Helping Children with Autism Communicate Through Visual Augmentative Communication

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What is VIA?

VIA is a new approach to visual augmentative communication. When we think of 'visually augmentative communication' we often think of something like PECS (Picture Exchange Communication), communication boards, or devices that synthesize voice like a McCaw Communicator. VIA is different, building on these other existing methods to produce a teaching strategy that is more developmental, and more specifically tailored to the learning differences that impair language development in children with autism.

As the developer of the *Pervasive Developmental Disorders Screening Test*, I've spent many years focusing of what 'fails' first in the development of a child with autism. What can be concluded is that lack of oral speech is certainly not the first failure. Spoken words are inextricably linked to early non-verbal communication that are the child's real 'first words'—before the first spoken words even are heard. VIA grew out of the need identified by the PDDST research to intervene in a way that would rebuild—from the ground up—each of the communication capacities that had failed to emerge.

> **Unlike existing visual augmentative approaches, VIA is predicated on the foundations of developmental psychology and developmental psycholinguistics as well as behavioral theory.**

VIA builds these early communication capacities in three key ways: First, VIA teaches children the meaning of non-verbal communication by showing how eye-gaze, gestures, and facial expressions can enhance communicative 'signals. Second, it helps resolve problems with 'theory of mind' (the child not knowing the parent can often 'see' what he wants and 'read' his mind) by showing the child that the parent can see exactly what the child has 'in mind'. Third, by re-organizing traditional behaviorally-based curriculum for 'generalizing' language, VIA addresses problems with 'central coherence'—which is when the child has problems knowing what main features make something what it is. Unlike existing visual augmentative approaches, VIA is predicated on the foundations of developmental psychology and developmental psycholinguistics as well as behavioral theory.

Starting at the Beginning: Problems with 'Para-linguistics'

The first communication difficulty that children with autism have begins with 'paralinguistics', the part of communication that does not involve actual words, but that should provide amplification of spoken language via the message embedded in gaze, facial expression, body language, and vocal tone. Since paralinguistic deficits in autism are notable even before spoken language should be emerging, I take the point of view that construction of communication skills needs to start from the bottom up and must include teaching paralinguistics if the autistic child's words are to have the same foundation as that of a typically-developing child's language. Starting to teach words without paralinguistics is akin to starting a car in second gear; it can be done, but it requires more effort, and is a strain on the engine. Since communicating is a strain for autistic children already, why make it more difficult? We can assume that making communicating as easy as possible will make the child more motivated, more likely to want to communicate in the future

Building Para-Linguistic Training into Augmentative Communication

As adults, especially adults accustomed to being with young children, we make fairly automatic changes in how we talk to a newborn, a six-month-old, a one-year-old or a two-year-old toddler. We naturally change the rate, pitch, degree of inflection, and loudness based on the child's size, as well as how the child reacts. We also simplify grammar, more emphatically voice key parts of an utterance, and repeat key words—especially for the youngest children. This is sometimes called speaking in 'motherese' or 'parent-ese'. So, for a child at the six-month receptive language age, one might say in a high-pitched voice: 'Do you want some J-U-I-C-E??' 'J-U-I-C-E??' We talk like this to six-month-olds while waving the juice, and smiling and nodding—to show something nice is going to happen—and does—as soon as the child looks at the juice, the speaker, or between the two. This is very much how VIA works.

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The difference between how we would talk to a typical six-month-old and a child with autism at a six-month receptive language age is that we would use a photograph of the exact object that is being offered. The photo is a symbol, like a spoken word. The photo, as in PECS, is 'exchanged', but it is a social exchange—with smiling, nodding, pointing and gazing between the child and the received photo—to make the request a 'conversation', complete with verbal and non-verbal components. We add the paralinguistics so that the child becomes trained to look toward the face to see if the adult has that look that means he is about to get his request met (or not). This is what eye-contact is supposed to be about—not an isolated behaviorally-conditioned act.

The rationale for using photographs (not line drawings) is that we want the child to develop a 'theory of mind.' On the most simple level, a theory of mind means that the child understands that the parent can 'see' in his mind's eye, what the child sees in his own mind's eye. It is this mutuality that can motivate communication—as the child comes to understand that the parent can 'see' things his way. Additionally, literal photos are more immediately clear, and therefore motivating—especially when you don't have a word label in your mind to specifically associate to the object. Think sushi: would you rather order sushi from a line drawing of generic fish on a square representing rice, or would you be more motivated by a photo that shows whether your getting tuna, salmon or a cooked prawn?

Motivating Communication with VIA

In typical development, children learn multiple examples simultaneously and then actually label a prototype that quickly forms. (In developmental psycholinguistics this is sometimes called fast-mapping). An 11-month-old who begins to say 'nose' is likely able to apply it to his nose, his mommy's as well as Winnie-the-Pooh's. With VIA, many examples of the same word—though all words for things the child really cares about are pictured—to take the first step in developing a conceptual framework for central coherence.

> **VIA is seen more as a transitional strategy to provoke spoken communication, and any contextually-understood verbal effort is differentially reinforced as the more meaningful communication.**

Anyone who has a child with autism or has tried to teach such a child to talk knows all too well that it is very difficult to have a 'conversation' about anything that does not really interest the child. When we construct initial VIA cards for a young child with autism, we do so from a list of things on that child's 'reward hierarchy'—the things in life he cares about, will ask for and will work to get.

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Applying the behavioral strategy of pivotal responding, VIA cards are located throughout a child's natural environment—where ever it might be that he might request that object, action or activity. Unlike PECS, there is no blue notebook. There are also no sentence strips—as a strip of paper saying 'I want' does not add to the information already being communicated by a single photo, and only serves to make the process of successful communication more lengthy—and therefore less immediate and less motivating.

In other ways, VIA more closely models PECS, using behavior methods to prompt and shape handing over of icons, and making choices. However, VIA is seen more as a transitional strategy to provoke spoken communication, and any contextually-understood verbal effort is differentially reinforced as the more meaningful communication. This is just like when parents will accept a one-year-old's 'ba' for 'bubbles, 'binky', and 'Barney'—but will respond by meeting the request and verbally modeling the correct word. Unlike in more behavioral approaches to teaching verbal 'behavior', repeated shaping of oral approximations, 'Say it better' prompts, and paired used of vocalizations and icons when communicative intent is understood are not used in the VIA approach. This is because doing so is seen as ignoring the emerging theory of mind, just when the child should be validated for beginning to develop conversational expectations. Also, too much prompting can easily serve to decrease motivation to communicate, just by making too difficult.

For more information on Pervasive Developmental Disorders Screening Test-Second Edition (PDDST-II), click here.

References

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Siegel, B (2003). Helping Children with Autism Learn: Treatment Approaches for Parents and
    Professionals, Ch. 6, New York: Oxford University Press.

VIA training is available through Dr. Siegel (bryna@itsa.ucsf.edu) and through the UCSF early intensive intervention program, JumpStart (415-476-7385).