The Art of Observation and the Observation of Art: Zadig in the Twenty-first Century

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Astute observation is a fundamental component of the art of medicine. Yet most schools and residencies offer little formal teaching of this skill, with some outsourcing the entire subject matter to art museums and instructors. Curiously, it was nineteenth century medicine that may have provided the conceptual framework for what is now known as *Visual Thinking Strategy*, the technique used by many art-based programs in order to teach observation. We suggest that the time is ripe for medicine to regain ownership of the teaching of this skill, not only because it may enhance clinical care but also because only the eyes of a skilled physician can best interpret crucial medical details. To this end, we shall revisit both the method of Zadig, which William Osler practiced and taught to his students, and its application to the observation of art first pioneered by the Italian physician Giovanni Morelli. As an example of this skill, we shall use focused observation to decode a fifteenth century portrait that hangs at the Philadelphia Museum of Art, thus turning a seemingly nondescript Renaissance painting into a treasure trove of personal, social, and medical information.

KEY WORDS: observation; medical humanities; physical diagnosis; art.

J Gen Intern Med 33(12):2244–7
DOI: 10.1007/s11606-018-4666-5

> You see, but you do not observe. The distinction is clear. (A.C. Doyle, *A Scandal in Bohemia*, 1892)

> You can observe a lot by watching. (Yogi Berra, *The Yogi Book* p. 95, 1998)

Prior Presentations *Presented in part at the annual meeting of the American College of Physicians, April 21, 2018, New Orleans, LA*

Received March 9, 2018
Revised July 13, 2018
Accepted August 29, 2018
Published online September 17, 2018

BACKGROUND

A casualty of today's high-tech and time-pressured medicine is bedside observation, a time-honored skill that has been the hallmark of our profession since its beginnings. This loss stems from readily available diagnostic technology, which in turn has caused physical exam to become almost obsolete. This approach is expensive and may even miss diagnoses, but the result is that today's medical residents spend 40% of the time observing computer screens and only 12% observing patients.[1] The repercussions on diagnoses, costs, and skills are hard to estimate but likely significant,[2] since "to educate the eye to see, the ear to hear and the finger to feel takes time."[3]

Visual arts depend upon attention to details, and thus it is not surprising that artists have often portrayed physical findings much earlier than their medical counterparts understood the clinical implications. For instance, the first description of congenital syphilis was not by Hutchinson in 1856, but by Rembrandt 200 years earlier.[4] The sculptors who created the busts of Emperor Hadrian carved his earlobe crease 1850 years before Dr. Sanders T. Frank first reported it.[5] Nevertheless, artworks that can tell a human story and also inform us of a possible medical condition are rare. We recently stumbled upon a Renaissance portrait that when carefully observed not only reveals a great deal about the social context of the sitter, but might have even been the first description of an important disease. It also gives us a chance to both demonstrate and review the power of attention to details.

AN EXERCISE IN OBSERVATION: A FIFTEENTH CENTURY PORTRAIT

The subject of our investigation is "Portrait of a Lady," a three-quarter view oil-on-panel that hangs in the European section of the *Philadelphia Museum of Art.* It has been attributed to Jacometto Veneziano, a Venetian painter from the second half of the fifteenth century, and it depicts a middle-aged woman starkly outlined against a black background (Fig. 1).

Since the eye usually sees what the mind already knows, a trained physician would probably first notice a series of physical findings, like the intense erythema that covers the sitter's

Figure 1 "Portrait of a Lady" attributed to Jacometto Veneziano, c. 1470s. Recto. Oil on Panel. Philadelphia Museum of Art, John G. Johnson Collection, 1917. Cat. 243. www.philamuseum.org.

