



## **Web-Based Radio Show**

### **Autism and Special Needs**

#### **Working with Unique Biological Differences**


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Good morning. Welcome to our Web-Based Radio Show. Today we have a very interesting topic, but before I introduce it, I want to let you all know that if my voice sounds a little different than usual, it's because I have just come from the dentist and I still have some Novocain and numbing on the right side of my mouth. So I think I'm reasonably clear and I'll try to talk slowly but if you hear my voice sound a little bit different than usual, it's not me, it's the Novocain.

Today's topic is how we work with unique biological differences of children who have autistic spectrum disorders, but also other special needs challenges like severe regulatory problems, or language problems, or more motor-based problems. Each child has a unique biological profile that requires a slightly different way of working with that child. We've touched on this topic before, but I haven't gone into a quite sufficient depth on it and I get a lot of questions from you all about this, so I thought I would return to it and go into a little more depth.


But first, as a way of introducing the topics, we need to go back to some basics and think about how we define autistic spectrum disorders and related special needs conditions. As many of you know, historically we have defined autism and the full spectrum of related disorders based on a list of well-known symptoms. The children tend to have problems with social skills and interactions with caregivers and peers, with a particularly hard time reading social signals, the children tend to have language disfunctions including delays - even children who tend to be able to remember words clearly and repeat whole sentences, tend to have a hard time using language socially in a meaningful way. The children also are characterized, as they have been historically, in terms of unusual or challenging behaviors that are often hard for adults to understand such as lining up toys, or staring at a fan, or jumping and shaking their hands, or walking



on their toes. These behaviors tend to fall into a pattern that is often summarized as self-stimulatory behaviors, whether it's looking at a fan or jumping up and down and shaking one's hands or simply touching something over and over again. Also, the children are characterized historically as having a narrow range of interest; getting preoccupied with a particular object or if the child is verbal, getting preoccupied with only trains and nothing else.

So the traditional and historical characterization has been problems with social interaction, with language, with unusual behaviors including repetitive or perseverative patterns, and self-stimulatory behaviors, as well as a narrow and overly focused set of interests. Recently, however, based on newer research on how the mind and brain develop, we have been able to take a fresh look at autistic spectrum and related disorders and define it in a slightly different way. It incorporates the historical observations, but it organizes the information differently. The reason why I'm mentioning this is because this, what I would call "newer" way of organizing information, I would label it as "developmentally based" way of organizing information, has important implications for how we assess and how we intervene with children with autistic spectrum or related disorders. It also has some important implications for how we can identify the challenges that later become autism or autistic spectrum disorders at the earliest possible expression. This means we have a better opportunity to help the child master the healthy foundations for relating, communicating, and thinking.

Now in this new way of defining autistic spectrum disorders, we tend to organize it in terms of the primary challenges or what I call the "core deficits" and the "secondary symptoms" or challenges. That is, those behaviors which stem from the core deficits. Now, what are the core deficits? There are core deficits in relating, communicating, and thinking. We've identified six core capacities for which there is mounting and growing evidence from our own research and the research of colleagues. These are challenges in sustaining focused attention, flexibly dealing with sights, sounds, and people, they have to do with difficulties in sustaining joyful, intimate, warm engagement. They have to deal with difficulties with reciprocal, emotional interactions where children are entering into back-and-forth cuing with their emotions or with their motor gestures, including facial expressions, so typically it's hard for children with autistic spectrum disorders to have many, many circles of back-and-forth communication involving facial expressions, arm gestures, sounds, or if they are verbal, eventually words. They also have difficulty with something we call, "shared social problem solving." This is where the child takes mommy by the hand, walks her to the toy area, points to the toy that they want, makes vocalizations or words indicating the toy, and then thanks mommy with a head nod or



looks satisfied. That sort of complex social problem solving is difficult. That's the fourth core deficit.


The fifth one has to do with using ideas or language or words meaningfully and creatively. For example, in pretend play, talking for the dolly and saying, "Oh, I want some juice" or "I want to give you a kiss." Or, just in regular conversation, talking about feelings or desires or wants rather than just repeating scripts.

The sixth core deficit is in using ideas logically and connecting ideas together and being able to answer "why" questions in a meaningful way. So if the parents ask, "Why do you want to go outside?" and the child says, "Because it will make me happy" or "Because it's a nice day" or "Because I want to play."

So these are the six core deficits and there are also, as many of you know, the six core capacities that lead to healthy relating, communicating, and thinking. In other words, the core deficits and the core foundations for healthy relating, communicating and thinking are opposite sides of the same coin.

