Alva Noë, Art and Vision Therapy
David L. Cook, OD, FCOVD, FAAO

What a delight to read philosopher Alva Noë’s latest book, THE ENTANGLEMENT: How Art and Philosophy Make Us What We Are.¹ We first met Alva Noë as a speaker at our 2012, Ft. Worth, COVD meeting. Since what we do is an art thoroughly entangled with philosophy and life, Noë’s insights are especially valuable. Many of us imagine that behavior and vision share an intimate relationship. As for the nature of the relationship, there are probably as many perspectives as there are practitioners who have thought about vision for a professional lifetime. Our disagreements are a testament to the elusiveness of the visual process. Our persistent diversity of thought, however, agrees with Noë’s observation that philosophers aim at “not agreement, but persuasion, that is to say, conversion. They seek to see the world anew. And this is an aesthetic project.”²

With that introduction (more on the “aesthetic project” shortly) we will consider a few of Noë’s philosophical insights that may expand the potential of vision therapy: reflections aligned with Skeffington optometry, the pictorial nature of seeing, presence in perception, and, most importantly, art, the aesthetic experience, and vision therapy.

Reflections Aligned with Skeffington Optometry

Noë’s reflections on perception often align with those of A.M. Skeffington—the optometric pioneer who from the 1920’s to 60’s inspired us to look for the total organism often obscured by the classical theories of eyeballs and eye muscles. In his last optometric congress, Skeffington philosophized: “Optometry is unique. No one knows from where it operates, nor what the operation actually is.... Yet we know the total organism is involved...”³ And, “optometry is the investigation, the development, and the enhancement of all the processes of the organism having to do with the utilization of a band of radiant energy to obtain and apply it in experience...”⁴ Noë’s writing supports that visual perception is the work of at least the total organism in the world and that the nature of vision perception remains elusive:

The work of consciousness, the work of perception, is never done and is always partial, unfulfilled, incomplete. Like the swimmer adrift in rough waters, we act—we look, we explore, we see—but what we accomplish is less the product of our agency on its own, than it is the product of our circumstances.⁵

When it comes to the visual process, Noë gets it. While the public generally mistakes vision for a picture of the eye chart and general optometrists often confuse vision with the precise focusing of retinal pictures, Noë sees past the clichés:

The retinal image is not a picture. It is not made. No one can see it. Vision is not a process in the brain whereby the brain produces an internal picturelike representation.... We are not cameras. Eye, head, neck, body, movement. We see with all that, and then only thanks to our impulses, curiosity, feeling and drive...⁶

For Noë, perception is “enacted,” that is, acted out:
For according to the enactive approach, perception ... is an organized activity of engaging with the environment making use of skills of access (concepts, sensorimotor skills) ... Experience, according to this approach, is not something that happens in us or to us; it is something we do; it is something that we make, or make up, something that we enact.⁷

Noë's words could well be interpreted as a manifesto from our own behavioral-vision tradition. Just as we see vision as “emerging” from the where and what of body, language, and world, Noë uses the word “organized,” which elsewhere he has described as the passage through time of nature and cognition emerging into purpose and (sometimes) pleasure.⁸ Noë's passage also suggests two of our most basic tenets voiced by experimental psychologist Samuel Renshaw in 1941: “seeing is learned” and “seeing is motor.”⁹ Next to these we might add Noë’s own “Consciousness is more like dancing than digestion.”¹⁰ Vision is not about a hungry brain gobbling up retinal pictures and excreting them into consciousness, but about sense, body, thought, action and emotion in the biological world.

