

Optometric Vision Therapy: More Than Meets the Eye

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When I first wrote a letter to Dr. Oliver Sacks explaining that I had been esotropic since infancy but had gained stereovision in midlife, he encouraged me to seek out and talk with other cross-eyed individuals. This was the last thing I wanted to do. My three childhood surgeries had made my eyes look almost straight, and I did not want to associate with other cross-eyed people and be reminded of the way I used to look. A year later, Dr. Sacks published my story titled “Stereo Sue” in the *New Yorker*¹ and one week later I was interviewed on NPR’s *Morning Edition*.² Within an hour of the first airing of the radio program, twenty emails specifically from people with strabismus and amblyopia appeared in my Inbox. By the end of the week, the number of messages approached one hundred and a steady stream has persisted ever since. My email address had not been made public, but these individuals had found me anyway. The frustrations, concerns, and desire for better vision expressed in these emails inspired me to find out more about my correspondents, to learn more about binocular disorders, and to write *Fixing My Gaze*.³

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Among the many messages sent to me were emails from other adults who gained stereovision by participating in an optometric vision therapy program. From our various perspectives as patients, we considered just what is required for a successful vision therapy program. Several principles emerged that apply to rehabilitation in general and optometric vision therapy in particular.

Throughout our lives, my email correspondents and I had developed certain ways of seeing, such as fixating with one eye and turning in the other. These habits were so entrenched that we did not know how to break them. In order to learn to see in a new way, we had to be made aware of the way that we saw and then, with great attention and conscious effort, change the way we moved our eyes. Vision therapy tools provided us with the feedback to do just that.

Only after we attained a more informative and more efficient way of seeing did the new visual habits replace the old. One friend who had deprivation amblyopia from a congenital cataract wrote the following:

Every procedure required my intense, focused, concentration. For months, I couldn’t handle doing the work when another student was in the clinic, couldn’t have a conversation, etc. ... I can’t believe in some ways -- now looking back on it how extraordinarily difficult it was for me, physically, psychologically, temporally, etc. But what a result, what a benefit.

Many ophthalmologists have told me that vision therapy for esotropia cannot work because “you can’t teach an esotrope how to diverge.” No one taught us how to diverge. Instead we learned how to fuse. Initially we could fuse only at our very close centration point,

and then, over time, we learned to maintain fusion while looking at objects further and further away. We learned vergence eye movements by incorporating them into the larger and highly useful act of fusion. The exertion of moving our eyes into fusion position, what Dr. Frederick Brock called the “fusion effort,” was critical to achieving stereopsis.⁴ Indeed, I believe that the best preparation for treating people with strabismus is the careful study of Frederick Brock’s papers, philosophy, and techniques.

With the acquisition of stereopsis, my email correspondents and I experienced a novel sense of immersion in our three dimensional surroundings and a different spatial relationship to the objects all around us. As Brock said, “A strabismic speaks a different language,”⁵ and it takes practice to learn the language of binocular vision. For example, a stereo target may be projected onto the wall and the individual with a longstanding esotropia may see that the fused virtual target is floating in front of the wall. When asked, however, for the spatial position of the target, he or she may reply that the target is both in front of but also on the wall! While practicing vision therapy procedures, I knew when my spatial sense was transforming because I felt a twinge of nausea, slightly sweaty, or even a tremor in my right hand. These are some of the same symptoms that many people experience with motion sickness which is another situation in which our spatial sense is challenged.

As we gained binocularity, we gained more than seeing the space between objects. We became aware of the space all around us. The major problem with strabismus is not the lack of stereopsis but the conflicting input coming into the brain from misaligned eyes. As we learned to coordinate our eyes, our vision became more efficient. Not only did we develop stereovision but we were able to attend to more of the visual periphery. The world became bigger, brighter, more textured, and more detailed. With these new views came feelings of deep joy and a child-like glee. I thought my reactions to my visual changes were completely “over the top” until I received emails from others expressing the exact same feelings. As one friend with strabismus wrote about

her vision therapy, “It feels as though things are in sync. I actually feel my brain looking through my eyes and it is this perfect balance.”

Changing the whole way you see the world can bring with it great joy but can also be overwhelming, confusing, and frightening. To learn to see anew, my email correspondents and I had to unlearn old visual habits and learn new ones. We had to rewire the visual circuits in our brain. Any attempt to rehabilitate ourselves is always risky and we needed a safe place to take that risk. We needed a place where we were encouraged to trust our own perceptions and take control of our vision. We needed a place where we did not feel like failures when we struggled with visual or visuomotor tasks that most children perform with ease. We needed a place where we could exclaim about our visual revelations – 3D floating light fixtures and popped-out sink faucets – without feeling like fools. We needed a place where we could express our anger against all our old doctors who had told us that our vision could not improve or that our compromised vision was “good enough.” That place must be the optometrist’s office. There’s more to vision therapy than relearning how to move one’s eyes. It requires optometrists and vision therapists^a who are skilled in vision therapy procedures and who also know how to instill trust and self-confidence in their patients. It requires doctors and therapists who know how to make their patients feel ten feet tall.

References

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^a Editor’s note: These unique optometrists and therapists can be found at the **College of Optometrists in Vision Development** (<http://www.covd.org>). If you would like to learn more about Dr. Barry’s experiences go to her *Psychology Today* blog at <http://www.psychologytoday.com/blog/eyes-the-brain> or take a look at her book (<http://www.fixingmygaze.com>). To find out the latest information about binocular vision and vision therapy go to COVD’s blog at <http://covdblog.wordpress.com>.