is that kids, you know, in an academic environment, they're going to have to do a lot of writing. Woman named Bonnie Singer who's from Lexington, Mass., I believe, and a guy named Tony Bashir who's a speech language pathologist up there, they've gotten a lot of work from their perspective, and we accept this, that they say that the most demanding task on executive skills is an open-ended writing task. They've done a lot of writing about this. If you google Bonnie Singer, S-I-N-G-E-R, you can get to their website. They've got a lot of good intervention kind of stuff about just looking at strategies to help kids write and also strategies to help kids make these tasks less open-ended. But when we're talking about academics, one of the ongoing and most significant problems that we run into in terms of both academic production, but also in terms of behavioral production, is tasks that people assume that kids can do, when in fact they can't do them because the tasks are open-ended. These kids are, again, they're -- and around issues of content generation or organization of information, they struggle mightily.

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And there are times when you'll have to make significant modifications in the task. If a kid's not producing, then assume that that's really what part of the issue is. Okay? Make the task less complex.

I put up here, too, I wanted to look at this. Except as we get this up on a slide, but in terms of you want to come up with an intervention strategy. So a kid keeps bumping up against a task, that's my little drawing over here, but so a kid keeps bumping up against the task, they stop there. They're not performing on the task at all. Complete task avoidance. In a lot of cases, we conceptualize it this way, that the task, the kid looks at the task and the task looks overwhelming. Can't see past the task to get the incentive. What do you do? You change the relationship of the task to the incentive so you reduce the level of difficulty of the task significantly. And part of the reason why you do that is because if you start them here and you make this the thing that the kid's got to pass through to get to the incentive, and you make it a relatively easy demand, and you only present initially the task at that same level of demand, then over time the kid will habituate to that level of the task and you can add to the difficulty level of the task. The only thing that you've got to be careful of, you have to make the addition very slowly. If you go from this to this because you think they're past the problem, you're going to run into the problem again.

So over and over again, when we're dealing with task avoidance, one of the first things we think about in terms of task modifications is make the task easier. That can get you into some issues, again, with teachers and stuff like that, but if you're not getting anything in terms of performance at all, this will give you some degree of momentum, give the kid some sense about success. I just went through this, we're in the middle of going through this with a kid right now who's in the second grade. Can't do any math, refuses to do any math. And so we finally backed it down to a level where he's successful. For the first time in months, we're not getting any real behavioral issues during the math time.

Make the steps more explicit. Why? Because these kids don't want to take a lot of chances, they don't want to make a lot of inferences. And so the place where this tends to show up is rubrics. I mean, I don't know to what extent you have an opportunity to see the rubrics the kids get, but in a lot of cases if I can't follow the steps of a rubric, I think that the rubric is probably too difficult for the kid. But these kids need it spelled out chapter and verse, so you want step after step after step after -- nothing left to the imagination at all.

Increase support. Think aloud. So think aloud is what we were talking about before. Think aloud are these kinds of like what would you do in this particular situation? Tell me what you could do. And if the kid's thinking aloud, then you can make corrections as the kid goes along the way if there are steps in the process that they are missing. Walk them through the task. We walk all of our kids through the tasks, again, to make sure that we're not making assumptions that the kid can't meet.

Give plans or rules for managing situations. And so in this situation, what are you going to do? What can you do? I don't know what I can do. Let's talk about it, let's come up with some choices that you can take. So create a set of acceptable choices, let the kid pick something out. Again, that's the kind of stuff that you're rehearsing after a while. It's all in the service of giving kids some sort of script or plan that they can follow that they don't have to come up with it on their own, because spontaneity is not the strong suit for these kids.

Change tolerance by gradual exposure. Introduce change, lightning bolt, preferred to non-preferred. That refers to if you're using picture exchange communication with kids, they use a lightning bolt as a symbol for change in schedule during the day, the idea being that lightning occurs unpredictably. And so when kids see that visual symbol -- so across the board, if we're using visual symbols with kids, we tend to use something like that.

But the other nice thing in terms of behavioral procedure, Peg's people recommend that when you're going to -- if you're going to introduce change to kids who are inflexible, when you initially introduce change, always make the change in the schedule to a more preferred activity. Oh, change in schedule, we got to go get ice cream. Which I think is -- I love that idea, you know, because you get kids acclimated to the idea of making change and you really get a lot of arguments about those kinds of things. You know, clearly you're going to fade and you're going to change this over time, but it really does get kids used to the idea that you've got to shift. But you're shifting at least in the direction that you're more likely to go in.

And then finally, introduce new situations. For our kids with -- you know, for the kids that we run into who are inflexible, the kids with non-verbal learning disabilities, the kids with traumatic brain injuries or acquired brain injuries that happen to have this as a characteristic, for the kids with Asperger's disorder, our notion is that the way that these kids get acclimated to situations is by exposing them to those situations. I mean, you could meet kids that we work with now and they look spontaneous. They're not spontaneous. They just happen to look that way in a particular situation because they've been in the situation long enough to learn how to get through the situation. So that's really what you're doing. You're looking to give kids this kind of exposure over and over and over again, where they get used to the change patterns.

This issue about your transition kid in class before? Part of the issue there is that the most unpredictable situations for kids are somewhat open-ended social situations. If you've got new players in those kinds of situations, you don't know what they're going to do. And so just the presence of a new player doesn't work for you. It's easy for me to identify with this. I've got an extroverted wife. I am by nature something of an introvert. I can come into an audience and do this, I got a role, I got a plan, it's not a problem. I don't go to parties with my wife if I don't know the people. If I do, if I'm forced to go to a party, I'm either the bartender or I'm drunk because I don't know how to interact, I honestly don't, and I feel uncomfortable having to interact

with people.

Whereas around a relatively small group of friends that we have and I see on a regular basis, I'm happy to be there, I'm comfortable in that kind of situation. So when these kids run into problems in those other kinds of situations, I get it. It makes perfect sense to me. It takes me a long time to get used to people. And in the meantime, if I don't have a chance to get used to them, I don't want to be around them, or I got to have a script, I got to do something that's socially acceptable, or I got to be disinhibited. Which, by the way, doesn't endear you to those people. They don't invite you back anyway, so I don't think my wife's recognized that as a strategy for escape at this point.

I'm going to come back to this. This thing about making steps more explicit, this is part of a social skills -- we wrote a social skills curriculum, a peer-based, group social skills interaction curriculum for kids. And this is just an example of the fact that you can make just about any set of behaviors specific and explicit. So here, face the speaker, pay attention and show interest, keep your body still, do not interrupt. That's how we defined good listening. And we had kids go through these different exercises. This is all peer-coached. Their peers judge how they're doing, they all get a chance to do it, we had coaches that we trained, and players. Our players were the kids with weaker social skills.

I'm going to come back to this in a little while. This we did with a very high-functioning group of kids. Some of our kids, we had kids in the group that were gifted but with lousy social skills. We thought that they were going to find the visuals objectionable. They loved the visuals, they were the coolest things in the world, so we left the visuals in there. But when we talk about coaching later on, I'll come back to this. That's my first cue that we're not going fast enough.

DR. PEG DAWSON: You've spent 15 minutes on one executive skill and we've got like seven to go.

DR. RICHARD GUARE: Well, that's it, we're done. So reduce distractions to sustain attention, cue to attend, modify task demand, build in a variety of choice, choose the best time of the day, teach -- so Peg's going to teach us, show you a self-monitoring and a peer-coaching thing, and have the child identify something to look forward to.

The idea here is either prompt, find some prompt for the kid during the task, which again, that's part of the reason why we're building this app is as a prompt device. But there's something called Interval Minder on smart phones now, where at random intervals you can get a cue. If the kid understands that that particular cue is a prompt to come back on task, then that can work effectively for you. We know that because we were part of a research study in our graduate school where they did this in classrooms. It proved to be a very effective intervention for on task behavior. All right, was that quick enough?

DR. PEG DAWSON: Yeah, that was good.

DR. RICHARD GUARE: We're not doing that one? I like this too because I can decide what we're going to do and not do. Task initiation. Again, the way that we manage this typically is we provide cues and prompts. It's okay, but it's labor-intensive. So you got to find something else that's going to work as a prompt for the kid to start a particular task. And it initially can be you, but you got to be able to fade that out, whether it's -- here's another place where we think peers are effective intervention. Fade it to the peers. Why? Because eventually, in the naturally occurring environment, just the peers beginning to initiate a task will work as a prompt for a kid to do that in a particular situation. So fade it to -- if the worst thing that's going to happen is you fade this to using the peers in the situation as people to prompt a task, it's a good way to go.

Walk through the first step, build some sort of behavioral momentum. That's that notion about 90%, 10%. But getting a kid on a task, some of these kids at least, once you get them started, they're okay as long as the task isn't too difficult for them to do. Establish a set time to do non-preferred tasks. Do you know what that means? I don't honestly know what that means.

DR. PEG DAWSON: What that means is it's easier to do a non-preferred task like homework if you always do it at the same time every day so that the actual -- the schedule sort of drives the task and reduces the fights associated with it. I think that's what we meant by that.

