

Web-Based Radio Show

Logical Thinking:


Discussion of reality-based logical thinking which is a huge goal for many children with special needs, but also it is a huge goal for children without special needs – for all children in order to be able to understand his or her world

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Good morning. This is Dr. Greenspan speaking. Today's subject is a very interesting one, but first I want to welcome you all to our Web-Based Radio Show and thank you for joining us this morning. Today we are going to talk about logical thinking, and I should say, logical reality-based thinking because sometimes children can be logical but not necessarily reality-based like when a child argues for having magical powers, they may make a very logical argument that they can fly because they are just like the TV character, Superman. It may be logic in the sense that Superman can fly and if they are like Superman, then they should be able to fly. But there may be some illogical premises hidden in there in the sense that the logic is based on fantasy rather than an appreciation of reality that at present, we don't have Superman in the real world, only in the make-believe world.

So today we are going to talk about reality-based logical thinking. We know that that's a huge goal for many children with special needs, but also it is a huge goal for children without special needs – for all children. Every child needs to attempt to master reality-based logical thinking in order to be able to understand his or her world. As adults, we need to have that capacity well in hand to function with our families, with our work situations, and higher educational situations and in a variety of social situations. While most adults would probably assume that they can be logical and it's very rare that someone assesses their own behavior as illogical, because almost by definition if you are illogical, you don't have the ability to evaluate yourself properly. So the person can say, "Gee, I'm behaving illogically." But almost by definition, that person is not only logical, but also pretty self aware and logical because they can identify when they are not meeting their own standards. More likely, a person who is illogical will live in the castles they create; will believe they are illogic.



For example, Mr. Jones frequently assumed that people at work were whispering about him. They were saying mean things; occasionally telling jokes at his expense. The reality was that Mr. Jones did get teased a lot because he tended to like to clown around quite a bit and sometimes not even purposefully he would knock things over, bang into things, or be socially awkward. People often couldn't tell whether he was clowning or trying. But they dealt with it, not to his advantage, unfortunately, by teasing and joking with him. He often took it in "the wrong way" as many of his colleagues said, and sometimes would get angry. More than once he quit his job only to be persuaded by his wife the next day that maybe he was overreacting and needed to reconsider, and then go back in. Fortunately, he was an extraordinarily gifted computer engineer who was much valued for his skills by his boss, and his boss took him momentary upsets and seemingly "illogical behavior" according to his boss, as just part of his genius or his brilliance and would always take him back. But Mr. Jones had difficulty with fully appreciating the subtleties of reality, particularly in complex social situations where people were joking or teasing or kibitzing a little bit. He often misread the signals. Therefore, he was "illogical" in that situation or not fully reality based. Yet in figuring out how the computer worked and designing new software programs, and being a troubleshooter for the company's large networks of computers, he was not only logical, he was gifted in his analytical capacities. As his boss described it, he could solve the problems that no one else could solve. He often was requested by other companies, in fact, when they had tough problems in their computer systems, and would go out on loan, and I should add, high fees which he brought into his company. This is not an unusual situation, however, where somebody can be highly logical in the world of computers but illogical or un-reality based in the world of subtle emotional and social functioning or in their political judgments or in their appreciation of history. In other words, logic doesn't necessarily operate at the same level in every endeavor. So rational, logical, reality-based thinking, a skill we want for all of us, doesn't always operate evenly across the board. And most importantly, it's a goal we want for our children, not just to exist but to exist in the broadest way possible. We would love for our children to be logical in all areas of their life – their social and emotional functioning, their appreciation of history and art and literature, their ability to solve computer problems, their ability to read the subtle cues in the most intimate relationships – we would like them to be able to be logical and reality based in all of these areas.


Now children with special needs have a special challenge here because when there are language problems or motor problems or other sensory processing problems,



it is a little harder to achieve a level of logic and reality. It is easier to live in make-believe worlds. For example, a child who finds the human voice noxious or painful because of the high-pitched quality of it may withdraw from talking to people and prefer babbling to him or herself and engaging in pretend play if they are capable of it. Or if they are not, simply self stimulatory activities where they can control the level of stimulation by looking at a fan or just simply aimlessly wandering around a room. Well, it is difficult for such a child to engage in reality based thinking because one of the first steps is to engage the outside world fully. In other words, to be reality based and logical, you first have to be engaged in the world outside yourself and get to know it. If that is hard for a child because of the way they process sensation or information, the pathways toward logical thinking can be hard. It doesn't mean it can't be accomplished but it may be a slower path and it may be a more difficult path and a more challenging one. There may be more roadblocks on that path. There may be potentials for more compromises either in subtle forms as in our example before of the computer programmer, or in not so subtle forms where people get fixed beliefs or rigid ideas.

