

Power of Observation.
Notes for podcast.
Chadwick
March 2024

Introduction

Following taking early retirement for health reasons, I enrolled on a part time Masters in Medical History and Humanities at Manchester University. The Humanities aspect was a fascinating part of the degree that I hadn't expected.

Part of the course covered the representation of illness in literature and art, and how art could be used to teach students how to improve their observational skills. Which ignited my interest in this topic.

Observation

My generation and those before were all taught in our first year of clinical medicine about the importance of the history and examination and the importance of observing the patient and their environment.

Hopefully in this podcast conversation we can talk about how we might enable our colleagues to develop their observational skills or even regain the skill, to enhance the art and become more critical observers.

These are skills that perhaps as modern diagnostics have become the normality, have received less attention in the following generation of physicians. Less time is spent directly with the patient and making a thorough observation and increasingly more time and money are being spent on diagnostic tests. **Dr. Abraham Verghese**, Professor of Medicine at Stanford University, in a recent lecture entitled “A Doctor’s Touch” discusses how physicians have detrimentally moved away from interacting with patients and quotes a case where a female patient came to the emergency room after visiting several other institutions that were unable to diagnose her. After a CAT Scan for suspected blood clots, it was discovered that she had bilateral palpable breast tumours with extensive metastases. Yet somehow nobody had ever fully observed her or carried out a proper examination which would have easily revealed her tumours earlier. **Dr Fabrizia Faustinella** , Professor Family and Community Medicine Houston Texas, describes another case of a patient who presented with fatigue , weight loss and abdominal pain. Who had similarly presented to several clinics and undergone a barrage of tests. Observing the patient, she noted that his skin was more tanned and pigmented than would be expected. He exhibited other clinical manifestations on close inspection which pointed to a diagnosis of Addison’s Disease. Because nobody had properly observed the patient the clues in all the tests had not been interpreted in the whole. ^{1 2 3 4}

I still remember a patient, from my very first junior house officer post in surgery, in his mid -thirties who I was asked to see whilst on-call in the emergency department. He had attended the department several times asking for pethidine for abdominal pains, the staff told me they thought he was addicted to pethidine and should send him home. When I reviewed him, something made me realise his pain was probably real and ordered an amylase which came back slightly elevated. A CT scan the next day revealed inoperable pancreatic cancer. The lesson I learnt was always carefully observe the whole patient and this patient stayed with me to this day.

¹ Mengxiao Ge S, Observation: The Importance of Art in Medicine. 2013, McGill University

² Abraham Verghese , TED Talk, “A Doctors Touch” Video. 2011

³ https://www.ted.com/speakers/abraham_verghese. Accessed April 2024

⁴ Faustinella F , The power of clinical observation in medicine. Int J Med Educ. 2020; 11:250-1

Macleod's Clinical Examination teaches us the sequence of a physical examination ⁵

- Inspection (observation)
- Palpation
- Percussion
- Auscultation

The most important aspect is simply observing the patient and the surroundings. Standing quietly at the end of the bed.

The concept of “the golden minute” and the potency of silence whilst observing the important first impressions.

When I undertook my pre-op clinic, I always chose the room at the end of the corridor from the waiting area so that I could observe the patient and accompanying relative walk down the corridor, enter the clinic room and take their coat off. Absorbing all the available visual cues.

The next phase of the skill of true observation is to then interpret, document and convey to others what has been observed. William Osler wrote in 1929.

- Observe
- Record
- Tabulate
- Communicate
- Use the five senses

The art of observation – learning to see. ⁶

From Latin –“**observare**” -to watch over , note, heed, attend to, guard
Powerful skill often underestimated.
Rarely formally taught.

“Imagine a spiders web on a cold autumnal morning with droplets of dew initially all you see is the spiders web but if you if you look more closely each droplet acts as a tiny spherical lens through which it is possible to observe different aspects of the surroundings.” ⁷

True observation employs multiple senses. It is the active process of recognising , probing and feeling. It goes beyond merely seeing or hearing.

Visual literacy Requires the actions of being visually competent to contextually interpret and analyse received inputs, alongside the recognition of patterns .

⁵ Macleod's Clinical Examination. Eleventh Edition. 2005. Elsevier Churchill Livingstone.

⁶ Stonehocker S, et al. The Art of Observation: Learning to See Alberta Health Science Journal 2015. 11:23

⁷ Sidebotham CE, Life and Times, Observation, what do you see ? Br J Gen Prac. Nov. 2019 p559

Observation, it is an art form and a skill that takes time to experience develop and refine.