Now these core capacities and related core deficits that characterize children with autistic spectrum disorders are also described using different terms. Many of you have heard the term, "joined attention" as a core deficit in autism. There is a great deal of research showing that children have problems with joined attention have difficulties with their acquiring language and acquiring social skills and acquiring advanced thinking skills, unless of course, they master the ability for joined attention. Now what joined attention is, is two words that describes a body of research where children are asked to look, for example, at a toy and then go back and look at the mommy or daddy, and go back-and-forth between the object and the person. So in typical interaction where a child, for example, is showing a parent a toy, they will show the toy and then look for a response from their parent, they'll go back to the toy, go back to the parent, and there is a lot of back-and-forth between looking at the parent or referencing the parent, and referencing the toy. The two are integrated. Now joined attention correlates with our shared social problem solving where you take mommy by the hand, walk her to the toy, show her what you want, then look satisfied, then maybe gesture to her to play with the toy with you – that is joined attention.

When we talk about shared social problem solving, however, we are taking it one step further. We are talking about how the child does these joined intentional activities in a continuing back-and-forth way. In other words, rather than simply having one circle of communication with a joined attention where you show mommy the toy, look at her, then look at the toy, this means doing this for 10 – 15 minutes, 50 times in a row as you would




in a normal play session with the child. So shared social problem solving includes joined attention but does it in a continuing way.

Also, you've heard the term "reciprocal social interaction." That also fits into our third level in our core deficits where we talk about opening and closing circles of communication; back-and-forth emotional cuing where the child gestures with facial expressions or arm gestures or leg gestures or sounds. There's a back-and-forth between the parent and the child. We call those "Circles of Communication." Well, that's the same thing for reciprocal social interaction.

Now there is mounting research showing, for example, that children who can engage with parents in reciprocal social interaction, and even more important, that parents who foster reciprocal back-and-forth social interaction tend to have a developmental pattern associated with their child's development where the child develops more language. So children with ASD who have more reciprocal social interaction and parents who tend to foster that because they value the back-and-forth as opposed to, for example, just teaching the child to memorize a skill. That is associated with better language development. Similarly, there are many studies showing that joined attention, which is shared social problem solving, is associated with language, games, and with social games and with later thinking skills. So we are seeing that there is a body of research emphasizing the importance of focusing on the core deficits. Again, the flip-side of those core deficits are the core capacities.

Once we identify the core deficits and the modern way of thinking about autistic spectrum disorders, we also look at the symptoms. It's the self-stimulation, perseveration, narrow range of interests, things like echolalia, for example. But we think of those as secondary to the core deficits. So for example, the child who doesn't engage in shared social problem solving with their toys; enjoying attention with their toys tends to instead, because they are not sharing the toy with the parent and not playing with it in a flexible way with someone else, so if they are interested in toys and have some motor skills, they'll tend to just line up their toys. So that is the lack of the ability for the shared social problem solving. Similarly, a child who is echolalic, can remember what they hear and remember whole books often, so if they are echolalic or tend to script a lot – just repeat what they hear or see - they are doing that instead of having meaningful use of ideas. So when they don't use ideas meaningfully, this is hard for them. So they tend, therefore, to fall into the trap of just lining things up or just repeating what they hear in a scripted way.


Similarly, many of the children when they are being self-stimulatory, that is because it is hard for them to regulate their sensory systems. So they are trying to get



sensation in by looking at a fan or by jumping up and down. Now if the child learns to dance with mommy or daddy, that can be a lot more fun than just jumping up and down by yourself and that will give the child the same sensory support and the same pleasure that an adult has dancing, but now it is as an organized social activity. When a child can't do it interactively because a child hasn't learned, they tend to, therefore, self-stimulate because they need a certain level of stimulation. So whether it's looking at a fan or jumping up and down, it's a substitute of a solitary sensory activity for an interactive, what I would call, regulated back-and-forth sensory and motor activity.

So here you can see how the primary symptoms tend to be a result of a lack of mastering these core capacities, or the existence of the core deficits. Having a narrow range of interests is the same. When a child doesn't begin to use gestures in a continuing back-and-forth interaction, i.e., many circles of communication, and the child doesn't use gestures to indicate wishes and needs, and then doesn't develop words to indicate wishes and needs and desires and communicate meaningfully from the heart, so to speak, but just repeats, that leads to a narrow range of interest because again, the child tends to operate as a solitary entity. In order to broaden your range of interests, you need to be part of a two-way communication system and a part of a relationship because the way the child expands the range of interests is through back-and-forth communication with others. The child is playing with a toy, mommy challenges him to connect it to another toy; or in a pretend drama, the doll is saying "I'm hungry" and the mommy doll says, "Oh, well should we have a tea party or should we have dinner?" That's the way language and interests get expanded. Children who are related and interactive go on nature walks. They visit the zoo. So the more you are in your own world, the more you tend to repeat and narrow your interests or words and narrow your range of interests. So here too, this is a product of the lack of mastering the core capacities.