So we have to understand the building blocks or the road map to logical thinking to help all children achieve this, and especially to help children with special needs achieve this goal. As I mentioned just a moment ago, once we understand this roadmap; once we understand these steps, we can help all children make progress. Not all children will make equal progress or rapid progress, but all can make progress towards this laudable goal of reality based logical thinking.

In contrast to our Mr. Jones, we all would like our children and ourselves to be the kind of individual like Mr. Smith – or I should say Mrs. Smith, just to make the examples even-handed – who is an excellent manager, understands people, can write elegant reports which probabilize about the future and consider possibilities all logically tied to facts, she can not only create a logical framework for her business plans and management plans, she can also evaluate her own biases and her own tendencies towards siding with one or another viewpoint and correct them in her written discussions. So she can tell you whether it's a good report or not such a good report or whether there are some inherent biases in there or whether she lacked information to be as thorough as she wanted it to be. She can apply these same reasoning skills to her family and to her children and to her colleagues at work. She can read their subtle signals. She can interpret even what is between the lines, not only what is on top of the lines in terms of their communications. She can do all of this in a rapid and quick




manner and even under stress, even when she is tired or overloaded with too much work. She rarely falls into the traps of becoming an all-or-nothing thinker, always thinking in terms of relative degrees of shades of gray in assessing people or looking at probable outcomes for different plans. So she is our truly gifted logical rational thinker.

That is our goal. So now the question is, what is the roadmap toward that goal? How do we help our children and our teenagers and even our young adults or middle age adults; colleagues make continuing progress towards more rational and more logical thinking that can be applied across the broad range of human endeavors, from purely academic tasks to social tasks to a variety of work situations?

Now let's look at the steps towards logical thinking. This will give us the clues of how to help all children and especially children with special needs. It begins with our first stage in development when a little baby is beginning to take in the world outside themselves, the world of sights and sounds, and remain calm. Because remember, logical thinking requires information. You have to have accurate information. So you have to be able to see, listen, and smell – basically take in the world around you. This begins in the first months of life with the baby looking and listening, smelling, and moving. If, for example, it's an older child or an adult, we only look at one aspect of something; what it looks like but not what it sounds like, or look at only one part of a problem, it's sort of like looking at just the tail of the elephant – we may not see that it's an elephant. We may describe this hanging piece of skin but not know what the whole picture is. So you can't tell the elephant by just looking at it's tail, and similarly you can't identify realistically what it is that you are trying to understand without being able to look, listen, touch, smell, feel, etc. So using your senses to take in the external world and to get a full picture of that external world is the first task. It begins early in life in the first three or four months.


The second task of logical thinking is to be able to engage the world in an emotionally meaningful way with a sense of trust and pleasure. In other words, you can have the capacity to look, listen, smell, and taste, but not use it because you don't trust the world. You are suspicious or scared of it or you avoid it. So you have to be willing to embrace the world and you have to kind of trust what you see and trust the relationships that you have with others who can provide information. So trusting, learning relationships with others who can provide information and the desire to engage the world is our second step. That is not easy for some children with autistic spectrum disorders who want to avoid the world because it is too sensory reactive or not sensory



active enough and the child is under-reactive to touch or sound and needs to be pulled into that external world. Or the child who is confused by sounds or by sights may want to avoid trying to figure out that world. So we have to work around the child's processing abilities to make the external world and the world of relationships pleasurable to begin that learning process. So the second step in being a logical thinker is being able to engage the world and learning relationships in a trusting manner.

