**THE ART OF OBSERVATION** and **THE OBSERVATION OF ART**

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I have no financial relationships with commercial entities producing health care related products and/or services.

“...Today’s physicians seem to be more preoccupied with the laying on of tools than with the laying on of hands.”
(Bernard Lown, MD)

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**BEDSIDE DIAGNOSIS**

- Inspection
- Palpation

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**BEDSIDE DIAGNOSIS**

- Inspection
- Palpation
- Percussion (1761)*
- Auscultation (1819)**
- Contemplation...

* Auenbrugger, *Inventum Novum*  
** Laennec, *De l’Auscultation Médiatée*
“There is no more difficult art to acquire than the art of observation.”
(William Osler)

“The whole art of Medicine is in observation”
(William Osler)

“There are three classes of people:
• Those who see;
• Those who see only when shown;
• And those who can’t see at all.”
(Leonardo da Vinci)

Today’s residents spend 12% of their time observing people… 40% observing computer screens.
Otzi the Iceman (1991)

Multimillion dollar museum....

Missed for ten years!
Flight Simulation

Boeing 747 Flight Deck

The 1977 Tenerife Air Disaster: 583 people killed
(The deadliest accident in aviation history)

Attentional capture and inattentional blindness

Watch this short 40 second clip. Pay close attention to the players in the BLACK shirts and count the number of times they pass the basketball.

There were 20 passes, but...
**INATTENTIONAL BLINDNESS**

- Failure to see highly visible objects when our attention is drawn elsewhere.
- Has an auditory counterpart (we often do not hear if we are "not listening"…)
- Causes of Intentional Blindness include:
  1. Perceptual Load (being distracted by another task)
  2. Lack of Expectation for the unattended stimulus
  3. Inattentional Amnesia (unnoticed stimuli are seen but forgotten since attention is elsewhere)
  4. Perceptual Cycle (attention capture and awareness capture would occur at different stages)

Given that people see much less than they think they do, is the visual world a mere illusion?

**PAY ATTENTION!**

![J.C.P. Williams (1961)](image)
Williams’ Syndrome
Congenital Supravalvular Aortic Stenosis

Elfin face
Wide-set eyes
Upturned nose
Baggy cheeks
Patulous lips
Small chin

Gabrielle Marion-Rivard

“There are lots of diseases out there waiting for your name!”
(Sal Mangione)
THE METHOD OF ZADIG
(Conan Doyle style...)

“I knew you came from Afghanistan. From long habit, the train of thought ran so swiftly through my mind that I arrived at the conclusion without being conscious of intermediate steps. Yet, they were there. The train of reasoning ran as such:

‘Here is a gentleman of a medical type, but with the air of a military man. Clearly, an army doctor then. He has just come from the tropics, for his face is dark, and that is not the natural tint of his skin, for his wrists are fair. He has undergone hardship and sickness, as his haggard face says clearly. His left arm has been injured. He holds it in a stiff and unnatural manner.

Where in the tropics could an English army doctor have seen much hardship and get his arm wounded? Clearly in Afghanistan! The whole train of thought did not occupy a second. I then remarked that you came from Afghanistan and you were astonished.”

(Arthur Conan Doyle - A study in scarlet, 1887)

GENERAL APPEARANCE

- Face (Facies)
- Body Habitus
- Ears and Eyes
- Skin
- Extremities
- Thorax and abdomen
Arachnodactily (long, spider-like fingers)

Steinberg’s Thumb Sign
(The entire thumbnail projects beyond the ulnar border of the hand)

Bernard-Jean Antoine Marfan
(By Emile Charles Wauters, 1899)

An extremely cultivated man, Marfan had a zest for literature and the arts, enjoying concert music and trips to Italy, where he loved to visit The Accademia of Venice.
"The problem with you, Watson, is that you see but you do not observe."

(A Scandal in Bohemia)

"More is missed from not looking than not knowing."