Emotion? As we have seen, Skeffington imagined that vision emerged from the total organism, and what could be more human than emotion? Skeffington explained, “Vision operates through the two systems, that were once called convergence and accommodation.... Today one speaks of ’centering’ and ’identification.’ Arnold Gesell ... says that with the skeletal we seek and hold ... and with the visceral we define and discriminate.”¹¹ Thus, the “what” of seeing revolves around the visceral (emotion). Skeffington was doubtlessly well aware of how the visceral system rested on the emotions of fight and flight, thus involving the sympathetic and parasympathetic systems upon which accommodation rests. Noë pretty well sums up the non-accommodative components of the identification system:

“We are not neutral observers. We are affectively oriented to situations and things. Some things attract, absorb, and incite curiosity and desire, whereas others repel and resist. Every discrimination, every sensitivity, is a responsiveness to what matters. Every discernment is enfolded inside caring.”¹²

We see what we value, and we value what affects our survival for “good or ill,” whether a “baseball” or a stove’s “hot burner.”¹³ As for action, Noë’s idea of perception as something we do or act out is perhaps best captured in his earlier Action and Perception:

Perception is not something that happens to us, or in us. It is something we do. Think of a blind person tap-tapping his or her way around a cluttered space, perceiving that space by touch, not all at once, but through time, by skillful probing and movement ... Perceptual experience acquires content thanks to our possession of bodily skills. What we perceive is determined by what we do (or what we know how to do); it is determined by what we are ready to do ... We enact our perceptual experience; we act it out [emphasis in original].¹⁴

The dance of the eyes have as much to do with perceiving as the constantly changing retinal images. Noë’s words exemplify their own truth. How skillful must our probing be to read them? Examine the quote again: “perception,” “probing,” “enact.” Is the print all clear? Before answering, fixate the quote’s first word “Perception.” While maintaining this fixation, not allowing eyes to dance across the page, how clear is the rest of the quote? In truth, we can neither see nor read it. Our learned skill of moving our eyes along the lines of the paragraph are critical for perceiving the words. Just as the eye-body coordination necessary for a walk on a sidewalk does not guarantee the eye-body coordination necessary for wading through a river, a child’s eye movements on a playground hardly guarantee the eye movements necessary for wading through letters, words, and paragraphs. To a child without such bodily skills (and eye movements are without doubt bodily skills capable of surviving even quadriplegia) the passage would fall beyond perception. Such a child would be both word and paragraph blind.
Pictures in Seeing

Seeing the broader nature of vision, Noë wonders, “... why is it that despite criticism like mine... [and others] the dubious and wrongheaded pictorial conception refuses to die”? His answer: “No, picture consciousness won’t die rather because we live in a picture world... We have learned to use our fluency with pictures not only to think about what seeing is, but to see.”

Noë argues that for more than forty thousand years, “Pictures have played a role in organizing our communicative and visual activities...” He shares a passage from Brontë’s Jane Eyre written as if she were describing a scene from a painting. He references artist and critic John Ruskin who claims that we see the world much as artists may “as an arrangement of patches of different colours variously shaded.” He discusses art historian Anne Hollander, who compares making that final assessment in a mirror to taking a selfie. Finally, he quotes the humor of playwright Oscar Wilde:

*Where if not from the Impressionists, do we get those wonderful brown fogs that come creeping down our streets.... The extraordinary change that has taken place in the climate of London during the past ten years is entirely due to this particular school of Art.*

Noë makes a point relevant to working with patients: “Pictoriality is an always present background to our seeing; we take it for granted and fail to notice the ways that it shapes what seeing is like. It shapes our experience of seeing, and it shapes our theorizing about seeing.”

Take SILO, the acronym for “Smaller, In, Larger, Out.” When we converge and diverge for dichoptic targets, whose retinal information remains the same size on the retinas despite the vergences, the dichoptic targets often appear to get smaller and move inward during convergence and to get larger and move outward during divergence. This perception reflects normal sensorimotor interaction. If, we were to move a coffee cup from arms’ length toward our faces, our perception of the cup’s size would remain more or less constant even though the cup’s light information was expanding on the retina. We would quite naturally perceptually shrink the retinal light information as we converged to maintain a true perception of cup size (the cup size, after all, is perceived as remaining constant even as the light information continues to expand across the retina).

Picture vision is different. If we take a picture of two identically sized cups, one closer than the other, the nearer cup will appear larger. Vision theorists call this a “monocular cue to depth,” but such size considerations are most likely the stuff of theorists studying pictures rather than patients moving through the world. Patch-wearing pirates without easels seldom report seeing the world growing and shrinking—at least at distances within arms’ reach. The patient who reasons, “The target is getting smaller, it must be getting further away” and “The target is getting larger, it must be approaching” is more likely reporting what has been learned from pictures, not movement.