The third stage is being able to interact with the world purposefully. It is as simple as a baby reaching for a rattle and examining it or an older child grabbing a pencil to begin to write when the teacher is giving instructions. Being able to take purposeful action on the world is a first step in understanding that world. It is as simple as needing to touch the floor to see if it's hard, to squeeze a balloon to see if it is soft. You can't figure things out unless you can purposefully explore those things. So the beginning of logic depends on purposeful action on the world. Also, purposeful action is the first step in logic because it usually leads to some reaction back. A smile by a baby leads to a smile back from a parent. A sound leads to a sound back. Touching the daddy's nose leads to a certain feeling in the fingers and maybe a sound from daddy. Squeezing the rattle may lead to a certain texture or feel or a noise. So here every action that is purposeful can lead to a reaction and that is the beginning of causal thinking before ideas even come in. It's thinking at the level of actions and this begins, actually, with emotions. It's smile to smile, frown to frown that teaches us the first step in cause-and-effect reasoning. Purposeful action with our emotions and with our sounds and with our motor system is the beginning of logic in the formal sense. That usually begins in the second half of the first year of life.

The fourth step in logic is being able to combine many purposeful actions into a pattern. We've talked about this before, like searching for a hidden toy and getting daddy or mommy to help you. Or figuring out how a little obstacle course works that you have to go over this thing and around this thing to get your goal. Or learning how to climb up the steps to go down the slide and have fun. All that requires many steps of problem solving and a number of purposeful actions towards the goal of getting down the slide, getting the toy, getting daddy and mommy to give you a big hug, stacking the blocks into a tower. All of this requires action steps, the forming of a pattern of steps, all towards solving a problem. So this is the beginning of higher levels of logic and it's the beginning of scientific reasoning, and this is the beginning of pattern recognition. So simply interacting with the child in multiple back-and-forth steps towards solving




problems together is a critical step in critical thinking. It is very, very needed and essential for higher level thinking skills.

The fifth step is being able to now add a new dimension to the puzzle. This is the dimension we often think of when we think of problem solving and logical thinking and reality based thinking. But it is actually the fifth step in our sequence and this is the ability to use ideas. Ideas are the ability to now take the problem solving interactions we have just done like searching for a hidden object or building a tower or solving an obstacle course or figuring out how to get that cookie, and putting it in the form of ideas. Now we can experiment in our minds. We don't have to simply search all over the house for that cookie, we can picture in our minds where that cookie might be. We can picture the refrigerator, we can picture the cupboard, we can picture the hidden drawer where mommy tends to put things that she doesn't want us to find. We can search in places that we are now thinking about in advance through our ideas. We can use pretend play to think. We can have the dollies finding that hidden cookie. So now ideas become a vehicle for thinking. We can combine ideas together in new ways to develop new thoughts. So ideas become a way that we can describe what we are doing. We can picture our world now and play with it inside our own heads. This creates a new level of thinking – symbolic thinking. This begins often by 18 – 24 months.

If that goes well, we then get to the sixth stage where we actually combine ideas together. This is sort of the beginning of formal thinking in the way we traditionally think about it in the adult sense where a child answers the questions such as, “Why is it dark out?” and the child can say, “Because, mommy, the sun isn't shining.” Or “Why is it cold?” “Because the wind is blowing.” So the child can now combine ideas together logically and create logical back-and-forth interactions and discussions. He is able to understand his world in a new way. This is often what we mean by rational logical thinking.


But this stage alone doesn't solidify logical thinking for a child. This stage is often reached by 3-3 ½ or 4 by most children. And by children with special needs it might occur a little later but I find can often occur when we can get answers to “why” level questions. Often we work with children with special needs with our “W” questions – who, what, and where – and they all are part of teaching children to combine ideas together with logical bridges. But when we get to the “why” level, it's really showing causality. “Why do you want to go outside?” “Because I want to play.” “Why do you



need your gloves?” “Because it is cold outside.” Then the child now is beginning to cook in a really logical way.


Now for each of these stages that we are mentioning, the child with special needs may take longer to get there from engaging in the outside world to taking purposeful action. One of the biggest challenges we have with children with special needs and autistic spectrum disorders is helping them become problem solvers in a shared, social way using multiple steps to solve problems, even before they use ideas. If that step is missing, ideas, even if they come in, won't be very useful. So often we have to get into what we call that continuous flow of back-and-forth logical interaction – searching for toys together, searching for food, and so forth. But now as we get to the level of answering “why” questions, we are getting into formal logic. But, as I mentioned before, this doesn't necessarily mean the child will be reality-based. We may have to go one more step above this traditional step.