Now the other historical notion that we need to address as we define autism and also redefine it in our new way, which will lead to our topic for today of understanding how to deal with unique biologies, is that there is lots of evidence that autistic spectrum disorders have a strong genetic component. For example, identical twins have a higher likelihood of both having a disorder than non-identical twins. Also, siblings have a higher rate than anyone else in the population. Now it doesn't mean that siblings are likely to have autistic spectrum disorders. There are different estimates, but it is estimated that roughly 5% of siblings may be at risk for a similar kind of disorder. It is more likely that a child will not have an autistic spectrum disorder, but the fact that there is a higher rate than in the normal population suggests again, the genetic factors. So there is lots of evidence.



There have been studies of families showing certain genetic patterns. The problem has been a finding a consistent genetic pattern. But there certainly appears to be genetic influences.

The historical notion has been, however, that these genetic influences or more broadly, biological influences, produce the syndrome so that the biological influence – genetic and perhaps some prenatal risk factors – can tend to, at a certain age, produce this cluster of symptoms – narrow range of interest, more social behavior, language disfunctions, etc. But, again the newer evidence; our newer way of thinking about it, is slightly different. It recognizes the genetic influence, but sees a developmental pathway with many steps in it. Not that you have a genetic influence “A” and then at some point, “B” and all of a sudden you have this cluster of symptoms. This is true for certain disorders, it does work that way. For example a disorder such as Huntingtons Career where you have a genetic problem and all of a sudden at age 40, you may have a certain neurological syndrome. But autistic spectrum disorders don’t appear to work that way. What the newer evidence seems to suggest, and our own observations of many, many children seems to suggest, is that there is a gradual emergence of these core deficits over a period of time. Or another way to put it is, a gradual compromise in these core capacities that build healthy foundations for relating, communicating, and thinking. This is a gradually expressed disorder with many, many variations and many varying degrees of severity, depending on the degree of compromise in these core capacities, or the degree of severity of each of the core deficits that I just mentioned before. So in our studies of videotapes, for example, of infants who later were diagnosed with autistic spectrum disorders, we see that their engagement wasn’t as sustained, even though they may have showed some pleasure, they were more reactive in the way they smiled rather than initiating the smiling and the joy, and it wasn’t as sustained, for example. In each stage in development, as a child was learning social interactions, we have been able to describe the characteristics which put the child more at risk for heading in the pathway leading, eventually, to an autistic spectrum disorder. So this should be viewed as a gradually emerging disorder with many steps along the pathway.

We described this at another time – I have gone over each of the steps in this pathway, so I won’t go over them now. But, the key point is, that by identifying the steps in the pathway, each step gives us an opportunity to help strengthen the child’s adaptive capacity, or core foundation rather than further erode or contribute to the core deficit. So we have a child, for example a 4-month-old child who is beginning to show lack of sustained pleasure and joy. You have to work a little harder to have the child react with pleasure. At that point, if we pick that up, rather than waiting until the child is two or three and has a language delay, we can work on helping that child take more initiative in




their pleasure and in their intimacy and in their relating and sustain it for longer periods of time. We can look at what is contributing biologically to the child having trouble with that and not just simply take a “wait-and-see” attitude where we say, “Ok, let’s see if he or she develops autism at age two or three.” Rather, we can take a very active approach.

So the other differences we redefined autistic spectrum disorders, in addition to redefining the primary and secondary symptoms, is that we are also now looking at the gradual emergence of these core deficits, or the gradual compromise in some of these core foundations needed for healthy relating, communicating, and thinking. As we do, we can try to strengthen those. Now it sounds like it is best to do this at 4 months or 8 months or even 2 months of life, whenever you pick up one of these challenges. To be sure, the earlier the better. But, this way of thinking helps us when a child is three or four or even five or six. The reason why it helps us is because we go back to these core capacities the child needs to master or these core deficits I just outlined. We evaluate very carefully how well the child has mastered it, how deep is the compromise. Then even in a 3 or 4 year old, or even 5 or 7 year old, or even in a 42 year old, we then work on strengthening these core capacities, rather than just dealing with the surface behaviors or surface symptoms. So again, rather than just trying to interrupt perseverative or repetitive behavior, we try to strengthen the relatedness; strengthen the back-and-forth communication capacities. So this model of gradual of emergence; this model of core capacities; and this model of core deficits enables us to have stronger intervention strategies.

Now we are going to come back to our primary question for today, which is “How do unique biologies fit in and how do we work with unique biologies?” What we have discovered is that each of the children who is at risk for autistic spectrum disorders, and also children who are at risk for language problems and regulatory problems as well, tends to have unique biological expressions at these different stages or steps in development. The genetic risk and the prenatal risk or even early postnatal risk factors tend to express themselves not as the expression of the whole syndrome, but in terms of differences in the way the child reacts to sensations such as touch and sound and smell, the way the child organizes movement, and the way the child comprehends what they hear and what they see. These differences in the way the child reacts to and comprehends sensation and plans and executes actions is what gives us the profile of the child’s unique biology.