Presence

Noë begins the preface of his 2012 book, *Varieties of Presence*, with the sentence, “The world shows up to us, in thought, and experience; the world is present to mind.” Interestingly, where vision is concerned, the light from the world does not have to be stimulating the appropriate photoreceptors for us to experience the world as “present.” The mind’s eye does not necessarily require the immediacy of eye contact, only the accessibility of eye contact. In Chapter 5 of Entanglement, Noë explains:

Consider: we occupy cluttered environments. Columns, people, furniture, stuff blocks your sight. But we only rarely experience the world as closed off by such impediments; they don’t prevent us from seeing, not any more than a rocky trail stops us from wandering; we move our eyes, we move our head, we move our body, just as we adjust our footing on the trail to maintain our footing, and in this way we keep the world in touch.... [We] preserve our access even to what is not now in view.

Noë continues in Chapter 7:
I look at the tomato. I see its facing side, but I have a sense of the presence of the sides I can’t see. They are out of view, and so in that sense they are absent, but they are present to me even so; I have a distinctly visual sense of their presence. This is because they are there for me, I have access to them ... I understand, for example, that by the merest movement of my head or eyes what is now hidden can be brought into view.\textsuperscript{24}

For the vision therapist, an awareness of presence—our seeing without really seeing—improves understanding of patient interactions. For example, as we did with the earlier “blind-person-tap-tapping-his-or-her-cane” Noë quote, examine the tomato quote directly above. Again, the entire paragraph appears to be clear, but if we maintain fixation on the word “tomato” we see that most of the other words in the paragraph cannot be seen. That we have access to the entire paragraph though the movement of our eyes allows us to perceive the entire paragraph as if it were present and clear. The words don’t necessarily have to be aligned with our foveae for us to imagine them as clear.

Such presence is the reason that perceivers are seldom aware of their very different visual styles. Some perceivers walk into a room and simultaneously see the space between the furniture in a single glance. Other perceivers take fifty fixations to construct the scene from details. Because of “presence,” however, the sequential seers imagine themselves perceiving the scene simultaneously even as we watch their eyes dance about the room. Since the zone of simultaneous awareness (ZOSA)\textsuperscript{25} is linked to stronger binocular fusion, not to mention becoming one with the scene without rather than lingering in the world of stories about the scene, the therapist’s awareness of the patient’s simultaneous rather than sequential style of seeing can be clinically relevant.

We encounter another example of the importance of “presence” in the confusion between sequential versus simultaneous processing in the treatment of alternating strabismus, a condition in which the perceiver does not point the two eyes in the same direction at the same time but rather aligns the fovea of one eye and then the fovea of the other with the object of regard. In treating this condition, some therapists use a major amblyoscope, a kind of stereoscope in which the tubes containing two half views can be adjusted to align with the turned and straight eye simultaneously. Under such circumstances, some strabismic patients will perceive the dichoptic illusion that the two targets are blended. Many with strabismus, however, do not confine attention to the targets but examine the physical position of the tubes as well. When told to align the targets, they align the tubes straight ahead. For such patients, the whole instrument remains “present.” Thus, if the tubes are adjusted straight ahead, the patient will be aware of this. The patient will alternate to see the target in first one tube and then the target in the other. If asked, if the targets are “together” the patient will interpret “together” to mean “in the same direction.” The patient will if asked, however, admit that each eye’s target is in a different tube and the tubes have nothing to do with one another. Brock even reported on one very well-adapted patient, who when alternating believed that both targets were being seen simultaneously even when Brock occluded the non-viewed target for a number of seconds. The turned eye’s target remained “present” even when physically occluded. An awareness of “presence” is thus an essential tool in all vision therapy, the treatment of strabismus included.

**Style**

In Chapter 4, “Style of Seeing,” Noë examines the idea that “vision has stylistic variations”\textsuperscript{27}. To better imagine his take on “style,” a few quotes will help.