The importance of observation skills, ability to interpret and record then communicate has been emphasised by countless great medical teachers over the centuries. The textbooks of Medical History refer to Hippocrates as the “father of medicine” with his references to the importance of clinical inspection and observation.

Physical diagnosis has its origins in Grecian Medicine. Clinical medicine flourished before the Greeks, especially in Egypt, Crete and Babylon and undoubtedly the Greeks were influenced by these earlier physicians. But writings from these countries did not become part of the mainstream of Western Civilisation as did those of the Greeks. They took careful history and were the masters of observation; their description of patients could fit modern texts without much change.

Greek Medicine flourished early. Homer in the Iliad (c. 1200BC) described 141 wounds and used 150 anatomic terms. Hippocrates (c. 460-370 BC) lived during the Golden age of Greece.

His contemporaries included Plato, Socrates, Aeschylus, Sophocles, Euripides, Aristophanes and Pericles.

In Hippocrates’ hands medicine became an art, science and profession. The Hippocratic writings are probably a collection from a number of individuals from the period during which he was the dominant medical figure. They were collected after the death of Hippocrates and stored in Alexandria. From there they were disseminated to all parts of the world. The surviving collection contains 42 cases the likes of which were not encountered again for 1700 yrs. these cases demonstrate a high level of clinical medicine that includes detailed history, observation, palpation, direct auscultation and examination of the sputum and urine. ⁸

We have to remember that the early physicians lived before the advent of modern diagnostic techniques, treatments and understanding of many diseases enabling modern diagnosis and treatments.

The next proponents of the importance of observation were during the period of Galen in the 2nd century AD in Rome following on from Hippocrates. The development of the concept of the “**Four Humours**” **blood, yellow bile, black bile and sputum.**

Little developed further until the era of Accurate Anatomy with Andreas Vesalius, 1514-1564, and the period anatomical of dissection about 1543 AD. Vesalius wrote his treatise on human anatomy “*De Humani Corpororis Fabrica Libri Septem*”

In the mid 1600’s the concept of ‘**Nosology of Disease**’ developed with the English physician Thomas Sydenham, 1629-1689. He advocated the definition, classification and nomenclature of disease, in 1666 AD, as well as being a physician he was also a

⁸ Walker HK. et al. The Origins of The history and Physical Examination. Chapter 1. Clinical Method, The History, Physical and Laboratory Examination. 3rd ed. 1990. Butterworths, Boston USA.

Captain in the cavalry of Oliver Cromwell during the English Civil War. He is often referred to as the English Hippocrates.

Sydenham laid down important principles:-

- All diseases should be described and classified in species, just as botanists do plants.
- Objective descriptions of each disease, described with the same accuracy as when an artist paints a picture.

The late 1700's and early 1800's brought in the era of Morgani in 1761 and The **Foundations of Pathological Anatomy**, along with the development of the era of "**Hospital Medicine**" especially in Paris between the French Revolutions of 1789- 1848.⁹ This was the period when the Medical Institutions started to be built across Europe. And the new generation of physicians developed with great emphasis on clinical examination and observation such as Martin Charcot at France's Salpetriere Hospital. The value of recording the clinical observation was also noted in the early 1800's by the French physician Louis Martinet who wrote .. "*the report of a case should be like the copy of a picture The observer should express its real character..*".¹⁰

This brings us to the art of recording observation as erudite written works and choosing the two examples of essays of the period by Paget and Parkinson who were both typical of the physician-naturalists of their time and are remembered for their eponymously named afflictions.

James Parkinson, 1755-1824, was one of the most experienced "fossilists" of his day, adept at classifying fossil types and several are named after him, giving him the same sense of application to the observation of disease.

A son of John Parkinson. An apothecary and surgeon living in Hoxton Square, London. He was the oldest of five siblings. James took over his father's practice. He was also involved in the politics of the time. In 1812 he published a first description of appendicitis. Wrote several books about fossils. Several fossils are named after him. Including **Ammonite – Parkinsonia parkinsoni** which can be found in the Natural History Museum in London.

He published "*Organic Remains of a former World*" vol1-1804, vol2-1808, vol3-1811.

He died of a stroke in 1824, and is commemorated with a stone tablet inside the church of St. Leonard's, Shoreditch.

In addition to his works about fossils, James Parkinson published his classic work, "*An Essay on the Shaking Palsy*" in 1817, two years after the battle of Waterloo. The essay sets out closely observed descriptions of six cases of the progressive disabling condition, two of the cases were met casually in the street. The descriptions of posture and running gait are examples of the encompassing attention to observe detail.