DR. RICHARD GUARE: Yeah. Some of these we did and then I never thought back to what the intervention was supposed to refer to to begin with. Help the child make a written plan for doing the task. That's great if you can get kids to do this. And walking kids through this process, we're going to talk about this coaching later on, where this is really what the process is, except that the written plan is something that's done by the coach. But it's still a very effective procedure. And then finally, have the child select some sort of cueing system. How would you like to be reminded of this particular thing?

AUDIENCE MEMBER: Do you have any examples of cueing systems

DR. RICHARD GUARE: Yeah, there are -- well, as I say, there's an audiotape system that's available from the ADD WareHouse. It's called a beep tape or a tone tape or something like that. Random intervals is a critical issue. You know, things like Watchminder, you can only set those at fixed intervals. Fixed interval schedules are not good reminders because what happens is attention develops in a scalloped pattern. When you're approaching the beep, attention is good. As soon as the beep passes, attention drops off significantly because the brain internally recognizes when the next prompt is coming. That's why you've got to have random reminders. So that's probably the best example of one of those. Hopefully we'll have an app in a couple of months that will take care of this. We'll let you know how it goes.

Planning prioritization, provide a plan or a template. That's initially what we do with kids all of the

time. We provide the plan or the template for the kid, or provide planning tools: calendar, agenda book. Inspiration is a piece of software. Anything at all.

The kids that we work with, including, you know, my own kids, they like using their phones. I feel like the phone is a good planning tool in terms of prompting. There's a lot of reminder systems that can build in at this point. Kids are so acclimated to technology that, again, I think if you can get them used to that -- parents worry about that. You know, as far as we're concerned, just go after the technology. I don't know if they're still doing it. Spalding Rebab used to actually run a program for teaching kids and adults use of various electronic devices as working memory and prompt devices and so forth.

Walk kids through the planning process and gradually prompt kids to do more of the planning themselves. You'll hear more about that in the coaching process when we talk about coaching again. Ask kids -- ask questions to get kids to prioritize. What do you need to do? What should you do first? This is an important thing to do.

What you'll find out in a lot of cases, if you're doing this in the context of an academic task or even a goal, the kids are clueless about what to do. And so if you think, for example, a rubric makes sense or the kid -- you say to yourself, well, the kid knows how to do the task, ask them to walk you through a specific plan for doing it. If they can't, they don't know. And even if they do know, you need to make sure that they understand all of the steps in that particular process.

Organization. Peg's going to show you an organizational scheme for academic stuff, so I won't spend any time on that. Time management, make schedules and time limits explicit. I talked to you about it before. We live and die by schedules in the world that I work in. We do that because school is a time-limited phenomenon. Tasks have to get done within a particular time. But we want kids to develop an awareness of time.

Now not all of our kids can tell time, but all of our kids can tell time by activity. So a lot of kids that I work with on the autism spectrum, they've got no clue about what time's about, but they always know that gym comes before lunch, and before gym this particular thing and this particular thing. And they've got their schedules down. And so if that's the way that you need to teach time appreciation and time management, that's okay.

But absolutely they have to -- times have to be explicit. Anytime a kid can use timers or a watch, have them use them. Timers have a way of initiating and ending behaviors that pull adults out of the situation, and that's what you want. You know, when a timer goes off and one of my kids understands that break is over, we're not fighting about that. That's it. He understands time well enough. Break is over. There's something about the timer that he respects more than he respects my word about it.

Give kids a schedule to follow and prompt each step of the way. So this is picture schedules, clocks, alarms, smart phone apps, time timers. In terms of teaching strategies, again, for the kids who can do this, the first thing you got to do is teach them how to tell time and to mark time. So I mean, if your kids are never going to get there, then you're going to have to use some sort of an activity marker for time.

Teach kids to follow schedules. We use schedules. It doesn't make any difference how our kids -- where they're functioning at. We're using schedules all of the time. I notice look at your [inaudible] over the last couple weeks. They use a lot of schedule stuff too. We think it's a great way to go because, again, it's a great way to hand off to a kid what you will otherwise spend all of your time prompting them to do.

Teach how to estimate how long it takes to do something. This is particularly important. And again, you'll see it come up in terms of coaching, but kids need to have an appreciation of if you're going to plan time, you've got to know how long it's going to take you to do some particular thing. Also helps in terms of sustaining attention to a task if kids set time limits for themselves to begin with.

Goal-directed persistence. Establish goals for kids. Well, initially you do that, although -- in the coaching manual, my wife helped me write one of the chapters. And what she did was she took all of her kids, she took her first grade kids through a planning dialogue. And she used swimming as an example.

So she sat around with her kids and said, you know how you guys make goals up all of the time? Like when you say something like, I want to learn how to swim, or I want to learn how to ride a bike, that's a goal. And then she walked them through the entire planning process. What do you need to do first? Well, I need to -- I need to go to the pool. Okay, you're at the pool and you've got your clothes on. And are you going to learn to swim that way? No, no, I need a bathing suit. I have to leave the pool and go get a bathing suit.

She walked them through all of -- and the kids think this is a fun kind of exercise. But it gives them a real appreciation in a task analytic kind of way about what this is all about. So that dialogue was written out for young kids as a way to introduce them to goal planning. We think that it's great to introduce kids to goal planning at any particular time. What do you want to happen in this particular situation? Let's talk about how you're going to accomplish it.

Reward kids for persistence, sticking with difficult tasks. That's because of this -- this represents effortfulness, okay? And so in order to get kids to engage in effortful tasks, you're probably going to have to reward them for doing that. It's okay to do that. We have nothing -- we have no argument whatsoever about using extrinsic rewards.

Make sure the goal or benchmark is in sight. Again, it has to be something that looks achievable to the kid in the relatively short run. If you're talking about longer term goals, you've got to have short term goals. And you're working with the kid all of the time for them to understand they got there.

Point out to kids how they already set goals, but may not know what they are. That's the example that we put in the book that my wife wrote. Define goals as something that people want to get better at. Again, that's well detailed in the coaching book. Ask kids to set small, achievable goals, or a goal for something they want to do outside of school, or to set class goals. And we wrote a chapter in the coaching book about this, how you could make this a kind of classwide process.

Again, starting with very young kids. If you look at the peer coaching literature and the peer tutoring literature, it's evident that this is a powerfully effective intervention both for behavior and for academic tasks that gets adults out of the mix fairly quickly, teaches kids much better self-monitoring kinds of procedures. So we haven't talked about coaching yet, but one of our objectives would be for the kids that you're working with, come at this from the perspective of being a coach for the kid, where you're using goal setting and all of those kinds of things to begin with to help the kid work through.

Then finally, meta-cognition. Evaluate performance for the student. Well, part of the reason -- how do kids initially learn to evaluate their own performance? They hear it from other people. You know, how'd you do on that? Well, let's take a look at it. You did a nice job on this one. This one you probably need to work on a little bit more. Let's talk about how you could fix this kind of stuff. That's basically you being the surrogate frontal lobe for teaching a kid a meta-cognitive strategy. You want to do a lot of that.

Again, you got to be careful about how you deliver it. You know, if the kid starts to anticipate you with failure and feedback, they're not going to want to have any conversations with you. So you've got to titrate the kind of monitoring and the performance feedback that you're giving to make sure that it's more successful than not. And if it's not, then you've got to step back and say, maybe what we're asking the kid is too difficult to begin with. So that's how you work back the task modification in those cases.

If you're always coming to the kid and the kid's always failing at the task, the issue isn't the kid. The issue isn't performance modification -- or isn't performance monitoring. It's too difficult to begin with. You've got to get to a place where kids are initially successful.

Provide sample to match or error monitoring checklists. So like what are things that we do if kids aren't meeting a particular criteria that we would like them to meet? We have them generate a piece of -- a sample for us about a piece of work. Like handwriting is an easy one to do. Like for us, the OTs do a lot of the handwriting programs.

But if we get kids that are really, incredibly sloppy, like illegible writers, and we want them to work on something, we ask the OTs to collect a sample of writing that's kind of midway between their worst example and their best example, the kid's worst example and best example. And then tape it to the kid's desk and say, when you write this particular thing, it needs at least to look like this or you're going to get it back because you

got to do it over again. But you can do all kinds of sample to match stuff around these. That's how we taught a lot of the social skills, but again with peers making the judgment about coaching.

Embed -- give people some examples of embedding questions.

DR. PEG DAWSON: Yeah, I think this notion of embedding questions means anytime you're using any kind of instructional or cognitive task, you're not doing all the thinking for the kids. You're asking them to think about it. So if the issue is around doing homework and kids are chronically not doing homework, you might say to them, let's talk about what gets in the way of doing homework. What are some obstacles? What could you do to overcome that? Could we make a plan for doing homework so we decide what time it's going to be done?

In fact, in *Smart but Scattered,* we have a daily homework planner. The feedback we've gotten from people is that's really helpful. So kids can do that before they even leave for school -- for home at the end of the day. They sit down and make a plan. What are they going to do, when are they going to do it kind of thing.

But you can do that on anything. How would you plan on studying for this test? Or Dick gave you a gazillion ones this morning in terms of, so when you're out on the playground, what are we working on? That's another way of embedding a meta-cognitive question into instruction.