Whenever we start working with a child, whether it is at 4 months or 4 years of age, or 42 years of age, we need to work with the child’s unique biologies because that becomes a very important component of the intervention program. In our DIR Model, remember we look at the functional emotional developmental capacities, which are these




core abilities I was talking about, or the converse – the core deficits, we look at the individual processing differences, which are these unique biologies, and we look at learning relationships that are geared to the unique biologies, so we can work with the child properly. So the question becomes, then, how do we work with these unique biologies?

The other principle I want to mention in working with unique biologies, is to emphasize that the way in which we believe unique biologies are tied to these stages of development like learning to engage and learning to make pleasure and learning to interact in a back-and-forth way is in the following way: The child is born with a sensory system and a motor system, but he needs to get his sensory and motor system hooked up. He needs to get them working together. So the child sees mommy and then he has to turn towards mommy and give her a big smile, he needs to get the sight of mommy or the smell of mommy hooked up to the motor response, which is turning to mommy. We believe what helps those sensory and motor patterns get hooked up at higher and higher levels, not just at a basic reflex level, is our friend, emotion and affect. So we have what we call “sensory affect” or “sensory emotion motor connection” very early in life. So when a baby looks toward mommy rather than away from mommy, it is because mommy’s voice is pleasurable.

But if that baby is hypersensitive to sound, the normal human voice may feel aversive or negative to that baby and therefore that baby may have a hard time coordinating the sensory with the motor pattern. In fact, if the baby is hypersensitive to sound enough and the sound is just a normal high-pitched human voice, the baby may get overloaded and go into a panic mode where the baby is under a great deal of stress. It’s just like an adult who gets very scared and panicked and goes into a fight-or-flight reaction. It’s hard to have organized responses when you are in a panic and either running away, running toward and fighting, or just freezing and being immobilized. So there are a number of what I call “catastrophic reactions” that have to do with very primitive levels of our nervous system, of how we cope with extreme fear, stress, overload, or being overwhelmed. We’ve all had those states of mind so we know how it feels.

Now the same thing can happen when a child is under-reactive to sound or touch. So mommy or daddy is over at the left calling for little baby Susie or Johnnie to look at mommy, but the baby is so under-reactive to sound that it doesn’t register. So the baby is again, having a hard time connecting sensory and they are not registering the sensory with the motor pattern of looking, which would be guided by the pleasure of hearing mommy’s voice. So in ordinary development, you have the pleasure; the affect helping the baby connect the sensory and motor through this, what we call sensory affect or




sensory emotion motor connection. Now as the child goes up the ladder and just becomes more and more complex, it helps the child negotiate complex social behaviors. We described this elsewhere and I won't go into detail how the sensory affect motor connection plays out in all the different stages of development. It's important to mention here because it helps us see why the unique biologies are so important.

Take another example, a child with a motor planning problem – the child can't sequence actions. He can hear mommy's voice and in a sense, wants to turn to the right, but can't organize the motor response. So he can't organize the motor response and the child looks off to the left by mistake, doesn't see mommy, doesn't get the pleasure, doesn't get the affect, so you don't get that sensory emotion affect connection or "SAM." Instead the child gets sensory input, has a random kind of motor response, and those two don't get connected.

Now when a child is just lining up his toys at 15 months instead of getting involved in joined attention or shared social problem solving, it's because they don't have, often, the sensory affect motor connection. The affect, or the pleasure is what helps the child negotiate between the live caregiver and the inanimate toy. The same thing in terms of meaningful language – your emotions or desires or wishes have to invest language to give the words meaning, but if you don't have that sensory affect motor connection, it's hard to master that.

So when we look at the child's unique biology, let's take it one by one. If the child is under-reactive to sensation, it will interfere with that. If the child is over-reactive to sensation, they may get into a panic and get overloaded and it will interfere. A third pattern is where the child is very sensory craving – seeks out sensation. We see this, particularly, as children begin walking, that they are running all around, jumping, running, and banging into things. They seem to get distracted by their own motor actions; by their own movements. They are so active all the time. Here, too, we get an interruption because the child's sensory craving is so active, there is almost no time for the child to connect the sensory with the affect with the motor. In other words, they are driven into diffuse activity and the relationship with the caregiver is almost bypassed because they are banging or jumping or self-stimulating. But if the caregiver can get into that world with them, then they can start making the sensory affect connection and then they can start playing organized interactive games, be it more physical; be it more rambunctious. So the idea is to make it into a social sensory craving activity.

But, you can also imagine a child who can't decode what they hear. Mommy is saying, "Here I am, here I am." New babies can understand patterns; they can decode rhythms and voice. But the child who has difficulty with decoding due to an auditory




processing problem, will have a hard time decoding the rhythm of mother's voice, and therefore that won't make sense. That, too, will mean that the sensory input is not working in the way we would like it to, to connect to the affect and connect to the motor pattern. Or the child who has a problem with visual processing – he can't understand what he sees. The big, smiling mother's face may not appear like a mouth and nose and twinkling eyes all together. They may appear as separate features and the child can't make sense of the pattern and therefore it's hard to connect the visual sensory input with the affect and the motor pattern that goes along with it.