*Style shines in our lives; is our avatar, our profile picture, the visible face of our image and our schema ... Style and life are entangled, and it is this entanglement—and expression of our fundamental self-consciousness—that makes human being always something becoming unfixed, even to themselves.*\textsuperscript{28}
Thus, style cannot be pinned down. It is fragile. It varies with context and is nearly impossible to capture with words:

This is a hallmark of style. You can recognize a person from behind by the way she walks, by her style or manner of movement, but it may be almost impossible to give and adequate explanation of what it is about the walk that lets you pick it out as different from the way someone else walks ... and that is so distinctively expressive of this particular person’s way of being. You can see it, but you can’t say it. Style resists being made explicit.  

Our styles of seeing vary. There is an obvious difference between how one patient describes the world compared to another. Neither the patients nor the therapist, however, can put into words the way the content of perception varies by the instant as first one space or object then another becomes present in consciousness. The passage is also useful in reminding us that we can’t use or own style of seeing a room to imagine necessarily another’s style of seeing the same room.

Style is also embodied. Vision “refers not to something in the head—the sort of thing that could be a property of cells, or assemblies of cells—but precisely to a manner of engaging with the world”:  

The different sensory modalities, from this standpoint, are precisely distinct styles of involvement with the world. They differ one from the other as different skilled modes of embodied engagement with the situation. Indeed, from this point of view, the very contrast between perception and thought (i.e., the distinction between seeing the Statue of Liberty and thinking about it) becomes a stylistic one; it is a difference in the ways that we skillfully achieve the world’s presence, the kinds of skills we deploy, and the manner in which we deploy them.  

The vision therapist is hardly surprised to find that visual style is embodied. We see developing children passing through styles of seeing: hands leading eyes, eyes leading hands, and, finally, eyes doing the seeing without the necessity for tactual confirmation. We see the dancing eyes of patients as they process sequentially rather than simultaneously. We see heads gradually moving forward compared to bodies as patients learn to see in a myopic way. We see face turns with those whose eyes measure different powers. We see eye muscle paresis causing heads to turn and tilt. We see strabismus as existing from head to foot: the patient with a turned right eye often having a right foot slanting toward the midline; the patient with eyes turned outward often standing, sitting, or walking with feet turned outward. I imagine that most optometrists with a behavioral philosophy would agree that visual style can be found in the body even as it can be inferred from patients’ remarks.

Finally, observations that style is fragile, context dependent, out of reach of language, resistant to being made explicit “bring us back to our crucial finding. The problem of sensory modalities, and their character, is a problem of style, and so it is, finally an aesthetic problem. To address it, then, we must use aesthetic means.”  

As optometrists providing vision therapy, I would argue, this is exactly what we do. But what could vision therapy have to do with aesthetics? To answer this question, let’s turn to Noë’s words that, I believe, are most likely to allow us to see anew, to understand the art of vision therapy in a different light.

**Ecstasy, Aesthetics, Art, and Vision Therapy**

First, ecstasy. Noë exploits the term in a way that best encompasses its role in art—and vision therapy:

The aim of art is ecstasy. I don’t mean passion, emotion, or pleasure, although it may afford all of these. Its push is for release and its point is to undo the stasis that is our ordinary, our normal, and our most familiar condition. Choreography and other forms of art aim at ek-stase, the destruction of the stasis that holds us captive and that makes us what we are.  