It's always been thought by many of the cognitive researchers and cognitive theoreticians like Piaget, that once we can get the combining ideas together, once we can get to using ideas in logical ways, that we can be reality based. But reality has another dimension to it. It means appreciating the difference between make-believe or fantasy and reality. That level of thinking requires a significant emotional accomplishment just like the accomplishments for all the stages require certain emotional accomplishments which we have talked about in the past, so I won't review those now. This one, we want to bring in the emotional side of it because it is the essence of getting reality based. Think about how we establish a sense of reality as different from fantasy. To establish a sense of reality means that we have to invest the outside world; the world outside ourselves with some of our own emotions; with some value; with some interest; with some trust. Well first, how do we even tell whether an experience is inside us or outside us? How do we know whether a thought comes from in our own brains or from our mommy's brains? How do we know if what we see in terms of an apple or a pear is a figure of our imaginations – something we have invented inside – or is real? In our dreams, which is all imagination, when we eat that apple it still tastes mighty good. As one child who liked to make up stories would tell me, when she made up a story about having special adventures like going to Disney World when she didn't really go to Disney World, and I would say, “Why do you do that?” and she said, “Because it feels so good. It feels almost as good as when I really go there.” So sometimes make-believe can be almost as good as the real for some children. That's



why they may elect to live in make-believe worlds. We see children escaping into fantasy all the time.

So how do we establish this boundary between fantasy and reality? How do we make this work for children? Here are the critical steps. The critical steps are, first the child has to form relationships with others in the outside world, usually their caregivers. These others, which starts in infancy, represent external reality. So once an 8 month old is not just playing with the rattle, but playing with daddy's nose and touching it and daddy makes a funny sound, now the sound is coming from outside the child. They are getting a sense of the difference between what's inside them and outside them. When, a little later on, they involve mommy or daddy as a shared social problem solver, helping them get the toy as opposed to just playing on their own, they also are getting further confirmation of a world outside themselves, not just a toy but a person who can do things that they can't do; someone who exists outside them. When later on they do pretend play and they don't just pretend by themselves, having the animals and the dolls and making sounds and noises and setting up an animal house or doll house, but instead they do one thing – they have the little piggy go "Oink, oink" and then mommy says, "Oh, are you hungry, my little piggy, what do you want to eat?" and then the little piggy says, "I hungry, I want hay! Hay! Give me some hay!" Now there is an external voice; an external reality; another imagination besides their own imagination interacting with them. So it's shared pretend play bringing two imaginations together which establishes the difference between what is inside me and what is outside me. Then when you are having logical conversations, when your mommy is saying, "Why do you want to go outside?" it's that voice of reality coming from the outside asking you the question. It's not just simply doing a puzzle by yourself or just simply figuring out which line is longer and which is shorter, or doing math facts on a computer game. It is now a live human being asking you a question and judging your answer and saying, "Well, that's not a good enough reason to go outside. You have to give me a better one if we are going to go out and play on the slide." So negotiations, opinion-oriented discussions, any sort of back-and-forth interaction establishes that boundary between the child and the outside world. Now the more that boundary is established with emotional negotiation, the child being frustrated and angry and the parent being able to deal with it and discuss it and figure out why the child is angry and helping the child figure it out as well as calm the child down, the child who is excited and being able to interact with others while excited, and being able to interact with others while dependent or needy and have discussions about this. As you interact with the outside




world around each feeling – dependency, closeness, aggression, anger, frustration, excitement – you are establishing a boundary between what is inside you and outside you for each of these emotions. That establishes your sense of self – what is me, what is inside me, what feelings I have, dependency, excitement, anger, and what is outside me, the containing feeling of my mommy or daddy. Now if mommy and daddy are too punitive or too over-exciting, or too frustrating and can't establish that boundary in a regulated, harmonious way, it may make it harder to establish that boundary. We may want to escape back into fantasy. So a regulated, calm response to each of our different feelings in the course of the normal day is what helps us establish that reality-fantasy boundary.

This is what helps us elevate logical thinking to the next level where we can use cause-and-effect thinking now to distinguish or separate reality from fantasy. So that is a very, very important step in our logical thinking.

Now we have a couple more steps; a couple more stages in our abilities for logical thinking. Logical thinking tends to go beyond simply cause-and-effect thinking, has higher levels – there are different degrees of logic. For example, once the child can separate fantasy and reality and separate logic from illogic, he then progresses to a type of logical thinking we call multi-causal thinking, where he can give you multiple reasons for events or things happening. “It's cold outside because the sun isn't shining and because it's wintertime.” Or, “I want to go out and play because I want to go on the slide and I want to run around and I want to pick apples off the apple tree.” So when the child can start giving you multiple reasons, their reality becomes more complicated and their thinking ability becomes more complicated. The same thing with an executive who can analyze a problem and give you multiple options or multiple reasons why this product will sell or another product won't sell.


