

AUTISM AND SPEECH:

.Dr, Bronson Caruthers: I think Temple is going to talk, but let's speed up the process. Here's the address of Mrs. Reynolds. She teaches speech
Children's Hospital – Boston. 1947

It took Temple 3 years with Mrs. Reynolds to learn to talk, and as we all know she hasn't stopped talking ever since.

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For thousands of years speech has played a major role in the way humans connect to each other. Yet it remains puzzlingly elusive for many on the autism spectrum. Is it the process that's difficult or its intention? Sounding out the words or what the words stand for?

THE PROCESS

We humans, along with other warm-blooded animals, are social creatures. All of us weave a reciprocal social story that serves our particular tribe, herd, pack or pride. We react, imitate, love, scheme, bond, remember, raise and teach our young, use vocals and eye contact to connect.

But here's the difference

As far as we know most animal scenarios involve only the risks and joys of the physical world surrounding them. Long ago we humans achieved another more imaginative scenario: one that reached beyond what was actually happening to what we might make happen.

Anthropologist Loren Eiseley puts it this way:

He [man] was becoming something the world had never seen before. A dream animal—living at least partially within a secret universe of his own creation and sharing that secret universe in his head with other, similar heads. Symbolic communication had begun.

The Immense Journey, Vintage, '57 p 120

We don't think of speech as "symbolic communication," we think of it as natural. But when you break down the steps those long ago dream animals had to go through in order to share their secret thoughts with each other, it turns out that words are highly motivated, cooperative, and—yes-- symbolic.

I looked up "word" in Webster's dictionary and old Noah defines it as
... an articulate sound or series of sounds which symbolizes and articulates an idea.

To do this, first we had to develop a mutual idea (concept) of what each animal or action was for. Then we had to turn our old animal sounds (growling, barking, snarling) into unique individual vocals that would stand for (symbolize) that animal (bear, wolf, cat) or action. (chase, fight, flee)

Achieving these two steps gave us a huge advantage over other animals, but the scheme only worked if the group understood it both collectively and individually. Each human had to get the jist of the steps on his own.

Despite the odds, we accomplished it—"... *long before previously thought, in some cases more than 40,000 years...*

... We have sufficient evidence to the effect that Neanderthals possessed a symbolic culture." Dr. Joao Zilao, pre historian at the University of Barcelona

NY TIMES 2012

Miraculously, somewhere in the lost eons of pre-history, speech got programmed into our genetic makeup.

Except for those on the autism spectrum:

With autism, the knack for this inter-reciprocal act appears to be missing or skewed. (or maybe both) As a result those on the spectrum don't get what we're up to, and here's what's interesting. We with a full deck of neurological cards don't always get what they're up to.

WHAT'S NOT WORKING?

The best way to illustrate this log jam is to lay out how it does work for most of us. And for that I turn to the story of Nicholas, my youngest grandson, 20 years ago when he was a baby, just about to start talking.

The first word his grandmother heard him say wasn't "Mama" "Dada" but "oreo." He looked at us, he pointed to the cookie jar and he said "oreo.". We all laughed. But I knew that the steps of his bio-neurology were complete.

Step # 1: he understood the idea of what a cookie was for. This, in professional autism terms is called "**conceptual thinking**."

Step # 2: he understood location: he was sitting in his high chair, the place where he got things to eat. If he wanted a cookie, he sensed he better ask for it quick before someone took him out of that place. Understanding location and it's relevance to the action is called **context**.

Step # 3: he looked at us and pointed at the cookie jar. He understood he had a different mind from us and he'd have to get the cookie idea from his head into our heads. i.e. **shared information**.

Step # 4 he could put all this together and act on it. What's called **executive function**.

The bio-neurology for these steps had to develop in Nicholas before he could talk. And most crucial: he had to understand the idea of what "words" themselves are for.

When many ASD's learn to talk, their voices are often loud and robotic, as if they'd learned the act of talking, but not the idea behind it. And they tend to use words solely as a device to gain physical wants. (food, comfort, escape)

If that's how it shapes up in their heads, it raises the same old question: is the knack for symbolic thinking missing or skewed? Despite the enormous variety of ability in ASD's, this skill is so frequently and recognizably missing that we can call the lack of it "autism."

HOW DO YOU COMPENSATE FOR WHAT'S NOT THERE?