So auditory processing problems, visual spatial processing problems, motor planning problems, sensory over-reactivity, sensory under-reactivity, or sensory craving can all interfere with the sensory affect motor connection. Now that then gets to the principles we want to use to help children overcome these biological differences so they can form these sensory affect motor connections that will help them master each of these core capacities.

Here are a few general principles, and then we'll talk about some examples from each type of problem. One of the most important goals early on with a young child, and at any age, is for the caregiver – this could be the educator or could be the parent or could be the therapist – whoever is working with the child, to try to get a rhythm going with that child. One of the first ways new babies have with interacting with their caregivers, is through matching rhythms of movement and emotional expression and vocalization with the caregiver. We see this in new babies – there is an almost kind of synchrony, like they are both in harmony with each other. We have observed that children who are at risk for autistic spectrum disorders have a difficult time achieving this harmony, in part for the reasons I just mentioned, because of all these differences in their nervous system.

So in order to get this rhythm going, of back-and-forth rhythm where you are in synch with one another, you've got to do two things as a caregiver for any of these patterns. It will be a little different for each one. Try to match the child, initially, but then you counter-regulate with the child. What do I mean by counter-regulate? If you start off kind of imitating the child and capture their rhythm, but then you'll see the child gets over-excited, let's say it's the sensory-craving child. So you have to down-regulate and try to sooth and organize and structure a little more. Or the child is overloaded and is sensory over-reactive and is getting frazzled and starting to go into a tantrum. Now you counter-regulate down and become extra soothing. The child who is under-reactive and self-absorbed and can't register sensation – you energize up. You use more energy and affect in your voice to get the child's attention. If the child then begins shifting into getting overloaded because the child is both under-reactive and over-reactive to different sensations, let's say under-reactive to touch and over-reactive to sound, as soon as you




get his attention, you might then become more soothing. So you might energize up, and then immediately soothe down.

Now many, many caregivers do this intuitively with their babies. With a four-month old baby, you'll see mommy energizing up to get the baby's attention, and once they do, they'll try to maintain it by then getting more soothing. It's like an orchestra leader who has the band playing loud and then soft and then back loud again, playing with the audience's emotions. This is the way the caregiver has to work with the child. So the first thing is to match, but then counter-regulate to maintain engagement and maintain attention and maintain, if the child is able to, back-and-forth communication, whether it is with gestures or whether it is with words. So that is what we want to do.

Now let's talk a little bit about how to do that with each type of child, just a few more details. Again, with our sensory craving child who is very active, this involves matching and getting into his activity with him – dancing, jumping with him, running around with him, and then try to down-regulate him by slowing the rhythm down. You might hold his hand while you are running around and then go from fast running and holding hands and jumping together to slower, and slower, and slower, and slower. It is also very useful with a sensory craving child to provide a lot of sensory input that is social in nature. So every hour doing deep massages on the arms, legs, abdomen, and the back, and holding his hands while you are jumping on the trampoline together, or he jumps and you hold his hands. Sometimes to help the child settle down, if the child is verbal, you hold his hands and move his hands to the rhythm of your voice and his voice as you are talking together. Or just to help the child look at you and exchange some gestures or some signs, you can hold his hands and move them rhythmically with your voice to help the child settle down. For some of the children, wearing a weighted vest is helpful because it gives them a lot of sensory input as they are moving – a little more than they would get by moving without the weighted vest, and they don't have to move quite as much which just makes our job easier because we can enter into their rhythm a little more easily. We don't have to be quite so frantic.


The signs that a child is not getting enough shared sensory input or not enough deep pressure through a vest or through massage let's say for 10 minutes every hour, might be that the child is involved in a lot of self-stimulatory activities. This can be involved in trying to stimulate any parts of their bodies from jumping to touching different parts of their bodies to lying on the floor and rolling around, etc. So it is particularly difficult for the sensory-craving child because they are so active and get distracted by their own movement patterns.



Sometimes music can help calm a child down. Lots of rhythmic activity with music, such as jumping with music and trying to keep a beat together can help organize a sensory craving child and provide that rhythm that was hard to achieve early in life.

The child who is under-reactive requires energizing up. Here, you need to apply lots of sensory support – sound, sometimes touching the shoulder. What you don't want to do, though, is grab the child's head and forcibly turn it towards you. You want the child to want to look at you because you are exciting, enjoyable, and interesting. So if you use highly energized sound, coupled maybe with touch on the shoulder or you usually draw the child's attention into you, sometimes it can be playing with the child's hands or playing with the child's feet or getting playfully obstructive so the child wants to pull his hand away and you do it in a playful way and you play a cat-and-mouse game with it, will draw the child's attention. So using sound, touch, engaging the child through their motor system can help that under-reactive child become more engaged and interactive.