But then it gets more complicated than that. We want to progress to something we call indirect thinking or triangular thinking. This is where a child can figure out, for example, that in order to win the Revolutionary War, we had to enlist the help of France because they were the enemy of England, who was our enemy. Well, that is pretty sophisticated indirect or triangular thinking. Similarly, where a child becomes friends with little Johnnie or Susie, not directly, but becoming friends with their friend. So little Eddie wants to become friends with Johnnie but he sees that Johnnie won't return his friendship so he becomes friends with Billy who is already friends with the person he wants to be friends with. And through Billy, he becomes friends with his original goal.



In that way, he's using indirect or triangular thinking. Well this applies to math, this applies to understanding the Revolutionary War, and it applies to friendship patterns. It is a more advanced stage of logical thinking.

If that goes well, we get into yet another area of thinking, called gray area thinking or technically called gray area differentiated thinking. Here is where the child is figuring out how best to understand the subtleties of the world. How best to understand the degrees to which things are happening. For example, you may ask the child to compare his favorite characters. Let's say they are reading Mark Twain and they are comparing Huck Finn and Tom Sawyer. You may ask the child why he likes Huck Finn better or why he likes Tom Sawyer better and compare the two. They may tell you, "I like Huck Finn better because Huck Finn is stronger" or "Huck Finn is smarter" or "Huck Finn is more playful." Then he is doing what we call comparative gray area thinking. He is telling you why he likes one better than the other with some relativistic aspect to it. He is telling you one is stronger or one is wiser or smarter. He is not just saying "I like Huck Finn better because he is nice." He is actually comparing the two. But the question is, for gray area differentiated thinking, can he not only compare two things, but can he compare it in degrees? Can he say, "Well, Huck Finn is much, much smarter than Tom Sawyer but only a little bit stronger than Tom Sawyer." So in this way he can actually compare the two and tell you the degrees to which one is more important than the other. In a similar way in giving you three reasons for the Civil War, such as slavery, religion, and occupations or economic factors, can the individual tell you to what degree each was the most important factor? That the most important factor was slavery, the second most was this and the third most was this and to what degree. Well, this is getting into rather sophisticated logic but if we don't have this gray area thinking, we tend to be left in what we can call polarized or all-or-nothing thinking. We certainly see children who live in an all-or-nothing world where all they do is say, "Gee, it has to be this way, my way, or the highway" or that there is only one answer to something, not many answers with different degrees. We are all familiar with that kind of rigid thinking. We see it in politics, we see it in appraisals of history, we see it in misuses of science. We know the world is a gray area world, it is a complex world.


But how do we help our children learn to be gray area thinkers? We have to get their opinions about things and then we have to ask them the shades of gray. "Well, you want to go outside, but how much do you want to go outside? And what are your different reasons and which is your most important reason?" So educators at school



when talking about the Civil War can't just have right or wrong answers. They have to go after the child's opinion and the opinions have to be gray area opinions – looking at the relative degrees of things. In that way we stir gray area thinking.

We found that children with special needs as well as children without special needs can all become very good gray area thinkers if we work on it. Again, some children will take longer to get there and children will make varying degrees of progress. But the key thing is to challenge it. Many traditional educational approaches are going after right and wrong answers, not reasoned opinions. Those who like the all-or-nothing or the polarized approaches to education argue that you've got to know your facts, you've got to know who was president and who was secretary of state and you've got to know who was this and who was that. To be sure, you've got to know your facts, but you can recruit your facts as part of a reasoned debate. In other words, in arguing over different strategies in the Civil War, you've got to bring in your facts. You have to know your generals and know who the president was and know what the issues were. But you've got to use it in a reasoned way, not just a factual way. If you start off learning about the Civil War by memorizing dates and names, you often never get to the more reasoned thinking approach to the Civil War. On the other hand, if you learn the two together, you have a much better chance of being a thinking, intelligent, logical individual. Now you would think becoming a gray area comparative thinker is enough, that that should be sufficient. And actually, before we go onto the next stage, which will be the last one we will consider, I just want to share with you that you can actually break down the gray area thinking into two components. One having to do with comparative thinking, where you compare two things such as why Huck Finn was better or worse than Tom Sawyer, or why you like apples better than pears, or why you like cookies better than broccoli, and then the gray area part, or what I call gray area differentiated thinking part, where you actually discuss the degrees to which A is better than B or you like A more than B or one opinion holds more strongly than another opinion.