DR. RICHARD GUARE: Any kind of self-monitoring is a meta-cognitive strategy. So we have kids all of the time, behavior's going to be specific, but tell me how you did in the situation. When you come in, we're going to talk about how you did in the situation. How do you think you did?

Concrete behaviors. That's why we use the visuals in a lot of cases. How did you do with listening? I did good on listening. Did you face the speaker? No, I didn't do quite so good at that. I need to work on those kinds of things. I mean, we've found that a very effective, powerful way of being able to teach what seemed like fairly abstract skills to kids.

DR. PEG DAWSON: Okay, I think this is where I take over. Okay, we're going to switch gears. And I'm going to talk -- actually, I don't need this. I'm going to talk about two or three different teaching strategies, and then Dick is going to talk about one. Because I think we all recognize that if all we're doing is modifying the environment, kids will never become independent. And so we've got to move from modifying the environment to actually having them learn the skill.

And I don't want to spend a lot of time on teaching room cleaning except to point out that, first of all, it's a common task that we expect kids to be able to learn. And they don't always do it independently. And so we walk them through the process. And I would just say -- and by walking them through the process, we're basically becoming their external frontal lobes. Each one of these statements actually is tagged to a different executive skill. So you can take this same process and apply it to anything else we're trying to get kids through.

But at each -- you know, let's start now at task initiation. Put your dirty clothes in the laundry. Put your

books on the bookshelf. There's the plan or the organizational scheme. There's some motivating questions. There were some we threw in just because they're things parents say, like, aren't you happy you got all your work for the day done kind of thing.

But the next two steps, and this is the piece I really want to focus on, is so often what I see in my work is that parents or teachers continue to prompt kids to do each step of the way and they never step back from that prompt, and then suddenly expect kids to do it on their own. So these two -- the step two and step three here, the two key questions are, instead of saying put your dirty clothes in the laundry, we say look at your list. And then we go take it one step further in terms of making it a little more vague kind of prompt. We say, so what do you need to do now?

And it's those two questions which parents in particular don't even think to include. But what that does is it's the transfer from our working memory to the kids that we're working with. So when we say, look at your list, that means they're having to do a little more work. It's not just a question of listening to what we tell them to do and them doing it. They actually have to say, okay, where's my list? Where was I on the list? Where am I now? What's next? And what do you need to do now? The answer to that question may vary depending on where they are in the internalization process. So it may be -- the answer may be I need to look up my list. Or the answer may be I need to put my dirty clothes in the laundry because they've internalized the list well enough. And so the piece -- turning it into a checklist and then prompting them to look at their list are key sort of transition phases in terms of teaching skills.

Teaching kids how to pay attention, this is actually -- this one and the next one I'm going to show you are either whole class or whole school routines, but they can be individualized for those of you who work with individual kids. And this is built around what Dick was talking about earlier, a self-monitoring beep tape or you can use Interval Minder off the -- which is an iPhone app.

But basically, I mean, you set the stage in terms of talking with the child about why it's important to pay attention. And then you may elicit from them some input in terms of what is paying attention, what does it look like. And you may even want to talk about so what's acceptable behavior while paying attention. And I just include this reference to a study done on doodling, which shows that actually kids who doodle while they're listening to a lecture may be actually taking in more information than if they're just listening to the lecture. People always nod to that, so clearly -- I mean, I keep wanting -- because I still see kids who come in to say, my teacher won't let me doodle when I'm listening to a lecture. And I just keep wanting to pull out my grad school notebooks. See all the fancy design on the left-hand margin?

And then -- so then either with a class or with a kid, you introduce this tape. And I'll just give you a quick example of how I used it with an individual child. I saw a second grader many years ago, huge attention

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problems. And I went into his classroom and we did a baseline before we even introduced the intervention, where I was doing a recording. So every 30 seconds, was he on-task or off-task? And at the end of my observation, I'd tally up the percentage of on-task, and the baseline he was on-task 10% of the time. So that's pretty minimal. That's a pretty distracted kid.

The second grade teacher decided to use the tape not just with Jonathan, but with the entire class. And she chose one time of day, which was the math worksheet after lunch, or after recess. So that's when they listened to the tape. And so she -- I went in after it'd been in place for about two weeks just to see what had happened. So I got there at the beginning and the teacher was handing out the math work and actually handing out the checklist, where kids were going to check off whether or not they were paying attention.

And then she turned on the tape. And I saw Jonathan, and he was right there glued to his math paper and he was writing down his answers very furiously. And the first tone sounded and he jumped over and he checked off yes on the checklist, which looks like this. Checked off yes and jumped back to his worksheet to make sure he was on-task again when the next tone sounded because he didn't know when it was going to come. He was on-task 95% of the time using that procedure.

And you can gradually fade it. And especially with something like Interval Minder, you can gradually increase the length of time between the electronic tones, which that makes it even easier. I was working off my piano at that point because this was many years ago, where I was making a tape tapping keys on the piano.

And then you can gradually take away the checklist, the yes/no checklist, and just say whenever the tone sounds, I want you to think, was I paying attention or not? A lot of the kids I see, and my guess is a lot of the kids you see are not even aware that they've stopped paying attention. So this at least gets them aware of when they are and are not paying attention. And if you want, you can add a classical or introduce a reinforcer. If Jonathan's any example, the whole process was so motivating to him.

And I've seen studies where they've used the same process in group homes for behavioral disorder kids during homework. You know, they turn the tape on during homework and everybody -- they get rewarded for being on-task as well as for getting through their homework.

DR. RICHARD GUARE: Yeah, a couple things to keep in mind about that. Number one, for some kids you're going to have to have a built in incentive, you know, around it. And the other thing is it's not whether the kid appears to be on-task or not. It's production. But ultimately, you've got to have some sort of production -- you've got to have data. And your data is going to come in the form of did the kid do the work? Because all of us are pretty good at looking like we're paying attention when, in fact, we're not paying attention. So that's your criteria.

It's also not even whether the kid says he's paying attention or not. Because interestingly enough, in

the University of Virginia study that they did, even when kids lie about whether they were on-task or not, their on-task behavior got better over time. Pretty intriguing kind of finding. And we're in classes to look at the on-task behavior piece.

DR. PEG DAWSON: Okay, the next teaching strategy is a school-wide strategy which I think could be modified for an individual. And you have the name of the assistant principal who gave me his PowerPoint. He shared it with me at a workshop he did several months ago. And this is a process they put in place through the entire middle school that he worked with, which is in Salina, Kansas. But again, I think you can take the elements of it, the notebook and how kids manage the homework and the agenda book, and actually tailor it to an individual kid. A parent could do it as well as, you know, someone in school.

But I just want to share with you what a whole school intervention would look like for teaching organizational skills. It starts in the fall, where they have a training session where they actually train kids to understand how the organizational system works. And it all is tied to very basic goals. So they learn -- I mean, basically the goal of the organizational system is to complete the work and to hand it in, turn it in on time.

And they built it all around a binder. And there are sort of five rules of the binder. First of all, divide subjects with tabs. So no thing about a separate notebook for each subject. It's all in one three-ring binder. Trash assignments that you don't need anymore so that you're not getting this gigantic mess full of paperwork. Put due dates on all the assignments. Have a pocket for incomplete homework and a pocket for completed homework. And keep it with you at all times.

So this is the binder they use. You've seen those, right, with the pockets in the front and the back? So as soon as they get a homework assignment, they put it in the incomplete pocket. And as soon as they finish it, they move it over to the complete pocket. And there are the tabs for each subject. They also have kids have a plastic zippered container for erasers, pencils, calculators, anything that they need that can go in that pouch. Obviously it's got loose leaf paper.

And this is part of the PowerPoint they used to teach the system to the kids, actually. This particular school has an agenda book or an assignment book that you see also has three holes, so it goes right in the binder. And actually, they have a rule that the assignment book is filled in on Mondays, so that requires some organization on the part of the teachers because they have to know what the assignments are for the entire week on Mondays.

Another novel piece that I really like, which anybody could implement, is as soon as they get the assignment, they write down the due date. So they always know -- and you put it right there at the top of the page. You always know when it's due. And you order them in that pocket by due date, so the one that is due first is the one that hits you in the face when you open up the notebook. And then it builds down from there.

And then, as I say, as soon as it's done, you put it in the back pocket. And then you hand it in on time.

And one of the processes they're teaching kids is that if you're an organized student, then your grades are within your control. Because kids tend to think that, using Stephen Covey's sort of organizing scheme, that they think that grades are outside of their control. But if you're organized, then grades go from out of your control to in your control.

The other piece of this, which again, you couldn't individualize, but it's really nice to see it when a school does it, twice a week there's a notebook check. So on Tuesdays and Wednesdays, teachers are checking those notebooks to make sure the five rules are followed. And on weekends, it's the kid and his parents' responsibility to do that. So it builds in a home component. Obviously some homes are going to be better at doing that than others, but at least that's communicated to families as well that that organizational scheme has to last.

Obviously with kids who are more impaired, you can't do it just twice a week. It probably needs to be a daily system. But they earn points for following all five elements of the notebook system. And that's part of the notebook check is to see how many points they've earned.