Arthur, a little boy with autism, cannot get the idea of what a shovel is for. If you ask him to point to his sand shovel, he can point to it, he knows its name. But if you ask him to point to the thing he digs with, he's lost. Though in time he may understand what his own sand box shovel is for, he cannot understand that his father's winter snow shovel serves the same purpose, and that the motorized

excavating shovel digging out a hole in the garden for a summer swimming pool also serves the same purpose.

How can he compensate for this gap?

For a possible solution I look to my daughter Temple who early on dismissed conceptual thinking with the remark “I don’t go for this flighty idea stuff. I work from the ground up.”

She compensates for her gap by memorizing visually every situation that happens to her. She refers to them as “My videos.... whenever I meet a new situation, I take out my videos and use the one that fits it best.”

She calls her system “categories” and it works amazingly well for her-- primarily because she has a phenomenal memory, instant recall, and a top notch brain to put it together. But it goes no further than the physical world around her, as does the animal scenario. If that’s the nature of her compensation, it could explain why she’s so deeply committed to understanding and teaching animal behavior.

Also, despite its value, her “categories” can only compensate for what has already happened. They don’t resolve Arthur’s problem with the shovels:

If Arthur can’t understand how three different shovels resemble each other he can’t **generalize**. Nor can he understand when others generalize. This leaves him unable to understand **relevance**. (how things relate to each other)

Look at how we, the general public, turn the word “shovel” from a noun into a verb and in the process broaden our interpretation of the word.

In WWII, when train engines ran by coal, the words to the pop song “Chattanooga Choo Choo” went:

“Shovel all the coal in, gotta keep her rollin’...”

And all families in all eras say to their children:

“Eat nicely. Don’t shovel food into your mouth.”

The visual images conjured up by these two quotes are so different that it’s hard for Arthur (who’s visual like Temple) to see that it’s not the images that relate, but the nature of what the word “shovel” conjures up in each image.

We neuro-typicals don't have to figure relevance out. Our neurology does it for us. It also allows us to communicate **intention: i.e. sharing what we intend to do with another human who might have the same intention.**

And we can reinforce our intention by combining animal communication with symbolic communication. For example:

We use battle shouts as a *physical* threat to intimidate the enemy in a fight for ownership of territory. (think Rebel Yell)

If we win, we use a spoken agreement that *stands for* our new ownership of the territory. Though both acts are intentional, the shout is *physical*, the spoken agreement is *symbolic*.

And the mix of the two is doubly confounding for Arthur. Compensation is not an easy task. Temple and Arthur, though different in their capabilities, both have to work very hard.

THE WRITTEN WORD

Polonius: What do you read, my lord?

Hamlet: Words, words, words

HAMLET – Shakespeare 1601

Oral traditions are old. Songs and stories have always traveled orally down the decades, giving families and tribes a shared identity.

Nevertheless, early on we humans craved a permanent record of our stories, and when trading with each other, found we needed something more binding than spoken agreements.* *(ancient clay tablets mostly record agreed upon business deals)

So out of spoken language we devised a series of written symbols, each standing for a particular sound. Write the sound symbols together and they turn into words. Write the words together and they become sentences.

Abracadabra. You, the reader of the sentences, are now holding in your hand a *physical* object that can be seen, and stored with other objects of value.

This trick is also stored in our genetic makeup-- that is for most of us.

Most of us understand that concepts are generalized ideas. Though ASD's are tops at visuals, there's no way for them to "see" their way to either an idea or a generalization. Speech, too, cannot be seen. It's also fraught with nuance that can defy the best of us.

But here's where abracadabra is a boon. Words when typed are no longer symbolic. They've turned into physical objects ASD's can see and understand as an animal understands his physical environment.

Might that explain why those who can't talk, can often type?

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I remember an autism conference where two middle aged ASD men were on the platform with the professional speakers. Both of them, almost totally mute, had become friends by typing to each other.

One of them now typed for us: letter by letter, the slow time-eating way a prisoner in solitary taps out a message to another prisoner. At the same time he managed to speak the words he was typing.

Yes his voice was loud and robotic. And though he may never understand that words are symbolic communication—or even what symbolism is—the longing in his words was achingly human.

"I- want- you- to-know- that- I- am- intelligent."