Kraskin & Skeffington News

Newsletter
of the
Kraskin & Skeffington Institute®
International Center for Education in Behavioral Optometry®
ICEBO

Volume II, Issue 1 April 1998

Clinical Analogies

The Importance of Underlying Skills of Eye Movements

By Robert Hohendorf, O.D.

After the visual analysis it is time to give a diagnosis and explain the visual problem to the patient. Analogies can help patients and/or their caregivers understand their visual problem in words which they can comprehend, using a situation they can more easily relate to. When eye movements are not separable from head or body movements, and you need to explain the importance of the development of gross motor and posture for good eye movements I like this one: Using the eye is like aiming a rifle.

I start by saying: Pretend I could teach you to be an expert marksman with a rifle. Suppose on the day we are ready to show everybody else what a good shot you are, I take you out to a bumpy dirt road. I put you in the back of a pickup truck and we take off speeding down the road. How many targets that you were aiming at would you hit? Would it be skill or luck? Would it be a fair demonstration of your shooting skill?

You need a good base from which to aim! Our head and body are that base for our eyes. We can keep our place on a page best when the head and body position are controlled or known. For the athlete or patient with a visual motor problem you can add: Our brain is so sophisticated that the aim of our eyes can still be maintained when the head and the body are moving. We can only do this if we learn controlled movements and have extremely fine awareness of where our body parts are at all times.

I like to finish by saying that nobody was born with these skills. Most people learn them (some better than others). Because these are learned skills they can be taught. A

program that is more complicated than just moving your eyes is needed. That's what vision therapy will help you learn to do.

If you have any good analogies you like to use and want to share, please forward to:

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Views from Outside the Field

By Robert Hohendorf, O.D.

It's funny how development and thoughts outside our own profession sometimes parallel our own specialties and thinking. I was recently reading an article on autism because of the influx of new patients with autistic behaviors in my practice. One parent left me the November 3, 1994, Autism Research Review International. Dr. Bernard Rimland, a psychologist and renowned researcher on autism, was answering some common questions and misconceptions in the Editor's Notebook Section. As I was reading his article on recovery from autism, the similarities to some aspects of vision and vision therapy struck me. He stated that there is skepticism about the effectiveness of behavioral treatment for a "Biological Disorder." He stressed we should never underestimate the "body's ability to accomplish incredible feats--given highly focused, intensive, long term training."

It sounds like he was addressing some of the same resistance that we sometimes experience with vision therapy. In my mind, defending your clinical success is a critical part of scientific success. He referred back to his 1965 paper Operant Conditioning: Break Through Treatment of Mentally Ill Children! In part it states, "No one knows why operant conditioning (now called *behavioral modification*) works, nor why the changes in behavior generalize and apply to so many behaviors." He theorized that in addition to the behavior taught, behavior modification "also teaches the child how to direct and focus his attention." He further states, "You can't learn unless you pay attention... (autistic) children, I suggest, need to learn how to concentrate, focus and direct their attention." That sounds a little like visual therapy to me.

Early in effective therapy programs for autism at the time, it was important to teach the behavior of making eye contact. The inability to use visual centering (at least personally driven voluntary central fixation) is often used as an identifying behavior of autism. I thought it was interesting that O.I. Lovaas, the prominent force behind behavior

modification therapy for autism, used eye contact as an early important skill in anchoring attention. I also thought of what help I could be in improving the effectiveness of another profession's therapy when they use the visual system as an important ingredient of their treatment program.