So basically in terms of the seven steps to teaching executive skills is basically, you know, start with identifying the problem behavior, whether it's a messy room or child not paying attention or a messy notebook. Set a goal. The child cleans the room independently, the child pays attention 90% of the time, the child keeps his notebook organized four days out of five, whatever it is. Outline the steps needed to follow, in order to meet the goal.

And actually, the whole developing and teaching strategy, it's these next two that are the critical pieces. What are the steps and can you turn that step -- those steps into a checklist? And here's -- this is a bedroom cleaning checklist, and we have multiple examples. How many of you routinely use checklists as part of your work with kids? Okay. Those of you who don't, I really encourage you to move towards that. Lately, as I've been talking about checklists, I have found some great examples.

I've got first grade teachers who say, oh yeah, I'm teaching kids to capitalize and to put a period at the end of every sentence. So before they hand in any writing assignment, they do a proofreading checklist. And these teachers will say it's amazing how much that solves that problem. They learn to capitalize and end with a period much faster when it's being paired with a checklist.

I had a math teacher in a workshop I did last summer who talked about how every day on the same space on the blackboard, he put the five things that kids needed to bring to class. You know, math book, math homework, pencil, workbook. And number five was PMA. And I said to him, what's PMA? He said positive math attitude. But what he told me was that one day, inadvertently, because he's always using more blackboard

space than he has, so he has to erase the checklist and put it back up every day. And one day, he inadvertently left off PMA, number five. And he said all day long, kids would say, Mr. Jones, you forgot number five. And that made him realize how much kids were actually paying attention to it. I mean, he was never even necessarily calling their attention to the fact that it was a checklist. But it was there and they knew when something was changed, and they picked up on it.

So I think there are lots of examples. One other thing before I move on, and actually that Dick -- well, I'll finish this piece and let Dick talk about behavioral accesses. Very often I talk about the book *The Checklist Manifesto*, if you're familiar with that. It was written by a physician several years ago. Was hired by the World Health Organization, same as Atul Gawande. He writes for the popular press.

He was hired by the World Health Organization to come up with a strategy for reducing post-surgery complications. You know, like post-surgery infection or, you know, those kinds of things. And he did. I mean, he came up with a great checklist, but where did he get the idea? From airline pilots. You know, there's no pilot who takes off without going through a physical checklist.

And I was presenting this in Minnesota a few months ago, and this woman raised her hand and she said, my husband is an airline pilot. And you know what they tell him? Do not memorize the checklist. Which -- I mean, I had already decided that the expectation that people internalize checklists is probably unrealistic. But it makes perfect sense. You would not want an airline pilot memorizing a checklist. Why? What if they forgot something that was on the checklist and it happened to be close the cargo door or something that caused the plane to crash?

So I just think there's a lot of -- that's a working memory aid for sure, but it's also a planning aid, an organizational aid. It just gets at so many different executive skills. But of course you can't just hand the checklist to the kid and ask them to run with it, because they're not going to do that. You've got to -- you've got to prompt them to perform each step, follow them through to do that. What's on your list? What are you doing next? That kind of thing. And then gradually fade it if necessary, or just get kids to use it as sort of -- you know, life in the 20th century is complex. It's probably a lifelong modification that I think we may need to think about. Okay Dick, it's back to you.

DR. RICHARD GUARE: Questions before we leave that? Okay. So this is about -- when we ask people a question -- and I'm sure you're going to get behavioral issues. You know, this is not meant to take in all behavioral issues, just to give you one example of what we do. I spent probably half my life writing behavior support plans for kids. And so this is just one kind we've tried to flesh out a little bit.

So this is actually a kid of mine. He's actually -- he's in the fifth grade now. But when he was in third grade, when given an assignment requiring some sort of production, math or writing, did one or more of the

following 50% of the time. Complains loudly or refuses to do the task. I don't know how to do this, or I'm not doing this stupid paper. Push paper off the desk or crumples it. Roams around the room and doesn't respond to teacher directions. Actually got to a point where he would roam around the room, he'd hide under a table or a desk, and he would make noises. Then somebody would have to come and fetch him out of the classroom, and so that's what we would end up doing.

So for this kid, the behavior happened whether or not the task was within his independent ability level, which was interesting because what it meant was that he actually -- he generalized the response kind of across writing and math tasks. So we had to change -- we had to make some changes in the tasks. But the more difficult the task, the more disruptive the behavior.

Interventions were designed after obtaining input from the students. We sat and talked with them about this a little bit, but we said the problem has got to get taken care of. Sometimes we will use social stories. People know that social stories work. How many of you do know what social stories are? A fair number. This is Carol Gray's work. If you don't know if, if you google Carol Gray, you'll come to a website. She's got a great, free download, or there used to be a free download about how you go about writing a social story. There were rules to writing social stories. It's kind of important to follow them.

A social story is a behavioral prescription. I'm not -- you know, we don't use a lot of them. We used it with this particular kid because he liked having his person embedded in the story. In a lot of cases, we're just doing a set of behavioral expectations. So this is describing how he feels and what his options for helping himself.

In my classroom, our teacher, Mrs. Smith, gives us math and writing papers to do. Sometimes when I get one of these papers, I get upset, so that's part of the story. This is what my reaction is. It's important for me to do my schoolwork so I can learn. There's always a moral to the social story. When Mrs. Smith gives me a paper to do, if I start to get upset, I can look at my hard times board. So this is a behavioral intervention piece of this particular story. Picking one of my choices will help me to feel better and help me to get my work done. If I forget to look at the board, Mrs. Smith will help me remember.

Again, a hard times visual board with his options listed. And this is what a hard times board looks like, and we've got variations of these that we use with younger kids. They're kind of a gimmicky thing, but some kids like to have them. So what I like about them is that it always puts the trigger at the top. So the trigger is, you know, what makes me mad? When I get math or a writing paper to do. Can't dos. We don't always put the can't dos in the hard times board because you don't want to precipitate the behavior.

For this particular kid, we put them in there because we want him to be aware of the stuff that he was going to get yanked out of class for. I can't complain in a loud voice. I can't crumble or tear up my paper. I can't

not listen to my teacher. While I'm having a hard time, I can ask for help, take a break for two minutes and look at a book, or draw. So when kids are engaged in task-avoidant behaviors, the two automatic strategies we teach them most of the time are an acceptable way to avoid the task and some way to help them get themselves through the task. But we always give kids the option of bailing on the task as long as they do it in an acceptable way.

So in terms of the other interventions that we did, shorter tasks with check-in breaks at the end of each section with a teacher or classroom paraprofessional. That was -- so we modified the tasks. Actually, what we ended up doing is pulling this kid out of the standard math curriculum and putting him in a different math -- the math curriculum because it wasn't working at all for us. So sometimes we will go through modifications at that particular level.

After work or directions are given, an adult checks in with him immediately to ask him if he understands or needs help. So we do that all of the time because sometimes he might not react, but he might just sit there and do nothing.

And then finally, his agreement that if he begins to get upset and does not remember to use his hard times board, he will accept a cue from an adult to make a choice for me. This third part we put in the plan, but kids will accept this when they're calm. They don't want to hear about the hard times board when they're upset. You could just as well get the hard times board thrown at you if that were the case. But we put it in, again, because we want to make the adults feel -- the kids willing to accept the cue.

A rule that if his behavior disrupts class, he'll take an out of class break for at least two minutes, and whatever time after that until he is able to resume his in-class plan. So and as I say, so this is -- some of you might get him out of class or he might have to leave class. He's out until basically -- he's out for a minimum of two minutes. And beyond that, he's out just -- he's out until he calms down and can come back into class.

His agreement that uncompleted work will be finished during free time or, if needed, at the end of school. Well, he didn't agree to stay after school, but his father agreed that we could keep him after school if we wanted to, so that's part of the equation. This plan in a modified form is still in place with this kid, but now he gets -- and he can take out of class breaks, and so he still does that with his case manager. It's interesting, it's still around math that he struggles because his math struggles have been significant. But he can take an acceptable break out of class. So we don't have a lot of disruptive breaks, but if he has a disruptive break, he's still sent out.

If he's sent out for more than -- actually we just changed this. Before, if he was sent out for more than two breaks a day, he had to stay after school and make up his work. We just reduced it to one break because he was saying to people, well, it's only my second break. And we realized that just wasn't going anywhere, so

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now he's down to one break.

Actually, this talks about an incentive system. We changed the incentive system for this kid, and essentially what we did is we set the incentive up so we were doing task, break, task, break. Now he's on a point-based system, where I think twice in the morning and twice in the afternoon, if there haven't been any behavioral disruptions and if he completes a certain percentage of his work, he can take an acceptable break, a good break is what it's called, and go out of the class with his time manager, go for a walk. He goes into the OT gym and they play games and stuff in there. Plays hide and seek in one of the rooms with his case manager.

Components of the plan were rehearsed with him in the classroom with the paraprofessional and the teacher roleplaying first, and then walking him through the procedure independently until he could demonstrate how it would work. So we do that most of the time at least for cognitively well-functioning kids, we walk them through the entire scenario of what's going to happen. And he and staff agreed on a starting time for the plan at the beginning of the day and returning from lunch. The plan was reviewed by his reading the social story, or we would have kids review what the behavioral expectations are. If this is going out to recess, this is the particular expectation.

