

Do Gifted Children Choose Their Gifts?

Leonard Press, OD, FAAO, FCOVD

Private Practice - Fair Lawn, NJ

Brigid is an 11-year-old with a remarkable gift for drawing. This stands in marked contrast with her struggle to read, a struggle so severe that she has been diagnosed as having dyslexia. She skips words when reading, re-reads the same line, and is poor at spelling.

When patients come to us with reading difficulties, we are rarely the first professional they have consulted. This was the case with Brigid, who in 6th grade was now heading to a special school that will engage her entirely in the Orton-Gillingham approach to dyslexia remediation.

Brigid struggled with any reading readiness task, evidenced by her falling well below normal on The Dyslexia Screener for both Dyseidesia and Dysphonesia. Her performance on the Visagraph was predictably stressful. We initially recorded her eye movements with Level 4 text, and although her comprehension was at 90%, she attained a grade level efficiency of 1.0. We dropped to text level 3, and obtained the same result. It was not until we dropped to text level 2 that she was able to attain a grade level efficiency above 1.0, barely rising to 1.6.

One of the tests administered to children having academic difficulties is the Beery-Buktenica Developmental Test of Visual Motor Integration, which involves the copying of geometric forms into pre-designated spaces. As an artist, this test was overly simplistic for Brigid, who scored at the 98th

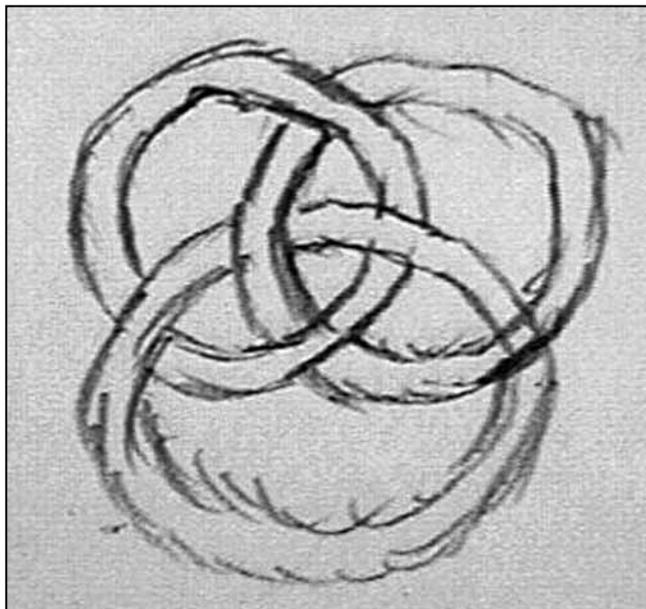


Figure 1: *Brigid's reproduction of the three-dimensional rings from the VMI.*

percentile for her age level. Her level of precision in reproducing forms is evident in the sketching of the three-dimensional rings (Figure 1).

Brigid's precision in reproduction of the Beery forms was in stark contrast with her difficulty during bi-ocular pencil sketching and tracing. On the Van Orden bilateral pencil sketch, Brigid was totally disorganized, projecting her midline well below the center of the drawing plane (Figure 2). As she attempted Cheirosopic tracing Brigid's difficulties heightened. Although she began projecting the geometric form from the left eye to the right eye in bi-ocular fashion, Brigid slipped into an intermittent suppression pattern (Figure 3). When attempting to project the geometric form from the right eye to the left eye, Brigid was less capable, exhibiting total suppression of the left eye and moving her pencil inward to trace over the image seen by the right eye (Figure 3).

Sensing her inaccuracies frustrated Brigid, who set a high standard for herself when it involved

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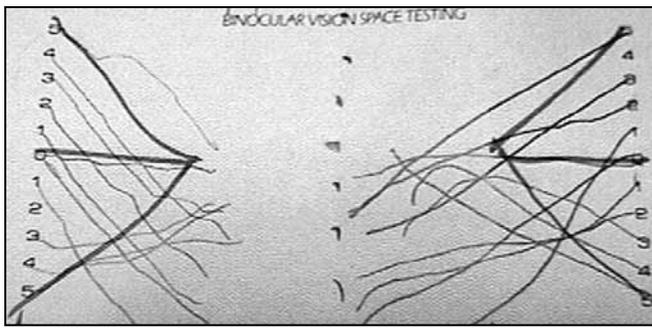


Figure 2: Brigid's Van Orden binocular behavior pattern.

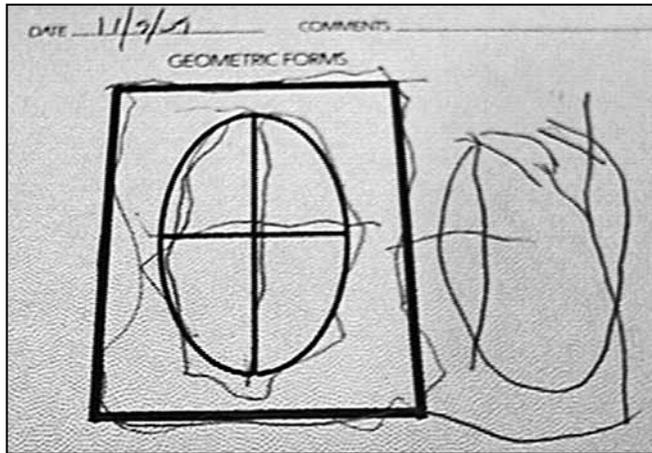


Figure 3: Brigid's Cheirosopic tracing.

sketching or drawing of any kind. She was perplexed yet intrigued by the appearance of her Cheirosopic tracing and Van Orden sketch. I explained to her that the apparent imprecision of her sketching and tracing, which she perceived to be sloppy, was due to the unmasking of her difficulty in visual tasks involving the use of both eyes simultaneously. Brigid grasped the explanation immediately, and her eyes brightened as I continued by noting that this may have something to do with why she uses her finger to keep place when reading. She had already figured out that print size played a great role in her ability not only to keep her place, but to understand the meaning of what she was reading. The smaller the print size, as in chapter book reading, the more readily she lost her place. Difficulty in coordinating the role of her two eyes in this process began to make a lot of sense.