Now for this child, you may also use the trampoline or jumping and do a lot of sensory work on an hourly basis. But here the goal is rather than calming the child down, is getting the child more energized up. So here we do a lot of running, jumping, spinning, and related activities to help the child reach a certain equilibrium. So whether we are having the sensory craving child down regulate to an equilibrium or the sensory under-reactive child up-regulate to an equilibrium, we may do some of the same activities, but we are bringing it from different directions into a middle zone where we can relate and interact and where they can develop these sensory affect motor connections through interactions with us. That's the key part – the human factor. Just having a child jump by himself or doing sensory activity with himself or with a computer or with a machine is not as good as having the human component. Sometimes there is technology augmentation – there are rhythmic activities that can be done without direct human involvement – but then you use that skill with human interaction. For example, we have found that the Interactive Metronome has been helpful for some children to improve their rhythmic activity and attention. We haven't researched it for children with autism, but we have researched it for children with attentional problems and with reading and math problems and they have shown improvements by improving rhythmic activities through a computer feedback system that improves the rhythmic activities. But, the key element is, once a child's rhythmicity has improved, we have to then bring in that sensory affect motor connection, i.e., the human factor, to make it real operative. It's the same thing with technologies that have improved the processing of language or sound. There are many technologies now like computer games that help children process words or sounds. Here, too, we can do that for a limited period of time each day, not too much, because



then we want to bring in the human factor. If we just use the technology alone, we'll be diminishing its benefit.

One strategy that is helpful as you are trying to match rhythms with a child, and as you are trying to up-regulate and down-regulate and help the child with these different patterns enter into interaction with you, is for caregivers to coach one another, and for therapists to coach caregivers, and for teachers to coach one another, or for teachers to coach parents and sometimes for parents to coach teachers. Sometimes it's easier for the person on the sidelines to see what is needed than the person actually interacting with the child. One good way of coaching is to obviously just point out that they might be a little more energetic or more soothing or try holding hands as you are jumping together or be playfully obstructive where you hold his hand and he has to pull it away or where you hide the toy he is interested in – those are all concrete suggestions that can be made as part of the Floortime interactions. But another strategy that is particularly helpful, I found, in coaching parents, and parents can do this with each other and again, different therapists with one another, is from the sidelines, convey the rhythm that you think will work with the child to the way you rhythmically coach the other adult who is working with the child. So instead of just giving a suggestion here and there, actually try to get into the mind of the person working with the child, “Ok, now you've got him. Now you've got him. Now try this. Grab his hand now, I think it's going to work. Oh, you've got him! Look at that eye contact! Look at how you're going!” So the rhythm of your voice matches the rhythm you are trying to accomplish between the caregiver and the child. You say, “Oh, he's looking, he's looking, oh you have him now. Let's see if you can sustain it! Ok, a little more soothing, now you've got to up-regulate a little bit.” So what you are doing is giving a kind of continuing verbiage in the rhythm that you think is going to help the caregiver literally enter the child's rhythm. So it's a 3-way rhythmic exercise. It is almost like a good dance teacher or a good sports coach who is talking you through the exercise.


Now different caregivers and different therapists need to work out their own styles of what kind of coaching works for them. Some may enjoy this kind of coaching and some may not. I found it can be particularly helpful because the person on the sidelines may be no more skilled than the person doing the actual work – maybe even less skilled – but has the benefit of relaxing on the sidelines and therefore may be able to enter the rhythm.

It's also important for the caregiver working with the child - again parents, therapists, educator – to keep a constant rhythm cooking through their voice and through their movement. Often, I'll see when parents or educators or therapists don't know what to do next and they become silent and just wait. I recommend that that is not the best

strategy. Rather, the best strategy is to keep that emotional rhythm cooking through your voice and through your own movement. But if you don't know what to do or what to say, just describe what the child is doing. Let's say if the child is wandering around the room and you're trying to decide whether to just be playfully obstructive or whether to entice the child with a toy he has shown interest in a second ago, and you're not sure which to do. So while you're thinking about it and thinking about which strategy you want to employ, you can say to the child, "Oh, there you go jumping. What a good jump that was. I see that jump!" While you are telling the child that you see the child jumping, "I see that jump – boy that was a great jump! What are you going to do now? Oh, I see you're going after that toy. What a great toy that is!" So while you're moving with the child, you're deciding what you are going to do next. So the child is hearing the rhythm of your voice. Importantly, the child is sensing the rhythm of your emotion and you and the child are connected because you are matching your rhythm and voice to the child's movement. So you're providing a sense of connectedness, even though it may look like the child is doing his own thing until you figure out that you're going to become a doggy and block the child's pathway – "Oh, I'm a doggy. What are you going to do? Are you going to go over me or ride me?" and so forth and so on.