The same could be said for vision therapy. Habitually, a patient may have a primarily two-dimensional way of seeing, eyes flitting from detail to detail, mind telling stories confusing the whole
with the sum of its parts: the doorknob is tarnished, the light-switch plate is missing a screw, the picture is a bit tilted—all this when the only goal was to navigate the room. After vision therapy, space opens up. Walking outside, the patient becomes less aware of the bird’s beak and the bee’s stripes and more aware of the layers of space separating the birds and the bees. This is ecstasy. This is escape from the habitual way of seeing into a newly perceived world. As “Stereo Sue” wrote in her memoir of overcoming strabismus to align eyes and gain 3D vision:

> When I gained stereopsis, I felt like I was immersed in a medium more substantial than air, a medium on which tree branches, flower blossoms, and pine needles floated … Indeed, when I walk in a forest these days, I pay more attention to the pockets of space between the branches and trees than to the trees themselves. I seek out particularly beautiful volumes of space and like to immerse myself in their pockets.\(^{34}\)

As described, such ecstasy is hardly reserved for patients with strabismus. Even patients who test normally on standard stereoacuity tests but nevertheless view the world piecemeal often break away from habitual, detail-laden and sequential seeing to discover a new world of perception in which an ocean of space suddenly separates the islands of detail. I have described such simultaneous seeing elsewhere.\(^{35}\)

Taking our cue from Noë, we could say that one of the gains from vision therapy is ecstasy. Sure, the escape from habit may be escape from headaches, eyestrain, and school failure, or panic attacks, but as the glow on once forlorn faces now attests, the escape is nevertheless ecstatic.

Just a Noë’s description of the ecstatic allows us to see our profession in another way, so does his take on aesthetics. For most of us, when we hear the word aesthetics we think of beauty or, perhaps, symmetry. Personally, I have long considered the aesthetic experience of art as that which wakes us up, which, like a stunning sunset or lover, startles us from habitual seeing into conscious vision. Noë’s use of the term \textit{aesthetics} comes closer to the feel of visual consciousness than the mere notion of beauty: “Aesthetic work, at the most basic level … is the effortful reorientation of ourselves … so that we may know and see…. Aesthetics names the effortful movement from seeing differently, or from not seeing to seeing, or from not making sense to making sense.”\(^{36}\)

The words could as well describe vision therapy. For example, suppose you are looking at an artwork. At first the picture looks either uninteresting, nonsensical or confusing. Suppose a friend provides context or asks questions or makes suggestions about what or how to see. Noë describes the situation as it applies to the aesthetic of learning to see differently:

> Now you ask questions and look more closely. You don’t exactly discover anything new. After all, it is not as though anything had been hidden from you on your first inspection. And as you do so, the pieces may, if you are lucky, transform themselves in real time as you make the effort to know them. Whereas before there was flatness and no structure, now there is obvious structure, and depth, and meaning.\(^{37}\)

Substitute a vectogram on a silver screen for the museum canvas and change the instruction to emphasize looking “less closely” rather than “more closely” or looking “hard and soft,” or perceiving the distance between self and screen or seeing the entire screen at once, and Noë could be describing vision therapy. He continues his explanation of the aesthetic, again applying his thinking to art even though everything he says applies equally well to vision therapy:

> By your own action, in these ways you turn the works on, so to speak, and make them show themselves: you bring them to perception. You reorganize yourself by looking at them, and at the same time you reorganize them. You have moved from not seeing to seeing, or from seeing to seeing differently. And it is this movement, this transformation and reorganization in which the aesthetic consists.\(^{38}\)

As with Noë’s description of the aesthetic work needed to embrace a work of art, vision therapy is
not about the artwork itself, not about the vectogram on the wall. Therapy is about reorganizing the patient through the “effortful movement from seeing differently, or from not seeing to seeing, or from not making sense to making sense.” Vision therapy allows the patients ready to change themselves, those who will make the effort to see the world in a new way, to see those ecstatic new worlds. Nor is the new way of seeing limited to the vision therapy room. As Stereo Sue’s description of her new perceptual experience suggests, the change becomes entangled with daily seeing as we perceive the world in a new way.

Having sampled Noë’s perspective on ecstasy and aesthetics, we are ready sample his thinking on art. For Noë, “Art aims at ecstasy and transformation. Art rocks our worlds.” As we have seen, so can the art of vision therapy.

Noë expands his description:
So the engagement with an artwork is an engagement with oneself, and also others.... [Art and philosophy] offer something like emancipation: they free us from the ways that we just find ourselves, as a matter of fact, organized by habit, by culture, by history, and even by biology.

