Viewpoints: The Value of Observation

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ABSTRACT

Normally clinical practice is not done under the kind of controlled conditions necessary for research. Optometric clinical practice utilizes both the art and the science of the profession. Accordingly, it is incumbent that the practitioner not only utilize standardized tests but also develop excellent observation skills.

Clinical observations are often first order data for research. Families of observations are necessary ingredients for the development of syndromes. The ability to make observations is necessary to see and understand the differences in patients, to see the unexpected. Often an observation is the critical aspect to make sense out of what doesn’t “readily fit.” Observations provide a connecting link between the reality of life and testing results both for the patient and the examiner. Certainly they are a necessary step in the advancement of optometric clinical care, as in any other scientific endeavor.

Keywords: observation, clinical testing, standardized tests, syndromes, clinical judgments

As a youngster living on a farm in Minnesota, I recall a visit from our family physician, a very keen clinician. Because this incident occurred during the depression, a physician was called to our house only if there appeared to be a life-threatening illness. My younger sister, who had a history of pulmonary difficulties, was having difficulty breathing and spiked a temperature. When the doctor entered our home, and while still in the kitchen, he sniffed and proclaimed, “Measles.” He then proceeded to her bedroom and did his series of tests. While she had no red spots at the time he diagnosed her as having measles and pneumonia. His diagnosis of measles was confirmed when the spots appeared several hours later.

Later, when I was learning child development, I had the opportunity of studying under a very perceptive pediatrician, Dr. Frances Ilg. Dr. Ilg was a stickler. She demanded that standardized tests be done in the prescribed form, even to the color of paper used. At the same time, I was awed by her powers of astute observation when examining and evaluating a child. Although she used standardized tests, the molding and understanding of the results from such tests were formed by her observations. She was able to capture the essence of the inner child.

I relate these two experiences to illustrate that effective clinicians use both standardized tests and observations. There is a need to depend on standardized tests, using information from past experience both from self and others. At the same time, there is a need to make observations, to develop clinical syndromes and to look to the future. Observations help one to understand many of the nuances observed during standardized testing. A keen clinician uses all of his observations, some of which he or she is not even aware.

It is not unusual to encounter the idea that to be scientific, one should mistrust clinical observations. Webster’s dictionary defines “observe” as follows: “to confirm one’s action or practice, to inspect or take note of, to see or sense especially through directed
careful analytic attention, to come to realize or know especially through consideration of known facts.” The Dictionary of Visual Science defines the word “clinical” as pertaining to findings of a routine examination and pertaining to observations of symptoms and course of a disease as opposed to findings obtained under controlled conditions.

Clinical observation is not done under strictly controlled conditions but demands directed careful attention within the context of both known facts and inferences. A good observer is aware of both the “expected” responses as well as those which are different. In behavioral optometry we are attempting to gain an understanding, a visualization of how our patient actively controls visual processing and sees. This requires the need to recognize and make note of facts or occurrences (often using measurement with instruments) as well as judgment or inferences from what one has observed or perceived.

Accordingly, observations are part of both the art and the science of clinical optometry. All standardized tests and measurements begin with the first order data; someone making an observation or even acting on a hunch. As the observation is repeated and seemingly confirmed, an hypothesis can be structured. Standardized tests and measurements result when the hypothesis is not denied, thus allowing one to sue the test (and hypothesis) until proven otherwise.

I recall an observation when I was in optometry school that caused me some difficulty. My professor in physiological optics stated that the difference between normal seeing and strabismus is that the strabismic was monocular, i.e., used only the straight eye. I had been working with a youngster who was a constant esotrope. When I asked him to look at my pen and reach up under it and touch the pen, he was accurate. However, when I occluded his turned eye, he could not locate the pen (in fact, accuracy was better with the turned eye than the straight eye). I confronted my professor with this observation, and suggested that a strabismic individual was still using both eyes. The incident got me into a predicament with my professor. He could not accept my observation as being accurate because it would have required him to come up with a different hypothesis.

The academician is more likely to rely on standardized tests in clinical practice. This orientation comes about because he or she is (1) responsible for teaching people how to become clinicians, and (2) is more likely to be engaged in research and dependent upon research results in the daily tasks of teaching and writing.