Now the coach can help the caregiver by entering that rhythm also. So we want the caregivers to constantly be talking and shouting, constantly moving with the child as they figure out how to get circles of communication cooking. And they are going to up-regulate and down-regulate and take into account the child's sensory differences as they find that rhythm that works. I gave examples of that before.


The same thing goes for the auditory processing and visual spatial processing challenges. For the child who has visual spatial processing challenges, we're going to be more animated with our visual, but simplify it, we're not going to throw 6 or 7 facial expressions quickly. We'll exaggerate our facial expressions a little more so the child can grab onto it. For the child who has auditory processing challenges, we're not going to go silent on the child because the child needs to hear the rhythm of our voice, but we might repeat what we say. So let's say the child is by the door and we're saying, "Do you want to go out?" so instead of saying "Do you want to go out the door?" fast, and the child doesn't get what we are saying, we may emphasize it more but not get quiet. We won't say "Do you want to go out?" and then pause and let there be this silent pause for 10 seconds and then we lose the child. Instead we say, "Do you want to go out? Out? Out? Here, let me show you. This is out. This is in. Which do you want? Do you want to go out?" So we keep talking, but we may repeat it with emphasis. So the child, again, is in rhythm with us. I recommend against silences. If the child needs time to process, give him the time by repeating it with different intonations. So it's an ordinary vocal rhythm



and adjust your rhythm to the child's so it can be a slower rhythm or a fast rhythm, but it needs to be a rhythm. That's the way we take into account the child's auditory or visual. We can emphasize and slow down the rate of our facial expressions, our movement patterns can be more emphasized and slower for the child with visual spatial processing challenges and for auditory, again, we can repeat ourselves with emphasis in a slower rhythm, but with energy. So you can't go into a monotone like "Out...out...out" – it has to be with real energy. That's why we take into account the child's auditory processing problems.

So what we are doing is we are tailoring to the child's sensory reactivity – under-, over-, sensory craving – we are tailoring to the visual and the auditory systems. That is how we are dealing with the child's unique biologies. Now the other principle in doing this – so the first principle is we tailor to find a rhythm with the child so that we are connected. In other words, we are doing that so we get that sensory affect motor connection hooked up. Then we try to challenge the child and help the child and facilitate the child use their unique biology to negotiate each of the stages of development; each of the core capacities that we have talked about before; that are the reverse of the core deficits. So we help the child use that rhythm we have established; that engagement that we established to now undo as best we can the core deficits or to strengthen the core foundations (again, which are the opposite sides of the same coin). So we work on engagement, then we work on two-way back-and-forth signaling, then we work on shared social problem solving, i.e., many circles of communication in a row (co-regulated interaction) which I mentioned before also can be part of this many, many joint intentional interactions in a row. Then we use meaningful language.

Now what is not often recognized is as a child goes up the developmental ladder, mastering each of these functional emotional milestones or each of these core capacities, the child is better able to organize their unique biology. The child, for example, who gets to the point of a continuous flow of shared social problem solving can now signal to you that your voice is too loud. They can make a gesture with their face or their hands. So they can down-regulate you when you are too up-regulated. Once the child has words, they can say, "Mommy, that's too noisy" or "Mommy, I need a big hug now" or "Mommy I need to run and jump." So they can now use words and concepts to get the sensory environment geared to their needs. They can do this before they have words once they get 20-30 circle of communications in a row. We get to a point that we call co-regulated emotional interactions. By co-regulated means, the child is initiating as much as the parent is initiating. So it's not just the child reacting to the parent. The child is now initiating. Instead of just running into the wall, the child is gesturing like, "Come play an active game with me" like he pulls daddy from his chair and motions "Pick me up" to



play the airplane game. This is a child now who is co-regulating, taking initiative, being assertive, and having a good time.

Just to summarize the principles that we have, is that we identify the child's unique biology as it expresses itself, and sensory reactivity, sensory processing and motor planning and sequencing. We then create a rhythm with the child and we up- and down-regulate with the child and we create engagement and shared attention. Then we use our understanding of the child's unique biology to negotiate each of these developmental milestones we've talked about. As we get to the level of shared social problem solving, our level 4, the child becomes an active partner with us in taking initiative in solving the problems of his own biologies. As she gets to use words, she does it even better. Then we work together on tailoring to the child's unique biology.

Now we are going to take our call from Nadine. Hello?

Caller: Hello.

SG: Let me hear your question.

Caller: Hi. My question is, I'm doing Floortime with my son and in the past year he has become much more affectionate and can be engaged with us for probably like an hour at a time in Floortime, but we do a lot of sensory motor and physical type play, things that have a repertoire that he likes and is engaging for him. Anytime that he starts interacting with figures, I have a really hard time getting into his play.