Again, Noë might have been speaking about vision therapy. The patient begins therapy imagining that perceptual changes seen are in the world and ends up understanding that the changes are in the self, that the vectogram didn’t change, but the patient’s interaction with the vectogram did change. The nature of that change becomes recognized as more information about who the patient is, or can be. In another example, as the size of the patient’s ZOSA increases, the patient begins to compare the objects in the world to self rather than to just each other. Rather than comparing the position of an approaching car’s side and rearview mirrors, the patient compares the position of car to self. The patient thus includes self in the equation of seeing. Such patients are emancipated or freed from habitual patterns of seeing (from habitually ignoring one eye, for instance). Sometimes the visual habits owe to culture or to history. A few hundred years ago it was relatively uncommon to spend the day reading, sitting immobile before a near, flat, cognitively-loaded, stress-inducing surface without three-dimensional cues for eye alignment, the eyes dancing across the page, the mind divorced, dancing across India. As Skeffington summed it up, “The socially compulsive visually near-centered task is biologically unacceptable.” Sometimes the visual habits are biologically centered, there being a history or development of actual physical anomalies with the eyes or eye muscles themselves.

Vision, we might imagine, is the love affair between light and life. Once the therapist has learned to see the perceiver peeking out from behind the pupils, procedures, and numbers, vision therapy sessions can flow together into a work of art, a painting explored, often one viewer at a time, inspired by a curator sharing the wisdom or biases of a community. Consider Noë’s words: “The basic work of art ... is to unveil us to ourselves and to do so in ways that enable us to change, to reorganize, to become something different. Art is an ecstatic undertaking with and emancipatory goal. Technology enslaves us. Art works to set us free.”

Technology might be exemplified by mass-produced paintings of Elvis on black velvet canvases stretching out like images between two mirrors. We see each subsequent copy automatically, with no need to abandon habitual seeing, no need for reflection, exploration, or consciousness. We are enslaved by our own seeing habits (in Noë’s words, “Seeing enables and disables.”) But vision therapy, like art, can be an ecstatic undertaking with an emancipatory goal. Vision therapy can set us free from visual habits, especially those interfering with performance or the ecstasy of consciousness or of being one with the world.

Much vision therapy shifts seeing from coherence, habit, and expectation into incoherence, exploration, and creation, only to return seeing into a form of expanded coherence, habit and flexibility. For example, suppose a seer with “normal vision is viewing an iPad screen held one half meter away. The scene is coherent. Through the sympathetic and parasympathetic systems, the patient adjusts the intra-ocular muscles to focus light and clear the
screen. The patient moves the extra-ocular muscles to adjust the two retinas to keep the one screen single. The patient’s hands confirm that there is one screen. The patient’s words and thoughts agree that there is one screen. The patient’s emotions support the belief in a single screen.

Next, we place a 20-diopter prism in front of the left eye creating an illusion of a second screen displaced ten centimeters to the left. The light falling on one retina now conflicts with the light falling on the other. Doing vision in new worlds as we did vision in old worlds often leads to illusion: double vision, confusion, incoordination, scenes that no longer can be confirmed by touch. Perception breaks down, the scene becomes incoherent. Our iPad perceiver now perceives two iPad screens, one partially superimposed on the other.

While the patient’s hands still attest to a single screen, the patient’s thinking and words attest to two screens. Fighting this incoherence may recall for the patient any number of previous failures in life and the fight and flight emotions attached to those failures. Fighting or trying to flee from such disorientation, the patient may suffer from headache, eyestrain, nausea, dizziness, or constricted awareness of the world, causing further incoherence. The vision therapist typically guides the patient into reestablishing coherence, or if you will, seeing the world in a new way. Before the prism was introduced, the patient was performing vision in a habitual fashion, moving hands, eyes, tongue and lips as expected. After the prism was introduced, the patient had partially to abandon habit and expectation for exploration and creation. The patient had to create new action that restored the coherence of the world.

In vision therapy we untie the bounds of habitual seeing and free perceivers to do vision in new worlds: worlds of lenses, prisms, instruments, colored or occluded light, worlds of ballfields, classrooms, and winding roads and worlds of damaged eyes, brains, or bodies, worlds of altered or reorganized movement or emotions. We teach others to see anew.