The student clinician is dependent on an examination routine. As the clinician gains experience and competency, he or she develops the ability to make observations. The experienced clinician will divide his attention with a delicate balance between anticipated test results and ongoing observations.

A keen clinician is an expert at using standardized tests, but is not a slave to the generalized interpretation of the tests. When things “don’t fit,” he questions both the results and the theory upon which he test is based. This is because he is an expert at not only making observations but, more importantly, at asking what the observations mean in terms of the patient’s health, behavior, and well being.

I recall a situation when I was teaching at the Southern College of Optometry. A student asked me to consult on a case. The youngster had been diagnosed as cortically blind as a result of an embolism. The student noted that it was impossible to get any clinical findings on this blind patient and wanted to dismiss him. When I entered the examination room and began to talk to the boy, he moved his head, depending upon where I was standing. This indicated he could generally localize, if not by sight, at least by sound.

To explore further, I asked the patient if he could tell when my Finhoff Transilluminator was on or off. He identified the presence or absence of light. The student had informed me that he could not localize the objects. I then asked him to reach for the light. Indeed, he missed the light. However, I made a critical observation. He reached exactly in the direction and orientation of his visual gaze!

I spent some time getting him to recognize the difference between seeing the light versus looking at the light. Then I again held up my light in a different part of his field. I asked him to look at the light. After he did this, I asked him to touch the light. Lo and behold, he did it with both dispatch and accuracy. After six sessions of vision therapy, he was achieving 20+ lights in a minute on the Wayne Fixator, guiding the other students across the street at his school, and demonstrated a visual acuity of 20/120. The observation I made was that the patient demonstrated an intact ambient visual process, even though he had impaired focal vision.3

Both the art and the science of clinical practice depend upon the clinician’s ability to make observations and organize, relate, and project consequences. Unlike
the researcher, the clinician usually cannot wait until the standardized experimentation is accomplished. He or she has to act on the basis of the known experience and ability to globally understand what is going on with the patient. Neither the clinician nor the patient has the luxury of waiting until controlled studies are conclusive. In practice, one often has to make tentative decisions from unproven observations.

Using the example of the “cortically blind” boy, the tentative decision was that the youngster could use vision for localization. I did further testing to investigate this potential, as well as guide the development of a treatment plan. To accomplish this, I had the boy look at my hand and give me “five,” a task he could do readily and accurately even as I moved. I repeated the procedure, using both base-right and base-left yoked prisms. His responses to the prisms were consistent with the direction of the prismatic displacement. His hitting of my hand was appropriately displaced to his left and right sides. My tentative observation was confirmed. He was capable not only of responding to visual input for orientation, but also made appropriate shifts with optical alteration.

I believe that a major characteristic of a “master clinician” is that he or she is willing to put his decision-making ability on the line. The clinician doesn’t just depend upon what others have said; he trusts what he sees and begins to see more clearly what he trusts. Frequently he makes observations and responds to an action or behavior because of both figure (what is perceived at a conscious level) and ground (what is reacted to at a subconscious level).4

I recall early in my career that I was bothered by an observation I made while doing Bell Retinoscopy with a patient who manifested hypertropia and exotropia. Using ACA theory (a concept based on standardized tests), I should anticipate the use of minus with exotropia. But my retinoscopy indicated an increased “with” motion and exotropia as the bell approached the patient. Because of this observation, I repeated the test, using 1.00 spheres. Because the reflex was brighter, alignment better, and the motion shifted into the expected “against” motion, I prescribed Plano with an add. After 16 half-hour sessions of therapy and plus lenses, this patient recovered good ranges of stereopsis and binocularity.5

To develop efficient observation skills, a clinician must take an additional step. He should take time to review and gain insight into his own actions and reactions. Often this takes place only after the fact, after the individual goes back and reviews an experience while attending to the logic of his actions. I have often used a quotation of A. N. Whitehead, namely: “We cannot think first and act afterwards. From the moment of birth we are immersed in action, and can only fitfully guide it by taking thought.”6 Introspection is the utilization of fitfully taking thought to help guide future actions.