⁹ Bynum W, The History of Medicine: A Short Introduction, Chapter 3. 2008 , OUP, Oxford

¹⁰ Bramstedt KA . Images of Healing and Learning. The Use of Visual arts as a Window to Diagnosing medical Pathologies. AMA Journal of Ethics. 2016. 18; 8: 843-854

The essay was swiftly recognised to be an important description that has since attained the status of a classical medical text. In the year of publication, the *London Medical and Physical Journal* announced the essay as worthy of universal perusal. Jean-Martin Charcot, who later named the condition “*La Maladie de Parkinson*”, was so impressed that he advised students at the Salpêtrière to translate it. “It will provide you with the satisfaction and knowledge that one always gleans from a direct clinical description made by an honest and careful observer”. This advice still applies today.¹¹

James Paget, 1814-1899, was born Great Yarmouth. His father was a brewer and ship owner. **His mother Sarah gave birth to 17 children of whom nine survived to adulthood.** James was the youngest in quite a large family.

One of James’ older brothers, George, became Regius Professor of Physic at Cambridge University in 1872 and also had a distinguished career. His father Samuel encountered business difficulties and bankruptcy hence couldn’t afford to send James to university therefore he was schooled in Yarmouth and was initially destined for the navy however instead he was apprenticed to a general practitioner in Great Yarmouth with whom he served four and half years. His spare time was spent in the study of botany and zoology and in 1834 published “*The Natural History of Great Yarmouth and its Neighbourhood*”, along with one of his brothers, Paget acknowledged how his study of botany enhanced his habit of **observing** and its effect on his later life. In 1834 he entered as a medical student at St Bartholomew’s Hospital. Because he wasn’t a considered to be university man, he struggled to establish his early medical career in London and spent several impecunious years before eventually securing a post in 1841 at the Finsbury Dispensary which enabled him to start to establish his career.

James Paget published many works, but is best remembered for his eponymous and classic essay “*On a form of Chronic Inflammation of the Bones (Osteitis Deformans)*” in 1876 in which he describes the observations of the condition in several patients over several years, including one and how his yeomanry hat had to be enlarged. All the clinical features of the condition are beautifully described.¹²

Perusing these two classic essays highlights examples of the important art of observational written literacy in clinical medicine, and how we should revisit this skill. Something to discuss with junior colleagues.

Which brings us to the importance of using Visual Art in medicine. Several medical schools have introduced visits to the art gallery as part of the humanities syllabus, to teach observation skills and develop **visual literacy**, some of these basic skills have been lost behind the increasing burden of modern medical technology.

¹¹ James Parkinson “An Essay on the Shaking Palsy”. 1817, London.

¹² James Paget “On a Form of Chronic Inflammation of Bones (Osteitis Deformans). Med Chir Trans. 1877. 60:37-64

The nature of artists work makes them excellent observers, there are numerous examples of historic classic paintings where the artist has, perhaps unknowingly, captured and depicted pathology if one observes carefully.

Art is the projection of our experiences and memories embracing the artists ability and power to observe and capture the environment around us. The nature of artists work made them effectively the cameras of their day. They faithfully capture everything that they see and with that skill they subconsciously record all the manifested conditions of their models without any medical training.

Numerous examples of pathology and disease in art which have been written about by art historians and medical historians which are available can be discussed. For the purposes of this podcast, we can briefly discuss three examples. The audience is invited to observe these three example pictures and describe initial impressions as an exercise.

Having already discussed Paget's essay it is pertinent to use the portrait by Quintin Metsys (Massys) painted in 1513. This is a caricature of a lady sitting for a portrait. Entitled ***The Old Woman or The Ugly Duchess***. To the untrained eye this painting simply looks like the portrait or even caricature of an old woman, but if you study the specific facial characteristics, the exaggerated ugliness with the features of deformation, the bossed forehead, prominent cheekbones , enlarged maxilla, increased distance between mouth and nose and slightly forced rictus smile are classical representations of the changes to the face encountered with Paget's descriptions of the condition.^{13 14 15}

Rembrandt's representation of ***Bathsheba at her Toilet*** painted in 1654 uses his mistress Hendrickje Stoffels, as the model. Whilst naked she appears lost in thought. The artist has captured skin discolouration on her left breast, peau d'orange and fullness and distortion of the axilla. On initial superficial inspection of the painting, Rembrandt's capturing of the changes in her breast might not be apparent more careful observation is required. Some authors have argued the image is not entirely representative of malignancy. Her melancholic appearance might be representative that both she and Rembrandt are aware of the implications of the changes in her breast. She died seven years later.^{16 17}

A more elusive representation of disease captured by an artist can be found in ***The Three Graces*** painted 1639 by Peter Paul Reubens (1577-1640). At first glance, nothing seems to stand out medically , but on closer inspection the Graces display several

¹³ Dequecker J, Paget's disease in a painting by Quinten Metsys (Massys). BMJ. 1989. 299: 1579-1581

¹⁴ *"The Old Woman / The Ugly Duchess"* Quinten Massys. 1513. oil on Panel. National Gallery London. Accessed March 2024.