Had a high school kid who was getting into it with other kids on the bus. Before he got on the bus, he reviewed the behavioral expectations. So it's basically some sort of, as I said, cognitive rehearsal all of the time prior to the time that the kid goes into the situation.

So in terms of helping kids to learn to manage behavioral excesses, help the child to identify what the triggers are for the problem behavior. Initially, that might be you that's doing that, but again it's to say when I go in this particular situation or when I see you in this situation, I notice this, you do this. It may be that the behavior of concern happens in a single situation, or may pop up in several different situations. So we will try to have a conversation with kids about this so that they start to develop some awareness of the behavior.

Determine if any of the triggers can be eliminated. Technically it's an environmental modification, but it's a good place to start on just seeing the problem behavior and working to reduce it. Make a list of possible things the child can do instead of the problem behavior. Those are the replacement behaviors. They'll vary depending on the nature of the trigger and the problem behavior. As I said, typically it's take a break.

If a kid chooses to take a break from a task, they can only take X number of breaks before they've got to come back and complete some part of the task. So they always have to complete some part of the avoided task that they've left.

Practice the replacement behaviors with roleplaying or simulations. Begin by using the procedure in minor situations. In the world where I live in, we don't do this because by the time somebody comes to us, it's not a minor situation. They want the problem solved. And I don't have an issue with that. We're going to

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practice the solution dealing with the behavior that the kid's manifesting.

Connect the use of the procedure to a reward for the best results. Use two levels of reward: a big reward for never getting to the point where a replacement behavior need to be used, and a small reward for successfully using one of the agreed upon replacement behaviors. So that's really what this is all about.

DR. PEG DAWSON: Want me to talk about it?

DR. RICHARD GUARE: Yeah. I guess what I would say to you, though, is in talking about incentives, I've got a couple of incentive systems that are designed for middle school kids that are fairly elaborate. They're point-based incentives that a special education coordinator that I work with, she could put an entire behavior support plan on one page and incorporate the data collection system for it. If you want it, send me an email. I will send them to you.

Both of these two different plans are based on both work completion criteria and in-class behavioral criteria. So you'll see what these plans look like. They've proven to be quite effective for us. In one case is an after-school component; in the other case there's not.

DR. PEG DAWSON: And I mean, you guys must use incentives all the time, right? And so hopefully we're not getting in arguments about intrinsic versus extrinsic reinforcement because that -- those are the kinds of arguments I get in with regular classroom teachers sometimes and parents sometimes.

But in fact, again, whenever possible I try to rely on simple incentives rather than the elaborate kind that Dick just described. And that may be less possible with some of your kids, but just to point out what a few of them are. That whole notion of giving the child something to look forward when the effortful task is done, that is such an energizer assuming it follows Dick's chart here, where the task doesn't overwhelm what their reward is. But you've probably -- I mean, I've certainly noticed it in my own behavior. You know, if I give myself the reward of finishing the psychological report and then I get to go for a walk, you know, somehow that looking forward to the walk helps me get through the psychological report.

But there's sort of two issues to this. And one is helping the child identify something to look forward, but also helping them to identify the strategy of having something to look forward to so that they're stuck with a large a task that they have to do, you might say to them, so what would help you get through this? And that's the prompt to think about what kind of reward. You know, can I break it down into small pieces?

My son with -- my older son had an attention disorder and he figured out somewhere in high school that he -- that the only way he could get through math, his math homework, was to do a little math homework and then play one level on a video game, and do a little math homework and then play another level on a video game.

When I was in Philadelphia a couple months ago, I did a workshop for parents on homework. And my

daughter-in-law is actually a doctoral student at the University of Rhode Island, was in the audience. And when I mentioned that as a way to get through homework, she said something to the woman sitting next to her. I said, okay Marissa, what'd you just say? And she said, your son still does that. He's now almost 33 and just finishing up a master's degree, but he still parcels it out. Does a little bit and then rewards himself. So obviously it's a lifelong strategy.

Alternate between preferred and non-preferred activities. The kids Dick works with, it's first work, then play. I did a workshop in Tucson last year where they imported a number of iPads to their autism program, and so their variation on this was first work, then iPad. First work, then iPad. And of course they only loaded educational games on the iPads, so even when the kids were playing with the iPads, it was a reward. I mean it was work.

Building in frequent short breaks. And again, with more severely impaired kids, sometimes those breaks come very frequently and last for far longer than people would necessarily want. But what's the alternative? They're burnt out and they don't get through any work.

And then using specific praise. And you know, there are rules to this. The rule of thumb, which we probably have as much research on this as any other behavioral intervention out there, is three positives for every corrective feedback. And the tricky part is actually pulling that off because -- I mean, I remember when my kids were young, I periodically had to retrain myself to be positive with them rather than focusing on them fighting with each other or not picking up their clothes or whatever. And even now, my husband will occasionally say to me, remember Peg, three positives for every corrective. And he's talking about how I talk to him. You do have to retrain yourself.

But obviously there are huge differences between what a smart kid you are and what's really effective praise, which is giving kids very specific feedback about what they're doing that you want them to do. When I work with kids, which is primarily an assessment process, I look for ways to reinforce them for whatever skill I've learned from their parents that they're not particularly good at. So I see a lot of kids where the mom will say to me, my kid folds at the first sign of an obstacle. You know, she breezes along fine as long as the task is easy, but as soon as it gets hard, she wants nothing to do with it.

And so I -- because the way testing works, you know, the tasks get gradually harder and harder. And so I find lots of ways to just reinforce them. Man, you stuck with that. I saw you getting frustrated, but you still -- you hung in there. I like the way you figured out the answer to that problem. You really made a good effort. All of those things, which is way better than reinforcing kids that are being smart because smart is something they don't have any control over. But how hard they work is something they do have control over.

So I guess that's the issue about incentives. Any questions at this point, or anybody want to raise an

issue that might be appropriate for either a motivational intervention or a teaching intervention before we go onto, you know, a couple final -- the coaching presentation? We do have some time for this?

DR. RICHARD GUARE: I guess one of the things that I'd say about motivation is that, I mean, again, once you come to adolescence, you're going to get kids that don't care. I mean, that's the reality of it. And you know, a lot of cases, I mean, we're dealing with kids that they just don't -- they don't have any particular investment in the tasks that we've got to get accomplished or in the goals that we want to accomplish. And so you have to think pretty seriously about incentive systems at that point.

When I was talking about context-dependent behavior before, you better find a way to have some control over some incentives. Because if you don't, you're pretty much dead in the water. And that can come down to hour by hour reinforcement, or that can involve using parents, you know, in building across home-school incentive systems. I don't think there's anything that we haven't used. But for a lot of -- once I get to middle school and high school, a lot of this is about skill building. But once we've developed the skill, this is getting the kid to use the particular skill.

And we always, in all of the plans that we run, we run it as a combination of reinforcement and some sort of consequence. Because I'd love to believe you could run this with nothing but positive reinforcement. It's not my experience. And so, as I say, we've got these kind of elaborate incentive systems and we're building in computer time, or we're building time in out of school, or we're building time in -- you know, once we get to high school, we're talking about access to cars and to phones and to whatever toys that kids might have a particular desire to have. And we're tying it very specifically to some sort of work production criteria, or to some behavioral criteria.

That's why most of the systems, the systems that I'll show you and the systems that we've got in place, are basically they have both an academic component and some sort of classroom behavior component, because a lot of these kids are really -- they're inappropriate in class. The kid that I was talking about with triple-E, this kid -- I mean, he's a good kid. He's certainly -- he's not a kid that you'd pick out of a crowd in terms of having real disinhibited behavior, but he got to a point where he's very quick to anger because he's quite frustrated, obviously, by this whole process. And so a teacher will come over to him and to give him a direction, and he wheels away from the teacher. All the kids in the classroom are on -- you know, they're sitting in these kind of rollaway -- and he just rolls away, you know. Or he tells the teacher, just tell the teacher, shut up.

And so it became an ongoing kind of an issue with this kid. And we set up a relatively simple, you know, behavior intervention procedure that said here's the acceptable thing. You know, the one acceptable comment that you can make is, no thank you, I don't need help right now. That was it. And if he didn't need any help -- but we needed the teacher's agreement to let this kid alone. You know, we're assuming that downstream, the

problem is going to come. His mother agreed and his father agreed that they would manage the work completion issue if work wasn't getting done. And if he complained about the fact that the work wasn't getting done because he didn't know how to do it, then accept the help. But you can't bitch about the help, you know, and bitch about the work not getting done. You're going to have to make some sort of a decision here.

And we had an incentive system in place for him. In this case, we used the home -- we only used the home as an incentive system. This kid's access to preferred activities after school and his access to the car, which for him is the most important thing in his life right now. And it proved to be quite effective, you know, over time. Again, in most cases, if you're going to run these home systems, parents got to be on board around this kind of stuff. If the parents aren't on board, then we're containing these systems entirely within school.

