BABO NEWS

Newsletter of the

Baltimore Academy for Behavioral Optometry

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BABO & OEP Merger

After working cooperatively for a number of years, BABO and OEP began discussions on a possible merger. After two years of discussions and negotiations, BABO and OEP have decided to merge. Effective January 1, 2003, BABO and the OEP Foundation are one organization.

The process began in May 2000 when Paul Harris became a member of the OEP Board of Directors. You may remember that at that time, Paul resigned his position on the BABO Board of Directors and BABO reorganized. Bob Hohendorf, Rob Lewis, Gary Etting and Steen Saust became the new BABO officers and Board of Directors. Realizing that our products and purposes were closely aligned, and that we could be more effective working together using the resources of a combined administrative staff, merging became an obvious choice.

Continuing with the cooperative nature of the merger between BABO and OEP, Rob Lewis will become a member of the OEP Board of Directors in June 2003 when the term of Glen Steele, as President, expires. The current BABO Board of Directors will become the Curriculum Development Committee (CDC) of the OEP Foundation with responsibility for educational development for all OEP programs. The BABO core curriculum, consisting of the Art & Science of Optometric Care (BVC), VT/Visual Dysfunctions (VT 1), VT/Learning Related Visual Problems (VT 2), VT/Strabismus & Amblyopia (VT 3) and the Essentials of Behavioral Vision Care Courses will remain unchanged but will be renamed the BABO clinical curriculum.

The merger will be seamless for all of you, and you will probably not even notice a difference in the operations of BABO. We plan to continue improving the BABO clinical curriculum and offering the highest quality education possible. With all the talent available between the two groups, the expectation is that the quality of all the programs offered by the OEP Foundation and BABO will continue to be the highest quality. We feel that with the merger of the two organizations, the sum will be greater than the parts.

New Course Offering

BABO/OEP has added a new course to its course offerings: **How to Examine Children from Birth Through Age Three**. This new course will be held for the first time August 23-24, 2003, in Baltimore, Maryland. The instructor for this new course will be Glen T. Steele, OD, FCOVD. This course proves to be important in light of the recent developments across the country in children's vision. Dr. Steele will examine an infant during the course so you will have a real, live experience to augment the lecture. If you are interested in this course, please let Theresa know as soon as possible. Space is limited.

Equipment Available

If you were not at the COVD convention, then you missed the debut of the new Wayne Directional Sequencer. The Wayne Directional Sequencer is a contemporary state-of-the art version of the La Barge Electro Therapist that has not been available for quite some time. The design meets all the requisites of the La Barge, except it has less tactile feedback, using a touch pad instead of raised buttons. However, it includes visual memory training, word recognition and anti-suppression. The unit is portable and computer controlled. Both correct and incorrect scores are displayed. It comes with eight templates that include simple and complex directional arrows, light prompted saccades, color recognition, letter reversals, light sequence programs and shape recognition. A red filter is also included. An optional built-in rechargeable battery and charger is available. Additional templates are also available. However, the new "La Barge" is missing one highly significant feature of the old one. It does not offer the same level of feedback with the membrane on the new one that comes form the buttons on the original. In this aspect the old La Barge is obviously superior. For additional information contact Wayne Engineering, 847 674 7166 or Wengrg@aol.com.

Consultation Corner

by: Robert Hohendorf, O.D.

Hi everybody, Remember AJT?

Summary of visit #2

Most of the findings look improved. The Rx choice was a positive one. Some new concerns were expressed and some findings show we are not where AJT is ready to be let go, and have a stable visual system.

I recommended no Rx change and continued therapy. They again opted for a home-based program. The therapy concentrated on visual memory, visual motor and accommodative experiences.

VISIT NUMBER 3

Just when you think you are getting to understand the patient, you learn why office based therapy with a trained therapist is the preferable mode of treatment.

AJT returned on 07/31/02. He was wearing his glasses indoors (75-100% of his time). He had last done his home therapy the day before. Mom notes he rarely comments when doing the therapy, so most the therapy notes were her observations. Asked what his favorite home activity was; he stated he liked a visual motor, visual imagery task. Asked what his least favorite activity was, mom answered “eye control”.

Poor handwriting seems to be emerging as the primary concern of the mother. She has noted a slight improvement, in that it is more refined. She also states it is smaller .She also observed he leans to his left to do paperwork and occasionally covers his left eye with his left hand. Coin circles were notably smoother. Spelling is getting easier, and in CP saccades he is now hitting the peripheral targets (post it notes).