SG: Because...

Caller: An example would be, he loves Buzz Lightyear and Woodie and Tennessee. They have hats that come off and on. He'll focus on the hats and he always does the same thing over and over again. Putting the hats on the head. I just need some...

SG: If he puts the hats on the heads, and you say, "I want to put the hat on Buzz' foot!" what would he do?

Caller: If you take the hat and put it on his head...

SG: No, no, what if you said that you wanted to put it on the foot. "I think this hat goes well on Buzz' foot. I'm putting it on the foot." What would he say about that?

Caller: He would probably say, "No" or he might put it on his foot, but then he would do that over and over again.

SG: But then as soon as he puts it on the foot, then your dolly says, “Can I wear the hat now? May I wear Buzz’ hat? Please, Buzz, please put the hat on me.”

Caller: He’d probably say “No.” Whatever...

SG: “No, why not?” You be him, I’ll be you. “Why not?” You be him. What would he say?

Caller: I’m him? “Because Woody is the leader.”

SG: “Woody is the leader?”

Caller: “My hat.”

SG: “Woody is the leader? Well can’t I be the leader too?”

Caller: “No, I’m the leader.”

SG: “You’re the leader? You’re always the leader.”

Caller: I guess he would just walk away and go into a different room.

SG: “Are you walking away from me? I’m so sad.” And you follow him into the new room. The dialog that we just had, with you being him and I was being you, was not repetitive.

Caller: Yes.

SG: He was coming up with fresh language, right?

Caller: Yes.

SG: Now we just had three or four verbal circles that were not repetitive.

Caller: Yes, but you’re really using the affect.

SG: Yes, you have to use affect.

Caller: This is the thing about the affect, now. He turns that into a game. In my email I had written: I come into his room and the first thing he says is, “Make mommy sad? Make mommy happy?” He is using me like a toy.

SG: So he says, “Make mommy sad” so you say, “So what should mommy do? What can make mommy sad?” In other words, challenge him to take more of the initiative. You are always challenging him. You see, he can only be repetitive if you are repetitive with him.

Caller: Well, that's what I find myself doing. Leading into these little routines that become repetitive...

SG: But the examples that I'm giving you, am I ever doing that? Am I doing that in the examples I'm giving you?

Caller: No.

SG: I'm responding to each thing you say where you are pretending to be him, with something new. So if he says, "Mommy be sad" I'm not showing a sad face. I'm not going to just enter into that repetitive game with him. I'm going to play dumb. I'm going to say, "Ok, but how? What should I do with my mouth? Can you show me?" He has to come over and make my mouth into a frown. Or if he wants me to smile, he has to come over and make my mouth into a smile. So the idea is, it takes two to tango. As long as you're not being repetitive, he can't be repetitive. But what you have to do is be impish and playful and be willing to tease him a little bit. If he does get up and leave the room, say, "Oh, I'm so sorry. I didn't mean to insult you." And go with him to the next room. You can then be more soothing for a few minutes. You're always challenging. You're always challenging to more novelty.


Caller: Ok. Can I ask another question?

SG: Sure.

Caller: Because he has become more social now in public, he'll approach strange adults, or at birthday parties he will approach adults, not so much children, and ask them to take their glasses off or take their hats off, and put them back on, then he wants to wear their glasses and this sort of thing. Some adults are fine with it and other people, they don't understand what he is saying at first...

SG: When you see him doing that, let's say you have some friends over and one was fine with it and got playful and they were having a good time together, and the other is a little put off and doesn't know what to do, you get behind the person who doesn't know what to do and you speak for them. So, you become the playful voice and you use the person as a little prop or doll. You can only do that with people you know. If you are doing it to a stranger, you may have to talk to the stranger into saying, "Well, I would like to let you play with my little glasses, but I'm going to hurry now, so I can't do it now, but thank you for asking, sweetheart" and then let the adult leave.

Caller: So rescue them.



SG: Rescue them, exactly. So with a stranger, rescue them. If it's a friend or relative, use them as a prop and you talk for them until they get the hang of it. Ok?

Well, we have to stop for now. But feel free to call back next week and we can answer more of your questions.

Caller: Alright. Thank you.

SG: Good luck.

Caller: Bye bye.

SG: I want to thank all of you for tuning in today. Next week we will meet again, and then for the two weeks after that, which will be the holidays, we are not going to have shows. Then we'll resume after New Year's. So next week we'll have our regular show and then we'll not meet for two weeks, then resume our regular shows.

For next week we are going to talk a little bit more about how to work with especially challenging children. We got into it today, but this is where I get most of my questions and so next week is going to be another segment on, and also we have a bunch of questions that have been accumulating, so next week we are going to talk a little bit more about challenging children in terms of their unique biologies, and also answer the questions we didn't get to today.

Thank you for joining us and we'll speak with you all next week.