And you know, again, we work in a community -- we work out of a community mental health center. I mean, you know, we're lucky in some cases that our parents are getting through the day, never mind whether they're going to participate in incentive systems or not. It's just not going to happen. So we run a lot of our systems with no expectation whatsoever that the parents are going to be involved in these kinds of things. But in some cases, they will be.

As I say, there's an incentive component. There's also a punitive component. You know, what's the most valuable thing in the world for adolescents? It's their time. And so if you set things up to reward them with time or you set things up to deprive them of time, then as long as you've got kids who aren't super aggressive about this kind of stuff, you can run these kinds of systems. When we run into real aggression problems, then we're asking parents to manage this or we're going to situations where some outside authority is managing this kind of stuff.

But as I say, we run systems with some pretty tough kids all the way up through high school. And we've been reasonably effective about that. The times we're not effective, these kids aren't staying in public school. You know, they're either headed toward, you know, some sort of hospital or a residential placement or maybe just out of district placement, or worst case scenario incarceration.

DR. PEG DAWSON: Okay, one other quick point to make, and we often like to do this as an exercise, but we're not going to have time for that now. But I want to just talk briefly about the concept of effortful work, because that, like open-ended task, was another light bulb for me anyway. And that is effortful work doesn't necessarily mean the work is difficult. It can. All difficult work is probably effortful, but there's a ton of effortful work out there that isn't difficult.

And if you think about the chores you do to keep your house going on weekends, you know, you know how to do all of those. They're not difficult. But if I asked you on a scale of 1-10 to tell me what are some eight, nine, ten chores, which are chores which you hate doing, you put off as long as possible, you put on someone

else's chore list, or they just don't get done, I think many of you would have something come to mind very quickly. And you could also say, you know, what's a one, two, three chore for you? And you don't mind doing it, it's pretty easy. Sometimes it's relaxing to do it.

And the point we make with -- I make two points with this exercise. One is that an eight, nine, ten chore for one person is a one, two, three chore for another. And one of the examples I use is cooking. How many would think of cooking as an eight, nine, ten chore? You can't stand it, you -- wow, you guys like to cook. Okay, I do see some hands raised. And how many would say cooking is a one, two, three chore? Okay, so what you see is a distribution where cooking is fun for some people and effortful for others. And we -- right, well, there you go. It's context-dependent, isn't it? That's true.

But then the next question I ask is, so -- and I ask this of kids as well. What do you do to turn an eight, nine, ten chore -- how could you change it to make it a three? And you know, I get a range of answers to that question. You know, break it into smaller pieces, give yourself a reward to look forward to. I did this a couple months ago in a workshop when I had two people, two women sitting next to each other and laughing in the front row. And I said, what's the deal? And one of them pointed to the other and she said, she drinks. At which point I said, as a reward for getting the chore done or while she's doing it? Both.

So not all of our interventions can we share with kids. But if we can get them, first of all, to understand that even for adults, there are effortful tasks out there. And B, if we can get them thinking about how could we change those tasks to make them more manageable or reasonable, then that's an intervention strategy too.

DR. RICHARD GUARE: Yeah, that's really -- this is not just meant to represent tasks that kids can't do. It's also meant to represent tasks that kids find effortful and want to avoid just because they're effort-averse. So, and reducing the effortfulness of the task is really an intervention that you need to think about. Because sometimes it isn't the kid can't do the task, it's really they find the task too effortful to do it the way it's set up right now.

DR. PEG DAWSON: Okay, now I want to talk quickly about coaching. And I think there's a decision point here. I mean, there's a variety of coaching strategies to serve a variety of needs. But the two that we're most prepared to talk about, one is to deal with coaching for kids who are academic underachievers to help them learn to make plans and to manage their time and tasks in order to get homework done, or tasks or projects completed or things like that. The other is coaching around social skills development and some of these executive skills like emotional control, impulse control, you know, response inhibition.

I'm going to ask you to take a vote and then Dick and I will figure out who's going to spend most of the time talking. How many of you would feel like the academic coaching, or the coaching for academic success, is more in line with how you might -- the kids you work with, the problems you might be dealing with? Oh cool, you get to talk. Okay, how many -- maybe no one will raise their hand to this one either. How many of you

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think coaching around things like impulse control and emotional control flexibility? Okay, then why don't we just skip ahead? Do you want to skip --

DR. RICHARD GUARE: I feel like I got screwed on this vote.

DR. PEG DAWSON: But we didn't let them know who was talking first. But does it make sense to just skip ahead?

DR. RICHARD GUARE: Well, no. Here's why no it doesn't. I guess we don't have to spend a lot of time on academic coaching, but I think what I would like you to understand is something about the coaching procedure because -- and to see the coaching formed for this reason: that a lot of what we're talking about, it's not just to approach academics. It really is to approach how you approach, for example, self-monitoring metacognitive strategies. I think you have to come to this with a kind of coaching mentality. And I think the first part of that will give you the coaching mentality, so I'm really not trying to beg off on this. Obviously I don't mind talking, but.

DR. PEG DAWSON: Okay, then let me give you the basic foundations, and then we'll jump ahead so we can apply it to the social skills piece. Basically, Dick and I came up with this procedure. I mean, if you google coach, you'll find there are a gazillion ideas about what coaching is. There's executive coaching. There's life coaching. There's ADD coaching. And even within that, everybody has a different idea for what coaching really involves.

Dick's and my model actually grew out of Hallowell and Ratey's book, *Driven to Distraction,* if you remember reading that many years ago. Because they were the first people who actually said, you know what adults with ADD need? They need a coach. What does a good coach do? A coach instructs or trains. A coach provides constructive feedback. A coach is sometimes a nag and often a cheerleader. But the assumption is that when the coaching is over, there's a transfer of skills from the coach to the player you know, the person being coached.

And so at that point, we were working more off of a case manager model, where we wanted a case manager to check in with a kid three times a day to make sure they were organized to get through their day. Then we realized, no, we really liked the coaching idea better because, again, there's a transfer of skills. And as we envisioned it, the long-term goal or the big picture outcome of coaching was goal-directed persistence, that we would help kids set goals and do what it takes to meet their goals. so that's how the process sort of evolved.

And it's got, you know, several key components, which I think I can run through quickly. A big piece of our coaching is making a public commitment to what goals you have, or what you plan to do. And the technical term from the behavioral literature for that is correspondence training. If you make a public commitment to do something, you're far less -- you're far more likely to engage in that behavior than if you don't make a public

commitment to doing anything.

So you noticed this morning Dick talked about eating fruit for lunch. Well, if you noticed, he ate fruit for lunch, in part because he made a public -- I don't know whether that was your strategy, but he made a public commitment, so he was sort of held to that. I use that a lot by telling my husband I'm not going to have crème brulee when I go out to a restaurant, and then I'm accountable to him.

So, and there's some good research from the correspondence training literature to show that it's very effective. There are pieces of that that make it more effective than others, so it's more important to say and then do than do, say. So say what you're going to do and then do it. At the point where you reinforce, it's more important to reinforce for actually engaging in the behaviors. So if a kid says, I'm going to raise my hand during circle time rather than yelling out, you reinforce him for actually raising his hand.

DR. RICHARD GUARE: This is -- it seems like a relatively simple procedure. Use it. Saying that you're going to do something turns out to be a cognitive rehearsal for something. If you're a kid's coach or if you've taught somebody to be a kid's coach, again, my kid with triple-E, he sends me a text message in the middle of class about what an ass his teacher is. That's what he says. She's doing this and this and this and this. And so I sent him a text back and I say, listen, this is the deal with this particular thing. You just need to get through this particular time. You got to get through this particular time, this particular day. You know, you're two months at this point from graduation. And so he can actually use that as a kind of self-statement. You know, I won't get into it with her. I won't tell her what I really think of her. I just -- and that's been an effective thing.

And so, as I say, once you've got that kind of stuff in mind, it's a very powerful intervention. We just don't think about it. But if you get kids to do it on a regular basis, it will drive to some extent their behavior.

DR. PEG DAWSON: And there's actually some research to show you can do this even with kids who are non-verbal. So you can use pictures and they select which picture they intend to do during free time if you're trying to encourage social activities, for instance, in kids on the spectrum.

And then finally, it's better that they choose what they're working for, what they're agreeing to do, than you trying to do it. I have a great example of myself on a video tape with my son, where we were modeling the coaching process back when he was in high school. And at one point, I said to him, Aaron, can you commit to doing all your Spanish homework? This was six weeks into the year and he'd done no Spanish homework until then. And he just looks at me and says, do I have to? So that's when -- that was me trying to put on him a goal that he was not ready for.

And in fact, obviously the correspondence stuff, literature goes right along with goal setting because we're asking kids to set goals. And we know from tons of research that people who set goals are more likely to perform at a higher level than people who don't. You know, for obvious reasons. Goals serve multiple

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purposes, but one being you're more likely to work your way around obstacles if there's a goal out there you're shooting for. And you're more likely to actually think about the problem solving process. What do I need to change in order to achieve my goal?