As a bright child, Brigid intuitively understood that anything that could be done to help her keep track of words while she read might help her with reading. When a child exhibits high intelligence and maturity, I'm particularly interested in her self-assessment. I accorded Brigid the respect of probing the extent to which she would be ready to undertake



Figure 4: Brigid's sketch of a horse.

vision therapy to remediate any visual deficits. A look of concern spread over her face, and she glanced at her mother. "Go ahead and ask him", her mom said. I couldn't imagine what was on her mind at that point.

"Well..." she demurred, "I'm a good artist and I really like to draw. And I draw some things in the same steps each time." Her mother suggested that she draw me a horse as an illustration of her point. I turned over my examination sheet, handed her my pen, and invited Brigid to draw. She hastily sketched a horse's head, narrating what she was doing as she went from one spot to the next (Figure 4). When she was done she apologized that it was not up to her usual standards because she was rushing, but I was struck by its simplistic beauty. I was even more struck by what Brigid asked me next. Perhaps "floored" is a better word.

"So if I do some things here to learn how to use my eyes better for reading, will I still be able to draw like I do?" During the past year or two I've been asked this question by several children in different ways. The first that I can recall was Ryan, an aspiring scholar and athlete who was attending a private school in New Jersey. This particular prep school was known in our

area for cultivating potential baseball stars. Ryan came to me serendipitously, after his father found himself sitting next to Bob Sanet on an airplane flight and their conversation turned to sports vision. A teenager gifted at swinging a bat and stretching for throws at first base, Ryan's parents were concerned about his abilities to keep pace with the scholastic demands at Seton Hall Prep.

Through the years I've come to invite teenagers to attend parent conferences when I review the results of my evaluation. I look forward to input from teens like Ryan, who will play an integral role in determining how well the visual skills we guide them to develop will transfer to their daily pursuits. The parents of some teens often wonder how it is that their child can exhibit sustained visual attention during sports, or to nearpoint activities such as video games or texting on phones, yet not be able to sustain effort, attention, and concentration to reading. I explain how scanning pre-printed text is a significantly different visual task, requiring a significantly different visual skill set, as compared to tracking dynamic stimuli.

Ryan was interested in the extent to which vision therapy would help him to keep pace with the work load in prep school. He understood that building accuracy, stability, efficiency, and stamina for sustained nearpoint tasks such as reading would be crucial for success. Yet he was equally concerned about the possibility that by improving his visual abilities for print he might be trading off, if not compromising his abilities to hit a ball. Thankfully Ryan had his best year to date scholastically and athletically after completing optometric vision therapy.

Ryan's concern about trading off one set of his visual skills for another does not come out of left field. Stanislas Dehaene is one of the world's leading researchers in the cognitive neuroscience of language. His book, *Reading in the Brain*, carves out the role of visual analysis in the first step in reading. Dehaene introduces the profound notion that learning may to some extent involve neuronal recycling, or the re-allocation of cortical space from one purpose to another.¹ He writes:

There is no doubt that the main effect of literacy is positive: learning to read induced massive cognitive gains. If the neuronal recycling hypothesis is right, however, the brain pays a price for literacy. Reading invades the neuronal circuits destined for another use and probably brings about the loss of some of the

cognitive abilities that were handed down to us by evolution. This argument about the cost of reading rests on the observation that cortical reorganization is probably, at some level, a zero-sum game.

This in essence is what seemed to be troubling Ryan before he committed to undertaking optometric vision therapy.

The question on Brigid's mind about the potential tradeoff between art and reading was captured by Oliver Sacks in his foreword to the second edition of Thomas West's book on dyslexia.² Sacks writes:

There may indeed be a sort of reciprocity between lexical and visual powers, and West makes a convincing argument that a substantial section of the population, often highly intelligent, may combine reading problems with heightened visual powers, and are often adept at compensating for their problems in one way or another – even though they may suffer greatly at school, where so much is based on reading.

Perhaps children have posed this question about potential tradeoffs in prior years, but my mind wasn't positioned to fully process the depth of their insight. Since much has been made recently about dyslexia being a gift, or celebrating the diversity of human differences, creative children are understandably apprehensive about immersing themselves less in what they enjoy, and more in what adults ask them on good faith to accept is in their best interests. In New Jersey, where I practice, we are fortunate to have the Liberty Science Center which most school children visit and many find inspiring. When children ask me the question about trading in the visual gifts that they value for other visual gifts that educators and parents seem to value more, I now explain that the spirit of our vision therapy room is like Liberty Science Center. It is less about right and wrong answers and more about setting up conditions to explore how their vision is working under different circumstances. We will use pencil and paper, we will use letters, we will use balls and lenses and prisms and balance and movement, and probe the visual space inside their minds as much as outside their bodies.

Ultimately, it is our responsibility to be sure that the creative gifts that children have in visual thinking and visualization are not sacrificed in acquiring other visual readiness skills for reading. The challenge is to

make children like Brigid feel secure in developing better visual tools for reading, and give her enough guidance and reinforcement to use those tools in her academic environment.

References

1. Dehaene S. Reading in the brain: The science and evolution of a human invention. New York: Viking 2009;210.
2. West TG. In the mind's eye: Creative visual thinkers, gifted dyslexics, and the rise of visual technologies. Amherst NY: Prometheus 2009;11.

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