Now we certainly see this also with the children's social and emotional skills on the playground as they have a first best friend and a second best friend and a third best friend, and can tell you which quality that they like better or worse in children. Obviously to live in a complex world of adults, we need gray area thinking. Yet we see very concrete all-or-nothing and polarized thinking in many teenagers and in many




adults. So we see many of us have not progressed into gray area thinking, yet it is a goal that is very attainable by all our children if we work on it.

Again, I just want to emphasize that often we don't expect children with special needs to achieve gray area thinking because we assume they can't achieve it. But it is a false assumption, at least for some of the children. The biggest problem, I find, is the way we educate and talk to children. If we only try to script them and give them facts that they have to memorize, they are never going to learn to be gray area thinkers. On the other hand, if we have debates and get opinions and ask for shades of gray once a child is verbal where you have a good chance of getting to this gray area thinking which is a higher level of logic and a higher level of reality.


Now if that goes well, then we get to the next level. Before I talk about this next level, let me also mention that we had some callers call in before, and I think they got discouraged because we were going on a little bit long today. But we can take your calls now spontaneously. So if you want to call in and we can put you on hold while I finish the formal part of the talk, then take some of your questions. I also have some written questions from some of you that I'll read off in just a few minutes, but if you want to call in, now is a good time as I'm heading into the home stretch of the formal part of the talk. We'll put you on hold and then get to your questions. This is new because in the past we've only been able to take questions that you email in ahead of time. Now we have the electronic capacity to actually take your questions spontaneously. So you can call in to the call-in number on the website, 1-877-907-8889. That is also on your computer screen on the Floortime Foundation site for our Web-based Radio Show.

Now we have one more level to consider in our thinking capacities. That is the ability, and it is a very high ability that usually doesn't come in until the teenage years, the ability to think off an internal standard or a sense of self. What we mean by that is the ability to evaluate your own thoughts; to evaluate your own biases. This is not only the ability to have gray area thinking, but to say that after you've done an essay to say, "Gee, that was a pretty logical, cohesive essay I just did. I made my point strongly, I backed it up, I considered subtlety and nuance and I brought in all the facts available." Or, alternatively, you might say, "Gee, that wasn't such a good essay. I was a little tired and I didn't have a chance to research everything I wanted to and my logic, I think, was a little slippery in places. I'm going to have to go over this tomorrow when I'm better rested and see if I can tighten it up a bit and make my logic a little more sound." Or, "Gee, I think I was a little biased. I was comparing Huck Finn and Tom Sawyer and I was



indicating how much better I liked Huck Finn, but I think that's mostly because Huck Finn is more similar to me and my background and I think I was biased and not giving Tom Sawyer a fair shake in the description, so I'm going to try to review my analysis with less of a personal bias." Now in the emotional area, this is the time when a person could say, "Gee, I was angrier than I normally am in this situation, and I wonder why I got so mad. It's not typical for me to be that angry." This helps the child judge themselves as separate from the group. "Gee, the group is beginning to experiment with drugs or alcohol but that's not the sort of person I am, and I'm going to stick to my guns and I don't want to risk the dangers that can happen. I'll see if I can get along with my friends in spite of not going along with their drinking antics."

So this ability to evaluate yourself, to not live in the day-to-day world of the peer relationships and to have a longer view of things; to evaluate your own behavior, your own ideas against some internal standards; some internal sense of self allows you to essentially be able to judge your own thoughts and feelings and judge your own biases. Now how many adults truly have this capacity or this ability, to judge themselves or to judge their own biases? It's a rare commodity. It starts in adolescence, it is something that represents a high level of logical and reflective thinking, but it is not easy to acquire. To help our children acquire it; even children with special needs who may take longer to get there, it requires again, lots of opinion-oriented discussions. But now we add one more piece into the opinion. It's not just "What do you think about the Civil War?" or "What do you think about what I did or your mom did?" or "What do you think about this math problem or this particular scientific principle?" Now the question is, "What do you think about your own analysis? How do judge your own essay?" We are so busy telling children whether they've done a good or bad job. We rarely ask them to judge themselves. Give them criteria, give them the standards, and now begin helping them become their own judge; their own mentor. In other words, let them take over that parental or teacher or guidance function internally so that they have an internal guide. What more important skill can we give to teenagers as they enter into the adult world than for them to have that internal judgment, to judge themselves and judge their own behavior? So this becomes very, very important for academic work, or for social behavior, and for operating in the complex political and economic and social world of adulthood. Yet very few adults truly achieve this to the degree that we would like. Part of it here too, is that we don't challenge it enough. We don't ask teenagers to judge themselves; to, in a sense, grade their own essays and then compare it to how the teacher grades it. It would be a very interesting exercise in school, for example, to have