nose and cheeks but spares the suborbital areas. This could be rouge, since makeup was often used at the time. Yet, the fact that the redness also extends to the nose makes it more likely to represent the butterfly rash of lupus. The rash might also indicate rosacea, but the lack of papularity, dilated cheek vessels, and overall patchy appearance makes this diagnosis less likely. The receding hairline and wispy red hair further support the possibility of lupus. Alternatively, alopecia and a skin rash might also suggest secondary syphilis, but the painting has been dated to the 1470s, while syphilis did not appear in Italy until 1494–1495. Hence, lupus is more likely. Also suggestive of this condition are a perimandibular fullness (that may indicate an enlarged parotid gland) and a swollen right eyelid, possibly from an inflamed lacrimal gland. Both would suggest Sjögren's syndrome, which is present in 20% of SLE patients.[6] In addition, there is a noticeable goiter, which may not only explain her heavy-set build and thin eyebrows (missing lateral third?) but also remind us that autoimmune thyroid disease is found in a third of SLE patients with secondary Sjögren's.[6] Lastly, the intense redness of auricle and tip of the nose may suggest lupus-associated polychondritis (RP).[7]

In summary, if this painting portrays a lupus patient, it would be the very first description of the disease, predating Cazenave's report of *lupus érythémateux* by almost 400 years.[8]

The artwork presents other unusual features, but detecting and interpreting those is more difficult, since it requires knowledge of Renaissance portraiture and Venetian history. For example, her dress is simple and lugubriously black, which is unusual for the High Renaissance when people's clothes tended to be brightly colored. She wears a plain *gamurra* cut so low as to show a bit of décolletage. Beneath there is a plain white shirt, not the sophisticated silk *coverciere* that was de rigueur as a modesty piece. She wears no jewelry, which is unusual for portraits of the time. In fact, her only accessory is a yellow scarf. Scarves were not uncommon in paintings of married women, but were invariably white. Hers is yellow, a color that was strictly avoided in late fifteenth century Venetian portraits, since it was considered symbolic of shame and identified with Jews and courtesans. Wearing a yellow scarf had been required of Venetian prostitutes since 1416.[9] Although not strictly enforced, this practice had created a sort of trademark, so that the presence of a yellow scarf would have reminded a contemporary viewer that the subject was likely a prostitute.

By way of context, early sixteenth century Venice had 11,654 tax-paying prostitutes, close to one tenth of the population.[10] This was a source of ambivalence within the city's culture, as evidenced by the fact that many prostitutes were accused of witchcraft during the plague of 1575–1577.[10] Yet, the trade represented an economic mainstay, a touristic attraction, and a symbol of Venice to surrounding countries. Prostitutes were mandated by government to maintain a simple and identifiable dress code, with neither silk nor jewelry.[10] As Cesare Vecellio wrote in his 1590 *The Clothing of the Renaissance World*, "…since they are forbidden to wear pearls they reveal themselves as prostitutes by exposing their bare necks. On their heads they wear a short gauze *fazzuola* (= a scarf) and in this style they go… throughout the city, easily recognized by all."[11]

That our painting portrays a prostitute is further suggested by the Latin acronym in the back of the panel: "VLLLLF." This has been interpreted as V(otum) L(uxuriae) L(icentiae) L(asciviae) L(upa) F(ecit), that is, "the she-wolf (wench) dedicated herself to lust, license and lewdness."[12] Ironically, if our lady was indeed afflicted by lupus, her moniker of "lupa" would have been eerily appropriate. Or, as the Latin saying goes, *nomina sunt consequentia rerum* (names reflect reality).

SEEING VS OBSERVING

The above exercise demonstrates the power of observation when coupled with contextual knowledge, in this case both medical and historical. To rekindle observation, it may be important to first appreciate two different ways the human brain processes what we see: pattern recognition and attention to detail. An early task of the infant is to learn to filter out superfluous sensory details in order to bring into relief what is relevant for the recognition of patterns.[13] The brain then uses

these patterns as a sort of shorthand, based on what it has seen before and what the experience was associated with (danger, opportunity, pleasure). During adulthood, however, it may be necessary to "relearn" how to admit unfiltered sensory input by training ourselves to attend to every detail, so that we can see what is actually before us and not what the brain tells us is there based on previous experiences.