¹⁵ <https://www.nationalgallery.org.uk/paintings/quinten-massys-an-old-woman-the-ugly-duchess>

¹⁶ Braithwaite PA, Shugg S : Rembrandt's Bathsheba : The dark shadow of The Left Breast. Annals of the Royal College of Surgeons of England. 1983 65: 337-8

¹⁷ *"Bathsheba at her Toilet"* Rembrandt 1654 Musee de Louvre Paris . <https://collections.louvre.fr/en/ark:/53355/cl010060453> Accessed April 2024.

symptoms associated with Hypermobility Syndrome. The Grace in the centre has scoliosis of the spine as well as a positive Trendelenburg sign. The Grace on the left has flat feet and hyperextension in the 4th and 5th fingers of her right hand and evidence of double-jointness. All three Graces also appear to have spine lordosis and lax upper eyelids. Individually each model could have had any number of conditions, but we know that Reubens used as models his second wife Helene Fourment and her two sisters. Reubens used the sisters in other paintings and these subtle signs can be seen whereas with different paintings and models before he married Helene in 1630, they are not present. Hypermobility Syndrome is an autosomal dominant condition, and we are able to make the connection with the three sisters.^{18 19}

We could discuss numerous other examples of art capturing pathology, it is a fascinating avenue to travel.

How do we bring this discussion around to the approach of teaching **“visual literacy”** to the current generations of students who will be tomorrow's doctors. ?

Over the past few years several medical schools have started to encompass the use of observing art to enhance diagnostic acumen as part of the medical humanities teaching.

At Harvard University a pre-clinical course was designed to enhance students' diagnostic acumen by expanding their visual skills in 2008. The Harvard program involved three main components over a 9-week module.

1. Close observation and guided discussion of visual art
2. Exploration of core artistic concepts
3. Opportunity to apply these skills to clinical assessment.

The Weill Cornell Medical School also introduced a module at the Frick Collection of Art Museum where students developed skills in observation of paintings. Pre- and post-testing found that students' comments shifted from external objective features to being more precise and emotionally referenced following the intervention. Following the introduction of a similar course developed by a dermatologist, Irwin Braverman, a randomised control study at Yale showed that students who participated in their course identified more details in photographs of patients with medical disorders.

As an example, is one of the pictures which was studied with the Yale University Art and Medicine courses.

¹⁸ Dequecker J, Benign familial hypermobility syndrome and Trendelenburg sign in the painting “The Three Graces” by Peter Paul Reubens 1577-1640. *Ann Rheum Dis.* 2001; 60: 894-895

¹⁹ “*The Three Graces*” Peter Paul Reubens, 1630-35. Museo Nacional del Prado, Madrid, Spain.

<https://www.museodelprado.es/en/the-collection/art-work/the-three-graces/145eadd9-0b54-4b2d-affe-09af370b6932>. Accessed April 2024.

When viewing Edward Hopper's painting *The Automat* (1927), which depicts a lone young woman sat at a table in a café table / automat in America. painted in the style of the 1920's, Students are asked to consider; - ^{20 21 22}

The figure of the woman, her posture, her clothing, her facial expression, her actions, the actual composition of the painting, the position of the table, the point of view of the observer, the time of day.

Discussing the observations, we can point out that the woman is dressed for cooler weather, that her empty plate suggests that she has been alone at the table for some time, that her downcast head and the downturned brim of her hat indicate loneliness or depression. The bright lights reflected in the window behind her contrast with the inky night; only pale shadows are seen outside, which intensifies her solitary position. The off-centre table anchors the lower right side of the painting; it appears to be near the door of the café, surely an undesirable location. The bright red flowers in the vase behind the woman contrast with and only emphasize the melancholy mood.

Joel Katz at Harvard in 2003 also developed a course "*Training The Eye; Improving the Art of Physical Diagnosis*".