DV NO Rx DV W RX NV NO Rx NV W Rx DV Pin

OD _____ __20/25__ _____ ___20/20- _____
OS _____ __20/40__ _____ ___20/20 _____
OU _____ __20/20__ _____ ___20/20 _____

Analytical

SUBJECTIVE (Binoc Most+ Least-)

#7 OD-1.00 Dioptor Sphere__ OD 20/20
OS -1.25 DS_____ OS 20/20-

SUBJECTIVE (Largest)

#7A OD same as #7
OS same as #7
#8 3 exophori

CONTROL INDICATOR

-0.25DS OU (Habitual)

DISTANCE EQUILIBRIUM

#9 X
#10 24/6
#11 11/0

NEAR PHORIA #13B 12 esophoria
+1 00 DS 1 eso (11/1 gradient)

UNFUSED CROSS CYLINDER

14A OD +1.75 sphere **G**
OS +0.75 sphere **G**
PHORIA With 14A
15A 6 exophoria

FUSED CROSS CYLINDER

14B same as 14A
PHORIA With 14B
15B 8 exophoria

NEAR EQUILIBRIUM through +0.75 (habitual)

16 X/24/7
17 X/9/6

HAB RX OD -0.25 Dioptor Sphere +1.00 Add OU

PERFORMANCE TESTING

DEVELOPMENTAL EYE MOVEMENT TEST (**DEM**)

Vertical Score 17^{th} %ile for age 9.
Horizontal Score 6^{th} %ile for age 9.
Accuracy score 8^{th} %ile for age.
Ratio 13^{th} &ile for age 9.

MONROE VISUAL III (Visual memory screening test with motor response).

Some surprising findings!!! What would you do now?

Let me know your thoughts on the changes in findings.

Stay tuned for part 4 in the next newsletter.

Case Consults

When sending in cases for consultations with the instructors, it would be helpful if you could include your email address as well as your phone number and hours when you will be available. This would be helpful if the instructors need to contact you for some extraordinary reason. The instructors want to continue talking with you personally about your cases and do not want to just give you a cursory email answer, but it would be helpful to have your email address. We all look forward to helping you through your difficult cases and helping you expand your clinical knowledge.

Book Report

By Paul Harris, O.D.

Visual Intelligence – How We Create What We See. Hoffman, Donald D., WW Norton Company, 1998 ISBN 0-393-04669-9. This was one of those books that caught my eye while perusing the shelves of my favorite bookstore one evening before dropping in to see the latest movie. The title caught my eye, and as I skimmed various sections of the book, I knew I had to have it. Right in the Preface statements like the following hooked me;

> "Vision is not merely a matter of passive perception, it is an intelligent process of active construction. What you see is, invariably, what your visual intelligence constructs."

Hoffman works in the field of visual perception. Research on how we perceive the things we do when we look at optical illusions has led to the elucidation of a series of general principles of vision. He builds these from the ground up throughout the book with each section building a prior section. He states that the fundamental problem of vision is that:

> "The image at the eye has countless possible interpretations. For instance, each child constructs a visual world with three spatial dimensions – height, width, and depth. But an image has just two dimensions—heights and width. It follows that, for a given image, there are countless 3D worlds that a child could construct, each of which is compatible with the image in this sense: If you view that 3D world from the right place, then you will obtain the same image."

Hoffmann states, "The fundamental role of visual rules: You construct visual worlds form ambiguous images in conformance to visual rules." One such rule is the *rule of generic views* that states, "Construct only those visual worlds for which the image is a stable (i.e., generic) view." Some examples are: always interpret a straight line in an image as a straight line in 3D, or if the tips of two lines coincide in

an image, then always interpret them as coinciding in 3D. Throughout the book, the author builds and builds until 35 rules have been stated, explained and examples or demonstrations given to help the reader understand that which he is talking about.

I will admit that I was unable to see in some of the alternate views of illusions. I know you are saying…. Embedded! Okay. Get the book, work through it and let's see how you do. It will be worth the time!

Examples of the first 10 Rules of Visual Intelligence:
Premise: **The fundamental role of visual rules** is that you construct visual worlds from ambiguous images in conformance to visual rules. The **Rule of generic views** states that you construct only those visual worlds for which the image is a stable (i.e., generic) view.

1. Always interpret a straight line in an image as a straight line in 3D.
2. If the tips of two lines coincide in an image, then always interpret them as coinciding in 3D.
3. Always interpret lines collinear in an image as collinear in 3D.
4. Interpret elements nearby in an image as nearby in 3D.
5. Always interpret a curve that is smooth in an image as smooth in 3D.
6. Where possible, interpret a curve in an image as the rim of a surface in 3D.
7. Where possible, interpret a T-junction in an image as a point where the full rim conceals itself: the cap conceals the stem.
8. Interpret each convex point on a bound as a convex point on a rim.
9. Interpret each concave point on a bound as a saddle point on a rim.
10. Construct surfaces in 3D that are as smooth as possible.

Questions and Answers

by Robin Lewis, O.D.
and
Robert Hohendorf, O.D.

Q 1. Sometimes I see obvious exophoria or esophoria objectively, but get a reverse response subjectively. I still do not know how to interpret this. Any insights?

Rob: There are a number of possible interpretations. The most obvious is that the person is not able to interpret, label, or communicate the direction of movement they see. The most extreme example is the "ARC" response, but these folks tend to have a definite rather than an indefinite response.

Bob: No movement noticed when I see eye movement indicates to me suppression. It can also be poor patient awareness (which may be suppression but, doesn't have to be), or it could be problems with the patient's ability to understand or communicate what they see.

Q 2. For years the usual response I would hear when I asked the patient which way the target moves is the target moves back and forth. Then I would ask which way compared to the occluder.