a child write an essay and then a day or two later grade and judge their own essay and then have the teacher grade and judge it and compare the two analyses. Also, you can then grade the child on how well he judges and grades himself. Give him two grades: the original and the review of his own capacities. This would be a very excellent and interesting task to engage in. So this is the ability to judge yourself, judge your own feelings, and evaluate your own feelings.

Now this develops in different dimensions as we go through later adolescence and adulthood. In one dimension, we try to extend this in the dimension of time and space. For example, in looking at it in terms of space, how well can we conceptualize ourselves and others in different spaces; in different cultures; in different settings? Can we picture what it's like to grow up with a different economic background; with a different racial background; with a different religious background? The ability to put ourselves in different settings and in different spaces; can we do this for different times, for periods of history; for the future? So can we judge our own selves and our own behavior in time and space? This is very important for advanced intellectual work – to be able to be truly reflective and to be able to move our reflective abilities and our self-evaluating abilities; our self-critical abilities across the dimensions of time and space; different cultures, different historical periods, etc. and the past, the present, and the future.


Another dimension we have to consider is can we bring in the dimension of probabilities. Piaget talked about probabilistic thinking in adolescence. Well, can we bring in this self-critical; this self-evaluative capacity in a probabilistic way? Can we consider the probability of war or peace in the next 50 years? Can we discuss that intelligently based on all the factors available to us? Can we discuss our own biases as we consider that? Can we also bring in not just the past, present and future in different spatial contexts, such as different cultures and settings, but can we also do this in a probabilistic way that looks at likelihoods of different possibilities, not just one or another possibility.

As we get older and as we move into the late teenage years and the adult years, this ability for critical thinking becomes enriched by a broader range of experiences. So we have to embrace the broader range of experiences of adolescence – biological changes, new social opportunities, more intimate relationships, changing friendship patterns, deeper and more intimate group relationships, beginning of deepening and more intimate friendships with our peers – can we progress and still keep ourselves



evaluative and self critical and self appraisal skills and our gray area logical thinking as we do this? Can we maintain these as we broaden and leave our nuclear families and move often to work or college situations and have to take care of ourselves and create this internal set of values for ourselves to guide ourselves? Can we do it as we form more intimate long-term relationships and make career or work or educational commitments that are sustaining? How do we do when we broaden our experiences further to having children and go through the stages of development with them? And how about midlife when we go through the changes of aging and changing of our perspectives on the cycles of life – no longer seeing life as infinite and omni potential, but now seeing ourselves within a limited time-space continuum? And how about the aging process as our bodies cease working as well? As we look forward to the end of our lives, to what degree can we take these broadening and deepening experiences and integrate them with our self appraisal and self critical skills and our gray area thinking? In other words, thinking becomes ever, ever more logical and reflective; ever more rational as we broaden it with a deeper range of experiences – the empathy of understanding our own children, the empathy of broadening our perspectives of the world; to be concerned about individuals in other cultures – all that deepens and ripens our sense of reality and our capacity for logic. Also, as we get into different careers we develop knowledge, or as we get into advanced education we develop specialized knowledge in different areas. That, too has to be incorporated into a logical reflective reality based framework for problem solving that involves gray area thinking and self reflective thinking of the kind we have been talking about.

So this is our journey. As you can see, logical thinking is no easy matter. Critical is the early steps of it, however. It requires getting invested in that world outside yourself, through the senses, and through trusting learning relationships, then through problem solving interactions, then through using ideas and using ideas logically, but also in reality based ways where you can separate fantasy from reality. This involves the investment of your own emotions in the relationship with others where the others represent the external reality and where they negotiate with you through interaction, not just through setting limits. Those interactions in the different spheres of emotions of life keep refining and defining your boundary with reality and keep enhancing your capacity for logical thinking. Then it advances through these stages we have been talking about – through multi-causal thinking, through triangular indirect thinking, gray area thinking, comparative thinking, and finally thinking off an internal standard and in broadening that thinking off an internal standard through the stages and epics of life.