In 1971, at the University of California, Irvine, I conducted a summer course in vision perception. I started each afternoon working with 12 first-graders for one hour in front of the university students. I had a secretary keep brief notes of what happened during each session, coding what each child did. Before reviewing the hour with the university class the following morning, I would spend two or more hours each evening reliving the session before presenting the concepts and significance of the children’s actions (and my reactions) to the adults. Although very demanding, I found this experience invaluable. I became aware of how much I was reacting to and directing my work with the children by using instinctive logic (subliminal observations).

I can identify two important factors in my attempt to develop improved ability of observation. First, I relinquished my mind-set of keeping an intellectual control on my observation process, a process which accumulated a collection of many interesting bits of information. I experienced renewed success after I was able to relax and allow my vision to take over and direct my observation process. This shift resulted in rapid progress in accomplishing a more holistic view and understanding of a patient’s behavior.

Second, as a result of making more pertinent observations, I came to realize that because an individual fails to perform a task or test does not necessarily mean that he or she does not have the learning, abilities and maturation required of the test. Often when the individual can be induced to trust visual observation and do the task in a relaxed manner, he can perform what he could not have accomplished previously. I have frequently seen this phenomena related to convergence ability, eye-hand coordination, and even in a child’s ability to read. This is valuable information both in terms of arriving at a prescription and avoiding endless time developing lower level skills. As an example, it would be unwise to spend time teaching a child to converge, diverge, or read if and when the desired behavior became manifest just by using a procedure or a lens prescription.7
A clinical example might be helpful. A 4-year-old esotropic girl, who was referred to me for care, had been diagnosed by two previous optometric practitioners as having an accommodative strabismus. During my eye tracking and locating testing, I noticed that when she reached for something with her habitual lenses (+2.50 OD and +3.50 OS), she would increase the turn of her right eye. Because of what I had previously observed in quality of retinoscopy reflexes, I again tested her reaching skill, first using no lenses, then with +0.62 OU, and lastly with +2.00 OU. I observed that only with the +0.62 spheres was she able to straighten her eyes during the act of reaching, but turned in again when she found the target. I assumed that she obviously knew how to straighten her eyes even though she only did it momentarily. I prescribed the +0.62 spheres for constant wear (even though she measured more plus at distance) along with once-a-week in-office therapy. She was straight over 75% of the time within one week. After six months she was binocular, demonstrated stereopsis, was straight over 95% of the time, and knew when her eye turned. Further, she improved in all performances, including reading and school. If I had limited my examination only to standardized tests, I doubt whether I would have recognized the importance of my observation, namely that the lens which changed her active motor performance was other than the measurable lens via retinoscopy.

While standardized tests can be thought of as the raw material of an examination, observations are the mortar that brings form and life to the examination. People who depend only on standardized tests wait until all data is collected and analyzed before making a decision. While on the surface this seems safer, I find that the examination most often has to be honed in midstream. And the clues for doing this are good observations. Like the physician who proclaimed “Measles,” the good observer must be relaxed, trusting, and responding naturally to his experience. The value of observation is that it provides the opportunity for continuous growth and stimulation. Each day brings a new challenge and new opportunities both for the optometrist and for the patient.

In behavioral optometry, we are focused on producing changes in vision performance. Observations have helped me to determine which lenses help make visual motor changes. Now that I have made this observation, a literature review confirms the view that adaptive changes occur only when a subject changes his visual motor action and reaction to what he is experiencing. Thus my observations have led me to make a tentative hypothesis which should be tested using standardized methods. The hypothesis is that the determination of a lens or lenses to promote visual adaptive changes is best judged in terms of motor response changes.

Behavioral optometry is one of the more fertile fields for making and utilizing clinical observations. This is because it is on the forefront of both developing and applying new knowledge. For the clinician to be consistently successful, he must be good at using standardized tests and be able to develop and employ superb observation skills. The goal of behavioral visual care is to enhance the visual observation abilities of the patient. At the same time, the optometrist becomes more effective as his visual observation ability improves. The therapy room is an ideal laboratory to stimulate and enhance observation skills. Hence, my favorite place is the optometric vision therapy room, a fertile ground to make observations and gain insights.

References