Osler argued that "the whole art of medicine is in observation"[14] but also warned us that there is "no more difficult art to acquire."[15] To this end, he made sure that his students knew the "Method of Zadig," a technique named after a character in one of Voltaire's novelettes, who was able to reconstruct the appearance of animals he had not seen by simply interpreting their traces.[16]

Edgar Allan Poe and Arthur Conan Doyle loved the novelette, and in fact, Zadig lies at the heart of their famous detectives' investigative techniques: Poe's Auguste Dupin and Doyle's Sherlock Holmes are both disciples of Zadig. Joseph Bell, the charismatic clinician who taught Doyle in Edinburgh and became the inspiration for the character of Holmes, routinely employed the method of Zadig, "[which] every good teacher of medicine or surgery exemplifies every day in his teaching and practice."[17] Even Sigmund Freud used the technique.[18]

The process starts with the methodical observation of *details*, which forces us to see what otherwise might go unnoticed. This is however a daunting task. As Sherlock Holmes puts it, "I see no more than you, but I have trained myself to notice what I see."[19] In fact, "I have trained myself *to see what others overlook*."[20] Only after all of the details have been observed can inferences be drawn, so that a pattern may emerge. Yet, most of us tend to drift, carrying out only an abridged exam before defaulting to technology and "tests."

Building on the premise that astute and meticulous observation is fundamental to the practice of medicine, that learning the art of observation requires both method and practice, and that today's medical education provides little of either, many medical schools have outsourced the teaching of this skill to art museums and instructors. Since the 2001 study from Yale,[21] a body of evidence has shown that the observation of art can significantly improve the art of clinical observation. In fact, *Visual Thinking Strategy* (VTS) is a way of looking at art that is very much based on the method of Zadig: attention to details plus deductive reasoning. Ironically, the process has medical roots.

MORELLI'S APPLICATION OF ZADIG TO VISUAL ARTS

In the nineteenth century, the art connoisseur and physician Giovanni Morelli theorized that the observation of "material trifles" he had learned in medical school could be used to authenticate artworks.[18] He described his method as "savoured more of an anatomist… than a student of art,"[22] and he used it at great length to accurately identify artists by their unique ways of painting earlobes, hands, fingers, or toes[23]—very much like "a criminal might be spotted by a fingerprint."[24] That Morelli's use of Zadig resembles the investigative technique of Sherlock Holmes is not happenstance: Morelli's ideas were quite familiar to Conan Doyle's uncle, a painter, art critic, and director of the National Art Gallery in Dublin who had met Morelli and written about him. Morelli's writings were translated in English in 1883, while the first Sherlock Holmes' story was published in 1887, raising the possibility that Holmes' creator might have also been familiar with Morelli's technique.[24] Freud surely was. In fact, he saw Morelli's approach as being closely related to the psychoanalytic process.[8, 23] That Morelli, Doyle, and Freud (an Italian, a Scot, and a Moravian) were all trained as physicians says how crucial and ubiquitous the method of Zadig was for 1800 *medical semiotics*.

CONCLUSION

A cursory museum visit might dismiss this painting as yet another Renaissance portrait, but close observation plus a broad education reveals a wealth of details. Decoded, these details inform us about the sitter's life, possibly her health, and maybe even her death—especially if one reads the back inscription as a post-mortem commentary. Thus, her name might have been lost to history, but the portrait still tells a story. Her painting also gives us a chance to apply the method of Zadig, sharpen our observational skills, and spark our creative thinking—all examples of art coming to the rescue of medicine. Intriguingly, it was medicine that may have first played this very role for the arts, by demonstrating the crucial value of meticulous observation. Morelli, Doyle, Freud, and Osler were all physicians closely allied with the arts who relied on "Zadig" for their discoveries. Encouraging trainees and practicing clinicians to consciously "zoom in and out" between pattern recognition and close observation of details may once again get art and science to team up to help physicians see with a better eye. It might also encourage physicians to reclaim the privilege of teaching the art of observation, thus providing learners with clinical information that no art instructor would be able to supply. By doing so, it might improve the generation of diagnostic hypotheses and thus result in a more accurate and cost-effective care. Lastly, it would rekindle a tradition wherein diagnostic rigor and accuracy do not depend primarily on technology but rather on the clinician's acumen and power of observation.