So in the early stages of coaching with kids of all ages, although it looks very different with teenagers than it does with young kids or kids who are higher functioning than kids who are lower functioning, we ask kids to set goals. You know, at the high school level, we have kids thinking about what do you want to do after you finish high school? And then we pull it back to, okay, so let's talk about this marking period. With younger kids, Dick's going to talk about our peer coaching process, where every day a kid sets a goal. And at the beginning of the day, he may select a goal from a menu of options rather than having to come up with it out of his own head.

And again, at the high school level, the coaching, it's a daily coaching session that lasts 10 or 15 minutes, maybe even less when we do phone coaching, where we ask kids to make plans. Well, we start by reviewing the plan they made the last time and say, okay, you said you were going to do X, Y, and Z. This is the following up on the correspondence training. Did you do it? How did it go? If something got in the way, what prevented you from doing what you said you were going to do? And that's the evaluation piece, how did it go.

Then we have them in -- anticipate is part of the acronym. What's coming up? What's due tomorrow? What long-term projects or assignments do you have to do? Any upcoming tests and quizzes we need to be aware of? And then the plan, which is basically what are you going to do and when are you going to do it? And in some cases, how are you going to do it if we're worried that kids don't know how to do what they say they're going to do.

Okay, I think I can skip over who's going to be a coach. The characteristics of coaches, again, this varies depending on the age. I mean, these are all good characteristics, but the one, teaching more through questions than through lectures. The questioning piece is really important, particularly for middle school to high school on because what the questions do is it requires the kid to use their executive skills. If we say, okay, you've got a book. You have to read an entire book in a week. What's your plan? That gets them thinking about how they're going to break the task down. They're now saying, okay, the book is 180 pages. Divide that by seven and read so many pages per night.

These are the coaching ground rules that we felt are pretty important. With teenagers, at least the higher functioning teenagers, we think it has to be voluntary. Again, depending on the severity of the problem and how involved their program is, it can just be incorporated into their program.

Provide lots of support upfront. Fade gradually with success. And lots of support in some cases is the daily coaching. It's not something that we think you can do once a week because these are kids, their working

memory doesn't work that well. It would be like trying to diet once a week. Between Monday of this week and Monday of next week, they would have long ago forgotten what they said they were going to do, so that's why we make it daily.

We've also found you have to build in ways to verify student reports. If the goal is for a kid to hand in his homework, you know, there better be at least a weekly check-in with his teachers to make sure he actually handed in his homework. And then other ground rules vary depending on the age of the child and the severity of the problem.

You can build in daily coaching sessions to teach mini skills or mini lessons like how to study for a test or how to take notes or how to write a report or how to plan a long-term project. This is what our daily coaching form looks like at the high school level, where we ask, what's your long-term goal? Let's look at the big picture. What are upcoming tests, quizzes, assignments? What are your daily plans? And then because I'm into checklists now, there's a place for a checklist there. Okay, I think it might make sense -- Dick, was there anything else you wanted to say?

DR. RICHARD GUARE: No, I think that's it.

DR. PEG DAWSON: Okay, now I'm going to -- actually, the one other piece I'll show you just because I think it's here -- no, I don't have the data. Never mind. Okay, we'll go on.

DR. RICHARD GUARE: So I'm going to talk to you quickly about two interventions for social skills. Here's my take on social skills, having done a couple of different reviews of the literature. These are very, very difficult skills to teach, period. And they're not difficult skills to teach in the sense that you could sit in a room and you could teach kids to learn these skills, and they might even be -- they might be able to demonstrate the skills inside that room. But the chances of them taking those skills out and using those skills in a live environment, it's a major problem, major problem.

And again, if you look at the literature, the literature on the efficacy of social skills teaching is not pretty at all. So what we've tried to do, what I'm going to show you is I'm going to show you two procedures, both of which we have some data for in terms of the interventions being effective. Both of them, both of them are dependent on peers as coaches. And we think that in a lot of cases, that really is the answer to the issue here.

If you're talking about generalization and transfer of skills, by the time kids get to even upper elementary school, but certainly through middle school and high school, you're not even going to get the chance as an adult to be standing next to these kids, prompting them about what they need to be doing in a social situation. And even if you could do that, they ain't listening.

So you've got to take somebody who's kind of part of that environment for these kids to be able to

learn something about the skills. So there are two -- there are two methods. One of them is a one-to-one peer coaching method, and the other one is a group coaching method. This is in the -- and I said to people before, and I will do this or Peg can do this, I don't care which, I will send you -- because we're not going to have a lot of time for this. I will send you Plummer's manual, which lays out this coaching, this peer coaching procedure chapter and verse.

She did it with fifth grade kids, but she adopted our model. And so you could do this with fifth grade kids. You could do this with eighth grade kids. You could do this with high school kids as long as they're willing participants. Right, that's still a critical kind of issue. Actually, you probably even need that with younger kids.

So what she did is basically she identified a kid who wanted to get better at being able to interact with other kids. I did this with a kid last year. So I got a kid and he doesn't like the fact that other kids don't like him. When he does something annoying, like he walks into a group and he's got no personal boundaries. So he's in their particular space, or he puts his hands around people, or he's louder than everybody else, okay? Those are the three target behaviors.

And so kids would say to him, you jerk, don't bother me. And he became quite sensitive to that. He wants these kids to accept him a little more. So we went to him and we said, listen, here's what your particular goal is. You want these kids to be a little bit more receptive to you. Here's what we see going on in the situation. There are times when you do things in the situation that you're probably not even aware of what you're doing. But the behaviors are annoying to these kids. So if we could find a subtle way for you to choose a different set of behaviors, would you be willing to do that? And we'll find somebody who can remind you about those behaviors in a situation.

In this particular case, we proposed a peer coach to him. You know, and again, you would approach this differently with different kids. But in this case, he knew the coach. Coach was a girl in his class and she had agreed to do the coaching. And so we said, here's how it's going to work. And we did a fair amount of prep work, these two or three meetings with this kid before we ever got anywhere with this. But he said, okay, I will think about doing that. We brought the kids, had done some coaching -- training with the girl beforehand, and also let the girl read the manual, so a fifth grade kid.

And so the deal was this. So they get together -- I guess -- oh, I'm sorry. So again, this is just -- the procedure was Pam Plummer wrote it. Pam's a school psychologist. This study is published. She did this as her doctoral dissertation. I'm only giving you where we went through it because that's the level we know it at. So again, invite a classmate to be a peer coach. Parents were contacted, so the parents have to be on board with this kind of stuff, both the coach's parents and the kid's parents and so forth.

So we met with the kids beforehand and basically they identified what the target behaviors were. In

this particular case, we told the coach what we thought the target behaviors were going to be, but she saw this kid in the situation anyway. She's not interacting with this kid in this situation. She wasn't friends with this kid. It's important to understand or to say that because this is not a friendship thing. We're not setting this up as a friendship group. We're not setting this up -- this is really just a skills teaching kind of operation.

So what would happen is -- now they agreed on the behaviors beforehand. So they would come in in the morning and the girl and the kid would meet for about five minutes, and they would go over the behaviors that were expected out of this kid, which were basically maintain personal space with other kids, don't interrupt if there's an ongoing situation, don't get too loud in the interaction. We were only running it in a 20-minute snack time. That's the only thing that we tried to target because this was an open-ended situation that was a problem for this kid.

So they get together in the morning, they decide that this is what we're going to work on, and they decided on a cueing system. The kid and the girl decided on how she was going to let him know this. So she says, I'll tell you what. I'm going to sit here in this particular class. I'll always sit so I can see you. When you're in the class, you just have to make sure that you can see me okay. And this is what she comes up with as a strategy. She said, I'll keep a piece of paper on my desk. And when I see you doing any one of those behaviors, I'll just do this. And that's what she did. And it proved to be remarkably effective. It was a subtle cue.

So she's interacting with three or four of her own friends during this kind of thing, but she's kind of watching this kid, as a lot of kids would be doing, they'd be watching each other. And when she sees that, she does something as subtle as that. And it's a reminder for this kid because he's got a set of alternative behaviors. So he backs out of that situation a little bit or he creates some personal space.

And we ran this over a period of probably about two or three months. And by the teacher's estimate, by both the kids' estimates, they get together afterward every single day and they rate how the kid did. The coach does an independent rating. The kid does an independent rating. What you're looking for is correspondence between the two ratings. There's a reward system build into this that turned out not to be necessary. The kids didn't much care about the reward. The kid was happy that he actually was a little bit more accepted in the groups. The girl was -- again, a lot of your coaches, they're pretty altruistic kids to begin with, so they're fine about doing this kind of stuff.

So they get together every day, they go over it. But if you were running a reward system, basically the deal is that the reward system is based on the number of points that the kid gets as a rating about how successful he was that particular day. If the discrepancy between the coach and the player, the kid who's on the receiving end of the social skills training, you always go with the coach's rating. And they get bonus points if the coach's rating and the player's rating coincide, which facilitates good basically self-monitoring over time.

And they got closer and closer, so this kid became quite good in that particular situation about monitoring his particular behavior.

That's really what this about. So my goal is -- the way that Pam set it up, the kids would choose daily goals. Although as you read through this study, you realize there wasn't a lot of variability in the goals. And then they go, how did I do? You know, peer coach's rating, number of points obtained for the day.