Formal arts appreciation education has been shown with several studies to bring improvements in the observational skills of those who participated. ^{23 24}

In order to develop this discussion and theme further we are going to now conduct an exercise in how to use our observational skills to describe and verbally convey to the audience some examples of paintings and photographic images:

The first is:

Mrs. Green painted in 1930 by the artist Richard Eurich (1903-1992). ^{25 26}

She has been sent home from the sanatorium, when the artist visits her following a request that Mrs. Green made to the artist's mother who had also been a patient at the sanatorium. Unfortunately, she passes away from her illness before the painting is complete.

Can you convey the imagery that this painting represents to you in as much detail as possible, for the podcast audience.

²⁰ Nugent C, Art Saves Lives 2020, The Southwest Respiratory and Critical Care Chronicles 2020;8(33):74-77

²¹ Edward Hopper. *The Automat*. 1927. The Des Moines Art Centre, Des Moines, Iowa USA.

²² <https://desmoinesartcenter.org/wp-content/uploads/2022/04/cc-hopper.pdf> . Accessed April 2024.

²³ Bramstedt KA.

²⁴ Katz JT. et al. Can Visual Arts training Improve Physician Performance. Trans am clin assoc. 2014; 125: 331-342.

²⁵ Painting. Mrs Green, 1930, 37.2x42.6cm, oil on canvas. Richard Ernst Eurich. Southampton Art Gallery. Southampton, Hampshire. UK.

²⁶ <https://richardeurich.co.uk/works/mrs-green/>. Accessed March 2024.

The second is:

“The First Successful Kidney Transplantation” painted by Joel Babb in 1996.

The first successful human kidney transplant was performed on December 24th, 1954, in Boston between a pair of identical twins. The recipient successfully survived a further 7 years after receiving his brother’s donated kidney. the painting was commissioned from the artist to recognise the semi-centennial anniversary of this important event. ²⁷

²⁸ ²⁹

The Third is

a depiction of “The First Operation under Ether” by Robert C Hinkley painted between 1891-1896. ³⁰ this painting will be familiar to anaesthetists. Depicting the first operation under Ether at the Massachusetts General Hospital 19 October 1846. ³¹

Describe these two paintings representing operating theatres from two different eras, contrast are there any differences or similarities in the depicted scenes captured by the artists.

The Fourth is

A classic painting on display at the Imperial War Museum in London. “Gassed” painted in 1919 by John Singer Sargent (1856-1925) the classic WW1 image of gassed soldiers approaching a medical dressing station in the trenches of the battlefield. This painting is enormous at approximately 9 x 21 feet in dimension and has been viewed by several million visitors. ³²

Two Photographs

Photographs are the modern equivalent of the oil painting. imagine that you are being asked to describe what imagery can be visualised , through the lens of the junior doctor, in both these scenes describe with as much detail as possible and also

²⁷ Desai SP et al, A Semi- Centennial Report on the Participants Depicted in Joel Babb’s Portrait, “*The First Successful Kidney Transplantation*”. Am J Transplant. 2007 7(7):1683-1688.

²⁸ Joel Babb. “*The First Successful Kidney transplantation*” 1996. oil on canvass. 70”x88”. Francis A Countway Collection, The Harvard Medical Library, Library of Medicine Boston, Massachusetts USA .

²⁹ Joel Babb <https://www.joelbabb.com/231/>. Accessed March 2024.

³⁰ Royal College of Anaesthetists website History of Anaesthesia. Image of the painting by Robert C Hinkley. Website accessed 2024. Original painting on view Boston Medical Library Art and Artifact Collection.

³¹ <https://collections.countway.harvard.edu/onview/items/show/26609>

³² “Gassed” John Singer Sargent. Imperial War Museum. Website. Accessed 2024.

describe the clinical scenarios and surrounding environments which have been captured , what conclusions can be drawn about the patient hidden under drapes in the heart of the image from the visual clues available.

A photograph from an ICU scenario ³³

A photograph from an operating theatre. ³⁴

Conclusions

We can summarise our discussions and the take home message about how the early history of clinical observation and how reading the early essay writings of Parkinson and Paget still are relevant today giving an insight into their written eloquence as they describe their observations. Further the discussions can summarise how developing teaching and exposing participants to the use of classical art and galleries can encourage medical students and doctors to improve and develop their skills of critical observation whilst reviewing a the patient and the surrounding environment.

Thank you.

³³ Photograph. By Dr Paul Engels, The Hamilton General Hospital. Ontario. Accessed March 2024
<https://www.oha.com/health-system-news/PublishingImages/Pages/Inside-the-ICU-During-COVID-19-photos-from-healthcare-providers/HHS%20ICU%202.jpg>

³⁴ “A scene from an operating theatre, “. Personal collection Dr. IS Chadwick