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Compliance with Ethical Standards:

Conflict of Interest: *The authors declare that they do not have a conflict of interest.*

REFERENCES

1. **Block L**, **Habicht R**, **Wu AW** et al. In the wake of the 2003 and 2011 duty hours regulations, how do internal medicine interns spend their time? J Gen Intern Med 2013; 28(8):1042–1047.
2. **Mangione S.** When the tail wags the dog: Clinical skills in the age of technology. CCJM. 2017;84(4):278–280.
3. **Osler W.** On the Need for a Radical Reform in our Methods of Teaching Senior Students. Medical News (NY) 1903; 82: 49–53.
4. **Johnson HA**. Gerard de Lairesse: Genius among the Treponemes. J R Soc Med. 2004; 97(6): 301–303
5. **Petrakis NL**. Diagonal Earlobe Creases, Type A Behavior and the Death of Emperor Hadrian. West J Med. 1980; 132(1): 87–91
6. **Scofield RH**, **Bruner GR**, **Harley JB**, **Namjou B**. Autoimmune thyroid disease is associated with a diagnosis of secondary Sjogren syndrome in familial systemic lupus. Ann Rheum Dis 2007;66:410–413.
7. **Harisdangkul V** and **Johnson WW**. Association between relapsing polychondritis and systemic lupus erythematosus. South Med J. 1994; 87(7):753–7.
8. **Cazenave PLA**. Lupus Erythemateaux (erythema centrifuge). Ann Malad Peau Syph 1851; 3:297–299.
9. **Clarke PC**. The Business of Prostitution in Early Renaissance Venice. Renaissance Quarterly 2015; 68:2, 419–464
10. **Rosenthal MF**. The Honest Courtesan: Veronica Franco, Citizen and Writer in Sixteenth-Century Venice. Chicago, IL: The University of Chicago Press; 1992.
11. **Vecellio C**, **Rosenthal MF**, **Jones AR**. The Clothing of the Renaissance World: Europe, Asia, Africa, the Americas. London, UK: Thames & Hudson; 2008
12. **Elfriede Regina Knauer**. Portrait of a Lady? Some Reflections on Images of Prostitutes from the Later Fifteenth Century. Memoirs of the American Academy in Rome. 2002; 47:95–117
13. **Horowitz A.** On Looking. New York, NY: Scribner and Simon & Schuster Publishers; 2013
14. **Osler W**. The natural method of teaching the subject of medicine. JAMA. 1901; 36 (24):1673–9.
15. **Osler W.** On the Educational Value of the Medical Society. Yale Medical Journal. 1903; 9(10): 325
16. **Voltaire.** Zadig or Destiny: An Oriental Tale. In: Candide and Other Writings. New York, NY: The Modern Library; 1956.
17. **Bell J.** The adventures of Sherlock Holmes: a review. Bookman. 1892;3:79–81
18. **Belkin BM** and **Neelon FA**. The Art of Observation: William Osler and the Method of Zadig. Ann Intern Med. 1992; 116(10):863–6.
19. **Conan Doyle A.** The Adventure of the Blanched Soldier in *The Adventures of Sherlock Holmes*. London, UK: George Newnes Publisher; 1892.
20. **Conan Doyle A.** A Case of Identity. In *The Adventures of Sherlock Holmes*. London, UK: George Newnes Publisher; 1892.
21. **Dolev JC**, **Krohner Friedlaender L** and **Braverman IM**. Use of Fine Art to Enhance Diagnostic Skills. JAMA. 2001; 286: 1020–1.
22. **Morelli G.** Italian painters; critical studies of their works. London: J. Murray Publisher; 1893.
23. **Ginzburg C** and **Davin A**. Morelli, Freud and Sherlock Holmes: Clues and Scientific Method. *History Workshop*. 1980 (9): 5–36.
24. **Wind E.** Art and Anarchy. Chicago, IL: Northwestern University Press; 1985.