So this is quite a journey, and it's one that we never end while we are alive and kicking. So we should all continue to be better logical thinkers and help our children become better logical thinkers. All children can progress on this journey. All children may have different pathways on this journey – some may be slower, some may be faster, some may take more side roads, but all can progress. We may not all get to the same point, but that's what makes life interesting and different. It is very important to take the journey and not create self fulfilling prophecies where the journey becomes compromised.

Now we only have a few minutes left. I took longer than I usually do, but this was a very, very important topic. What I want to do now is just take one of the questions we have that came in during the week. We don't have time for any call-in questions. The question that I would like to address is a question which is as follows:

My child, who is five years old and has become verbal, he was originally diagnosed with PDDNOS, but instead of using his words to talk to me or in talking to his daddy, or paying attention at school, he likes to just do make believe play. He is constantly talking to his dolls and his animals, sometimes babbling and sometimes making a lot of sense, but it is very hard to get him engaged in talking to us.

This is a very, very common question. We call this “escaping into fantasy.” It is much more fun for some children to live in their world of fantasy because they can control the characters, they can control the dialogue, they don't have anyone asking them hard questions like “why” or “where” or “when.” And they don't have to master new things like reading, writing, or arithmetic. So it is a fun world to be in. If they are verbal, they can entertain themselves. Some of the children, as many parents complain, talk out loud and will be babbling to themselves in church or synagogue or during school hours, disturbing other children. Here is the key. The key isn't just simply set limits, as many are prone to do and say you can't babble out loud. Then the child may just retreat and do it privately, moving his lips or thinking to himself. The key is to pull that child into the external world, starting with making it more fun than just escaping into fantasy. So join him in his fantasy world. Become a character in that world. The child says, “No, you can't come play with me, I want to play by myself” as many children do, sit across the room and negotiate. Say, “Well can I sit here?” “Yes you can sit there. No, no, sit further away.” “How much further away?” And every time you are having a discussion, every time there is a circle of communication where you are discussing how far away to sit, you are now bringing the child back into your world. Then have a character from 10



feet away saying, “Can I watch too? Can I watch you play?” Pretty soon you are the audience watching the child construct his drama. Pretty soon the child is a playwright constructing dramas and you’re clapping for him. Then you might make suggestions for different kinds of dramas the child can construct. What might turn out is a junior novelist or a junior playwright with you being the audience, but it’s now an interactive drama. You’re the audience and you’re the chorus, and you may even get to be a character in the play if you are a good enough audience. So work in from the child and make it two-way communication. That’s the way in which you achieve reality as well as logic and how you turn an escaper into fantasy into a child who enjoys reality.

Also, notice what in reality may be hard for the child and make the approach a little slower. If math is hard or if reading is hard, keep approaching it, but approach it at a slower pace with more support and more warmth. Also, set limits on screen time like TV time. And set limits on isolated play where the child is alone. Many of the children who escape into fantasy spend hours and hours and hours a day by themselves. Fifteen minutes here and there for a child with special needs is appropriate. But a child who is escaping into fantasy, we have to teach that child to enjoy interactive relationships first.

Well, I want to thank you for joining me today. I hope you enjoyed today’s discussion. Next week we are going to discuss communication. As many of you know, this past couple of weeks we have all been involved in being aware of the funeral of former president Ronald Reagan, who was called The Great Communicator. Well, the question is, can all children, even children with special needs, become great communicators? I believe every child can make progress in their communication skills. We’ll see next time that communication can occur at many, many different levels and in many, many different ways. So next week we are going to discuss the world of communication for all children and for children with special needs. So I look forward to talking to you next week as we delve into the world of becoming great communicators.

Thank you for joining us, and again I want to alert you to our new opportunity we have for calling in spontaneously during the show as well as emailing us online with your questions. So you have two choices now. The old way, which we still prefer you to do so we can schedule some of your calls and make sure, and we’ll give those of you who email, you’ll get priority so we make sure you get your calls in, but those who want to try some spontaneous calls, we have the capacity now to handle those as well and we’ll try to always have a few of those each week as well.



Look forward to speaking with you next week, and thank you for joining us.