So we did some variations of this particular thing. But as I say, you can read through it. She's got good data about -- she's got very good data. And her study was certainly more complicated than -- we didn't do this as a study. We just did this as an intervention. But we certainly proved the effectiveness of it.

The critical issues are that there's a peer in the situation who's willing. We've never had a problem finding peer coaches. And you'll see this in a minute both with individual and with group coaching. And the kids have worked this out among themselves in terms of what the cueing systems are going to be. We're in the process of trying to do this again with a kid who's a little bit younger in the situation. But we like the procedure. We think it's pretty effective.

DR. PEG DAWSON: Pam also wrote a chapter in our coaching manual that actually has everything you need as well, so I know all the team leaders have copies of our coaching manual, so just read Pam's chapter in there.

AUDIENCE MEMBER: When you pull this off at some point, do you find that it carries over?

DR. RICHARD GUARE: No, our assumption was that we were going to have to -- we were going to have to work to generalize this across other settings. As it turned out, this kid left this particular school in the middle of this intervention. We're actually thinking about trying this intervention with the same kid again because he's in another school system where I'm working. But no, I think you could get some generalization, but we haven't depended on that. But I will tell you about a slightly different procedure that uses peer coaches with younger kids where we have gotten some good generalization.

AUDIENCE MEMBER: [inaudible]

DR. RICHARD GUARE: Yeah, yeah. So I got working with a younger kid. We started where a younger kid -- again personal space is an issue, so this kid is setting his hands on people all of the time. So we got a classroom mate -- and actually this kid had his own paraprofessional. She's cueing him, you know, like personal space, hands to self. But number one, he's annoyed when the cue comes from the paraprofessional. Number two, it doesn't seem to be making a lot of difference. He's kind of prompt dependent on that.

So we give a card to a peer as we reposition the peers. So we've got -- you don't want a lot of surrogate parents involved in this. You know, so if you've got little boys and little girls that really do want to take a kind of authoritarian role in this thing, you don't want them as coaches. You know, you want kids that understand when to back off. So we repositioned the kids in a circle. We gave kids on either side of him a picture. And so

when he reaches to touch them or somebody else, they just show him the card. And over a period of about three weeks, we're able to fade the cards. And this kid is an active participant. This is two years ago. This kid is an active participant in groups right now. We rarely, rarely have any kind of an issue.

So our sense is the younger you start it, the better. Again, it's the idea of fading the prompt, you know, with success. This kid was, again, quite invested in being able to relate to other kids. So, and you know, so the coaches are great. You know, the kid, he's called Junior by the kids. Junior, you did a great job in circle today. You did a really nice job keeping your hands to yourself. And so he's all smiles. That's enough. We didn't need any other reinforcers for that.

But I think, you know, in the world of generalization you've got to think about actually taking these into other kinds of situations. So that's one of the interventions. Okay, so we were given a grant by a hospital, myself and another behavior specialist, to set up a social skills intervention for kids, initially for kids on the autism spectrum. We were dealing with pretty high functioning kids. Actually, one of our groups was pretty high functioning kids on the autism spectrum and kids with Asperger's syndrome, but with horrible social skills.

So we initially figured -- you know, when we thought about doing this, we looked at all the traditional social skills stuff and decided we weren't going down that path. So we constructed a model that was based on nothing but peer coaches. So we got a group coaching model. We've got five coaches; we've got five players that we recruit, okay? And we had time to train the players. The woman -- and this is the curriculum I'll send you. This is 100 -- it's an unfinished manual, but it runs about 170 pages probably. I'll send you the -- I'll send you the curriculum.

What I showed you earlier, the listening skills card, was one -- that's one tiny activity out of -- so we had listening skills cards, we had listening exercises, we had games every day that the kids played. Basically, these guys met in a group one time per week. And five coaches, five players. The activity was introduced by an adult facilitator who took about five minutes in the group, and then we had from 35 to 45 minutes to run the activity. The coaches ran the rest of the activity.

So to give you one example, like in the listening activity. So now we want to teach -- we started off with teaching the basic skill of listening because in a lot of cases, these kids were lousy at listening. So what's listening? Listening is these four behaviors. You know, it's face the speaker. It's -- I can't even remember what they are. But anyway, you saw the card earlier. And then we give kids a script so that the kids don't realize this. I'll tell you how we get to that in a minute. But the players don't realize that their coaches aren't just some random kids that showed up in the group.

So they're seated around a circle. There's coach, player, coach, player, coach, player. So we pick them up in dyads, they get up. And one person in the pair, because both the coach and the player are going to do

this, they're given a script. You speak for 30 or 60 seconds. If you don't know what to talk about, this is what you can talk about.

The rest of the kids in the group are watching these kids perform this particular -- so now I'm going to talk for 30 seconds. You know, the other kid who's opposite me is going to be my listener for 30 or 60 seconds. Then the other kids in the group rate how the listener did. Did you follow this? Did you follow this? Did you follow this? Did you follow this? The kids are broken down into two teams, and the better listener you are, the more points you can get for your particular team. But it never got real competitive around this kind of thing.

And then we had another activity that we did. We videotaped the kids. We taught them, you know -- in one case, we wanted them to be able to watch -- to learn non-verbal expression of feelings. So they asked me if I would tape certain shows, and they would watch these shows and guess what people were trying to express non-verbally. So they asked me to tape the show *Cops.* So we brought them the show *Cops,* turned the volume off, and said, what does this particular individual -- what emotion is this individual trying to convey in this situation?

Or we would have them act out a scenario. So your job today is act out an event that happened in your life that you were unhappy about, that you were depressed about, that you were excited about. We have them do that. We videotaped each of the dyads, one kid actor, one kid observer, and then vice versa. And then we turned the volume off and everybody else watched to see if these kids could both interpret what the emotion was, but if also they could learn to use some sort of non-verbal or expression as a way to convey emotion. And again, they got quite good at being able to do this.

Now we ran these groups for the entire year. The first year we started, we started in January. We went through to June. But every other year -- this program's been running for six years at this point. At this point there are 58 kids involved in this program at one high school. There are 28 coaches and 30 players. So, and they meet on a weekly basis.

Again, a lot of our kids have been in this group for two to three -- we let them stay in the group for as long as they want, players and coaches both. Why? Because this is not an eight week -- you don't learn social skills in eight weeks. And our question was, how are we going to get these skills to generalize to a live environment? The way that they generalize to a live environment is all of your coaches live in that environment. And so what we thought we were going to have to do in terms of real planned kind of interaction, we did some planned interactions the first year. The rest of it, the coaches became natural facilitators for these skills showing up in a live environment.

We're currently -- we've got a grant from Autism Speaks right now. We're replicating this same curriculum in a community-based recreation center with middle school kids. So right now, we've got -- actually,

we're up to five. We've got five coaches and five players. And that's what we're doing, where they meet for once or twice a week. They meet for a half hour and then they go out into the recreation community and they do kind of semi-structured recreation activities like there's a cooking class, there's a computer class, just to see if these kids can learn these skills in this particular situation.

In the first go-around with this, we had very good data. We had good individual data. We had good group data. We never published this study. But I guess having looked at the literature in terms of peer coaching, I really do believe that peer coaching is the only way you're going to get transfer and generalization of these skills into this environment.

I will leave it at that and let people ask questions. As I say, I'm happy to send both of these intervention strategies to you. So no questions about that? Anything about anything else today?

AUDIENCE MEMBER: If you were doing a 504 plan for a kid and part of your strategy relates to that kid helping you with peer coaching, how would you accommodate that in a 504 plan? My experience with 504 plans is that you can't reference kids -- other peers as a resource or accommodate. Does that make sense what I asked?

DR. PEG DAWSON: [inaudible].

AUDIENCE MEMBER: Yeah, you can't assign tasks to students that -- you can only - and within 504, you can only provide accommodations provided by staff. You can't provide accommodations by making students responsible for tasks. I mean, I'm almost answering my own question because I suppose you could say the staff will do such and such.

DR. RICHARD GUARE: And there's always -- there are always staff associated with this. So basically if the peer becomes a kind of prompt or a cueing device, but --

DR. PEG DAWSON: You could say the student will participate in a peer social skills group. Because in a sense, it's not all that different from other social skills groups except we're actually using the peers to help teach the social skills as opposed to all the peers learning the social skills.

DR. RICHARD GUARE: And for my part, I'll just pretend that you never even brought the issue up to begin with, and so it'll never come up in 504 plan I'm involved in. What? I never heard of that before.

AUDIENCE MEMBER: Your coaching groups, though, are they like part of -- like at the high school, is that part of their school day or is it an after-school --

DR. RICHARD GUARE: Lunch. That's a great question. When we first did this, we realized very quickly our coaches -- our coaches -- you know, again, you could find great coaches. We've had spectacular coaches over the years. They volunteer to come during their lunches. We had a pool of coaches because sometimes they weren't available. And our players also came during lunch. But in order to get them there the first year, I bought them any junk food they wanted. I said to them -- kids said, I'm not coming, that's a stupid idea. I said,

I'll buy any candy and soda you want. They said, I'll come.

FEMALE SPEAKER: Any other questions? Anything at all? Okay, well, that concludes the speaker portion of our day, so thank you so much.