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"How careful a description can you give of the personal appearance, clothing etc. of the last patient who consulted you?"

"If he had been a thief who walked off with something from your office, could you give the police a description which would help them to capture him?"

"The people we meet on the street, those in the street cars, all with whom we come in contact may serve as subjects..."

"Nothing which trains the powers of observation can be unimportant, and far from being tiresome it adds to the interest of the day."

"Strive to be one of those upon nothing is lost!"
John Ruskin (1819-1900)

Harvey Cushing, 1899

Bargello, Florence
A tan colored skull-cap, a doublet of black serge, a lined black jerkin, and a blue coat lined with fur of fox’s breasts. The jacket’s collar covered with a black and red stippled velvet. Black socks.

Bernardo di Bandino Baroncelli

When you pay attention to detail, the big picture will take care of itself.

Georges S. Perre
- Yale Study: 9% more details observed
- Harvard Study: 38% more details observed

'Portrait of a Lady' (Jacometto Veneziano, 1470s)

Portait of a Lady
(Jacometto Veneziano, 1470s)
Renaissance Venice had more than 10,000 tax-paying prostitutes in a city of 100,000.

To help identification the government distinguished various subcategories:

- 'Cortezana Putana' (wench courtesan)
- 'Cortezana da Lume' (lamplight courtesan)
- 'Cortezana da Candela' (candlelight courtesan)
- 'Cortezana Onezta' (honest, or cultivated, courtesan)

The first three groups occupied the lowest rungs and thus government required of them a simple dress code with the head covered by a yellow scarf.

It also forbade something else...

*From the Latin merēre to earn, gain.*

Veronica Franco (1546–91)
Young Man and Woman in an Inn (Frans Hals, 1623)

Secondary Syphilis to the face with large papules around the nose

Vienna 1498

Rosacea
Las Meninas (Velasquez, 1656)
The Maids of Honour (Donas)

- The achondroplastic German dwarf, Maribarbola (Maria Barbola)
- The hypophyseal Italian dwarf, Nicolas Pertusato, who's playfully trying to rouse a sleepy mastiff with his foot.

Good example of another full-blooded Italian with Growth Hormone deficiency (Messi's parents came from Ancona in Marche), who went to Spain not as a court dwarf but as a boy wonder soon to win four Golden Ball Trophy.
Mozart Unfinished Portrait by Lange (1782)

Swelling of the upper eyelids plus anemia
Nephrotic Syndrome

Xanthelasmas
- Yellow, irregular leather-like spot at the inner end of the left upper eyelid.
- An infrared photograph from 1974 revealed the xanthelasma to be an integral part of the initial painting.

**Portrait of an Elderly Lady**
(Frans Hals, 1633 Wash. Nat. Gall.)

Xanthoma

Soft, bumpy well-defined 3 cm swelling

Multiple Xanthomas

**Portrait of an Elderly Lady**
(Frans Hals, 1633 Wash. Nat. Gall.)
Loss of the Lovibond's angle. This is the angle between the base of the nail and its surrounding skin (hyponychial or unguophalangeal angle). In a person with clubbing, on the other hand, the angle is wider, resulting in what is known as the "Finger Finger Line." The loss of this angle can be easily visualized by placing a finger over the nail in normal subjects, there will be a clear window below the pencil and above the nail. In clubbed patients, the nail will fully rest over the finger (Schamroth's sign).

Floating nails (unballotability of the nail bed). Increased sponginess of the soft tissue at the base of the nail. As a result, the nail plate acquires a very peculiar "springy" feeling. When the skin proximal to the nail is compressed, the nail will sink deep toward the bone; when released, it will spring backwards and outwards ("floating" fingernail base).

Abnormal Phalangeal Depth Ratio. Greater depth of the fingertip at the cuticle (Distal Phalangeal Depth – DPD) than at the interphalangeal joint (Interphalangeal Depth – IPD). The ratio of the two measurements is an important indicator of clubbing. In clubbed patients, the ratio is equal to or greater than 1.0. The DPD/IPD ratio is an excellent marker for clubbing, with good sensitivity and specificity.