More and more I have patients say they see movement. When I ask which way they respond to the right or left, but not back and forth or left and right. Since I know the target cannot keep moving in the same direction, it must move back. I am using the same instructional set I have always used. So something is changing in society, that I cannot explain, that they are unable to communicate the back and forth movement. They obviously are aware of the movement in one direction.

They should report the movement back as the occluder moves to the opposite eye. But the response is the target moves right (or left) with no report of opposite movement.

Bob: I find reverse responses more common at near than at far. I believe it is one of three things. In the case of a strabismic it may be an anomalous correspondence response. This is very rare to be discovered this way. It could also be a sign of visual confusion or again communication. The third situation at near, I found on further questioning, was that they were either describing the way the cover moves or more often the way the background moves!

Sometimes patients tell me the target is moving in the same direction with each alternation of the cover. I sometimes ask "Do you think it will move out the door (or off the wall) if we keep doing this? They will then make a comment that it moves back or be totally confused. I think (especially at far) the patient expects just the target to move. When the whole world moves they get confused and their responses either show that confusion or denial (silence).

I think that is why I find the cover test using small targets against uniform backgrounds improves subjective responses. Changing to smaller targets and more uniform background may help increase the proper subjective responses from more of your patients. Is this a figure ground, or figure ground movement problem for some?

Q 3. For years I have used the open ended instructional set for fusion findings, #9, #10, #16, &#17. Even more open since taking Behavioral Optometry Course at BABO. I am finding more patients who do not respond at all to this. Complete silence. More then ever before. Has this been your experience?

Rob to both 2 and 3 above: We are experiencing more and more of our environment in a processed way. For example, many music consumers never hear live music. They purchase music software that is compressed in order to save digital storage space and altered to make it palatable to a less refined sensory system. Compressed audio files such as MPEGs are a good example. People don't know what is missing and assume they are enjoying the full palate of musical experience. Perspective is altered based on the experience of life.

In the case of a sensation that is more obviously visual, the primary way many people experience their worlds is now virtual by means of a CRT or other flat screen. We see compressed scenes with greatly reduced z axis information. There is little of the full sensory experience, even with the biggest screen and best sound systems. This means that these discriminations do not fully develop based on disuse. It is no wonder that we get little information based on a part of the visual process that is grossly underused. I don't think this is the whole answer, but I am sure this is a part of it.

Bob: This is something I noticed more as my instructional sets became more wide open. Paul emphasizes the "pretend you are a play by play radio announcer." I can't see what you see so you need to tell me everything that changes. I've tried a number of different instructional sets over the years. I now use the statement: "Tell me if you see or feel anything changing," I emphasize the TELL ME and the ANYTHING. I will even prod a little on some patients I know are shy by injecting "is everything staying the same?" Or "I can't hear you". Maybe our old communication phrases are not as effective as they used to be so they don't elicit the responses in some of the newer and older generations like they used to. You know, like "far out" has more meaning for our generation.

The breakdown may be the patient's ability to notice, understand (the whole room is shifting, not just the target) or communicate visual change. Indifferent patients I suspect it is at least one of these at one time or another. Hope this helps. Isn't visual individuality wonderful?

Point of Information

By: Paul Harris, O.D.

Extracted from, "How Music Can Reach the Silenced Brain", Concetta Tomaino, Cerebrum, The Dana Forum on Brain Science, Winter 2002

Why Movement Responds to Rhythm

Michael Thaut, Ph.D., and his colleagues at Colorado State University suggest that the sensitivity of our motor systems to influences from sounds may have developed during human evolution so we could use the way we process what we hear to enhance our ability to organize and control our movements. Our basic auditory-arousal mechanisms (for example, our movements in reaction to a sudden loud noise) operate primarily through the amygdala in the brain's limbic system and may have originated in adaptive evolutionary processes, namely, the fight-or-flight response. In any case, the auditory system has connections to the brain stem, midbrain, and higher cortical structures, and normal motor function requires that these subcortical and cortical regions work in concert with each other.

The basal ganglia, a brain region affected in Parkinson's disease, provides a link to still other areas of the brain that connect mental processes and the initiation of movement. While the thought or wish to move depends on higher cortical processing, the actual ability to move depends on lower brain regions. If the higher cognitive processes that can initiate movement are damaged in traumatic brain injury or stroke, the requisite will to move may nevertheless get a "jump-start" by stimulating motor nerves that are still functional. Does the patterned auditory cue supplied by musical rhythms excite the more primitive motor areas first, and only then recruit or drive higher cortical circuits into action?

New evidence from studies by Wen Jun Gao, Ph.D., and Sarah L. Pallas, Ph.D., at Georgia State University suggests that learning, or at least the organization and development of cortical circuits in the brain, is influenced by patterned sensory activity, such as listening to sound clicks presented at specific time intervals. If such sensory signals turn out to enhance neural development, what role does rhythm – patterned auditory stimulation – play in the restimulation of these networks once they have been laid down? In patients like Sam, regaining physical function began on a spontaneous, unconscious level, indicating that the subcortical areas of his brain were being activated before the restoring of the higher cortical areas involved with the thought and the intent to initiate movement.