It is certainly possible to ignore “art” and to see what we do as teaching the wiggling of eye muscles, or balancing the two eyes, or the building of sensory fusion, or the relieving of headaches and eye strain, or the control of visual attention, or the opportunity to experience success, or control of central-peripheral integration, or exchanging the therapist’s values for the patient’s values, or building coherence between speech and body and the what and where of seeing, etc. Once again, there are probably as many perspectives about vision therapy as there are vision therapists who consider such matters. But the same could probably said about art itself.

For art is also the very work of consciousness itself. Art is our most direct grappling with the aesthetic reality of our own nature and that of nature itself. Art is our surmounting of the pregiven resistance to being. Art is the achievement of the tree and the achievement of our relation to the tree. Art is the invention of seeing, and the invention of language.  

Reading Noë’s THE ENTANGLEMENT How Art and Philosophy Make Us What We Are exemplifies how philosophy can become entangled with the art of vision therapy. If you have put in enough effort to have been influenced by anything written or quoted in this review—or anything written by any other optometric thinker—then vision therapy has already been entangled with philosophy. Noë reminds us that art is so much more than decoration and that the art of dealing with vision can reach as far as art itself. He reminds us that “art and philosophy are different than science and cannot be reduced to it.” While science has provided us with many of the tools of our profession—optics, lenses, prisms, polarization, color, liquid crystal, virtual reality, augmented reality, to name a few—to constrict vision therapy to anything less than art is to miss how we can change the love affair between light and life. To think of vision therapy as anything less than art is to miss part of our potential for creating a new world of ecstasy and performance.
REFERENCES

4. Ibid.
5. Noë A. 2023, 221. The proportion of agency to circumstance in seeing always remain open to argument. On the side of circumstance, Noë refers to the seemingly random nature of retinal rivalry, ambiguous figures, and even the perceptual fluctuation while walking in a forest to stress the role of circumstance in our seeing. The trained perceiver, however, can influence whether either eye or both are being used; thus, retinal rivalry can—to a great extent—be controlled. Similarly, taking fixation off automatic can at least partially control perceptual rivalry of ambiguous figures: See Cook D. THE SHAPE OF THE SKY Eye Games and Seeing Stories for Discovering Depth in a Flat World. Timonium, Maryland: Optometric Extension Program Foundation, Inc., 2019, 96-98.
13. For a discussion of “affordances” or opportunities for action, both good and ill, see Gibson JJ. The Ecological Approach to Visual Perception. New York: Psychological Press, 2015, Chapter 8.
16. Ibid.
19. Quoted in Noë A. 2023, 44.
20. Noë A. 2023, 44.
21. Some imagine that perception is a reflection of brain states. If this is true, then the phenomenon of size constancy suggests that the perception of a consistently three-inch coffee cup approaching the face can be instantiated in an infinite number of different brain states. Noë’s enactive model of sense, action, and world makes better sense, not to mention better action in the world of the vision therapy room.
27. Noë A. 2023, 63.
30. Noë A. 2023, 68.
32. Noë A. 2023, 70.
42. Noë A. 2023, 146.
44. Noë A. 2023, 223.
45. Noë A. 2023, 201.

AUTHOR BIOGRAPHY:
David Louis Cook, OD, FCOVD, FAAO
Marietta, Georgia, USA

For over 40 years, David L. Cook, OD, FCOVD, FAAO has limited his Atlanta practice to vision therapy. An American Academy of Optometry Diplomate in Binocular Vision and Perception, he has authored When Your Child Struggles, Visual Fitness, and The Shape of the Sky as well as the novel The Anatomy of Blindness. His articles on vision therapy have appeared in the peer-reviewed journals of the American Optometric Association, American Academy of Optometry, College of Optometrists in Vision Development, and Optometric Extension Program Foundation. He has lectured around the world on vision therapy and received the A.M. Skeffington Award for outstanding contributions to the optometric literature on vision therapy.