In that same 1965 article Rimland states, "Without specific immediate motivation... without a specially designed program which allows them to proceed in small steps, many will never learn. With operant training, the autistic child not only learns, he learns how to learn." These comments triggered a review in my mind about (1) the importance of individual motivation for vision therapy, (2) the importance of an organized hierarchical approach to vision therapy, (3) the importance of understanding the underlying processes in a vision therapy procedure, and (4) the importance of what the individual does with each visual therapy procedure. A specialist in vision therapy can have an impact on all four of these areas. The first and last we can help build, influence, and maintain. The ultimate drive must come from the individual. The middle two areas are our forte. I know of no other profession better suited to do these two areas. That is why I am so enthusiastic and proud of BABO and ICEBO. Their approach and organization of concepts provide the framework for anyone, to not only learn how to be immediately successful with vision therapy, but to also learn to use all learned and future concepts to improve their abilities. Dr. Rimland feels therapy for autism lasts because, "Once the child's behavior and attention are under control, the family and teacher can take over his further training and socialization."

Effective vision therapy is not operant conditioning, because I believe we can produce results without forced choice and the use of adversities. I feel very confident when other people from other professions, other backgrounds, and other times make remarkably similar statements that parallel the history of effective vision therapy. What a powerful tool, opportunity and responsibility we have.

Book Reviews

By Paul Harris, O.D.

Oliver Sacks, "The Island of the Colorblind", Alfred A. Knopf, 1997, ISBN 0-676-97035-4. Most of you know my love for just about anything written by Oliver Sacks. He writes with such clarity and evokes such imagery, I find I can almost always empathize with him and his patients fully as a result of his excellent writing. With the title of this one clueing me into thinking that this was going to be all about vision, I was very excited to get this right on release in its hard bound edition. Well, I'm sorry to say that I was a bit disappointed by this book. I had become so used to Dr. Sacks making me think and helping me see things in new ways that I maybe took it for granted that this book would once again set the stage for new thinking. I found it full of new information, but it didn't act as a trigger for any significant "Ah-ha's".

Richard P. Feynman, "QED -- The Strange Theory of Light and Matter", Princeton University Press, 1985, ISBN 0-691-02417-0. The Nobel prize winner at his best. This simple 150 pages makes quantum electrodynamics easy to understood. Why would a behavioral optometrist want to understand QED? Will it help decide the correct add for your next patient? No, but…. I found the book extremely insightful and full of examples which help understand much better the nature of light. So many of the problems we worked in geometric and physical optics turn out to be oversimplified special cases that don't really exist in the real world, or which only have a small wave of probability of existing. This book helped me gain insight into the power of lenses as we use them to transform the distribution of light over time for our patients. A number of the mind blowing demonstrations that Steve Cool, Pacific College of Optometry, has done for years are fully explained in this little book. Does light travel only in the path of "the angle of incidence equals the angle of reflection" off a flat mirror? Can one photon interfere with itself through a double slit diffraction slit? Feynman explains these phenomena and many more.

Roger Lewin, "Complexity -- Life at the Edge of Chaos", Collier Books, 1992, ISBN 0-02-014795-3. This book was recommended to me by Dr. Paul Lewis of Silver Spring, Maryland. I had read another book entitled "Complexity" and was happy to find another on this fascinating topic. I was very excited when first introduced to the topic of Chaos theory by Dr. Bruce Wolff when he brought the book Chaos by Glieck to my attention in one of his Skeffington Symposium papers just over 10 years ago. That book gave me insight into quite a number of aspects of what it means to be a clinician and a behavioral optometrist. Complexity theory takes off from there. It deals with many things and many levels. Significant for me have

been the concepts and ideas of self-organizing systems. Create a system that is highly complex, just enough to go past some critical level of complexity and voila, it begins to become almost alive. It begins to evolve into an organized system responding to the environment and altering its behavior in almost living ways. I have found many of the concepts applicable to my understanding of the development of the brain and the human nervous system as well as the "software" or "wetware" that is developed as a result of development.

Lewin's style is excellent and I found him easy to read. Dr. Lewis found most insightful the discussion early on, of the concept of "emergence". We talk of vision as an emergent. Lewin talks of emergent global structures as being order which arises out of a complex dynamical system. The emphasis is that often by studying only the components, one would be hard pressed to recognize that what would emerge is that which does indeed emerge. If you knew all about the functions of the subsets of all the components that go into vision, would vision be what you would predict would emerge if you didn't already know that this thing we call vision existed?