"The words or the language as they are written or spoken do not seem to play any role in my mechanisms of thought."

"My thoughts are in fact visual ... Conventional words have to be laboriously sought after only in a secondary stage."

[Albert Einstein in a letter to Jacques Adnet]

“One had to cram all this stuff into one's mind for the examinations, whether one liked it or not. This coercion had such a deterring effect on me that, after I had passed the final examination, I found the consideration of any scientific problems distasteful to me for an entire year.”

(Albert Einstein)
“It is often said that Leonardo drew so well because he knew about things;
It is truer to say that he knew about things because he drew so well.”

(Kenneth Clark)

“How could you describe this heart in words without filling a whole book? The longer you write, the more you would confuse the listener…”

Drawing of bovine heart, great vessels and bronchial tree (Pen and ink on blue paper, c1513 - Windsor, Royal Library (19071r))

“Imagination is more important than knowledge”

“Gedankenexperiment (thought and visual experiments)”
And you would only end up knowing a few things, never the whole.

Hence draw first and then describe later!

“Writer, what kind of words will you fetch to awkwardly describe what drawing can instead perfectly represent? Don’t bother with words, unless you are speaking to the blind…don’t mess with things that belong to the eyes. Don’t try to smuggle them as something belonging instead to the ears. You will always be overruled by the painter.”

(Leonardo da Vinci)
“...First among the peculiarities by which these patients may be identified is the *tout ensemble* of the physiognomy.

- A pale earthy complexion, a thick pitted skin, a sunk and flattened nose, and scars of old fissures about the angles of the mouth often give the countenance so much of peculiarity that the condition may be recognized at a glance.
- The opinion is usually borne out by observing further that the subject is of short stature, has a large protuberant forehead and a heavy aspect.”

(Paper read in 1858 at a meeting of the British Medical Association)

Jonathan Hutchinson (1828-1913)

“Ibsen’s ‘Ghosts’ (1881)

• Draughtsman, theatrical set designer, lecturer, writer, theoretician, and perhaps the most celebrated Dutch painter after Rembrandt’s death.
• Described by contemporaries as having a “nauseating appearance”.

Gerard de Lairesse (1641-1711)
(At age 24 as portrayed by Rembrandt)
Metropolitan Museum of NY
A saddle Nose

- Frontal bossae of Parrot
- Ultimately he went blind at 49 (interstitial keratitis?)
- Short Maxillae
- A relatively protruding jaw

Probable rhagades radiating from the corners of eyes and mouth.

“Drawing is the root of everything.”
(Vincent Van Gogh)

“To see what is in front of one's nose needs a constant struggle.”
(George Orwell)

SADDLE NOSE
- The congenital (or acquired) erosive indentation of the nasal bone and cartilage.
  - Congenital syphilis
  - Relapsing polychondritis
  - Wegener’s granulomatosis
You are evaluating a 62-year old Roman emperor. He is a medical school dropout with a long interest in travel, architecture, poetry, and all things Greek (hence his nickname, "the Greekling"). Yet, he's mostly a competitive, driven, impatient, and quite irascible chap, who once had his chief architect executed on mere building disagreements. Still, at the present time he's too dyspneic to either argue with you, or have you executed. You notice that his abdomen is swollen, the neck veins are distended, and the legs are edematous. His past medical history is positive for frequent and recurrent episodes of nosebleeds. You diagnose dropsy, but you are especially intrigued by his ears.

Ear Lobe Creases (ELC) are an acquired phenomenon, and thus different from the folds occasionally present in normal children, or those of newborns with Beckwith syndrome (gigantism, macroglossia, and umbilical abnormalities with microcephaly, renal hyperplasia and hepatosplenomegaly.) The possible association between diagonal earlobe creases (especially if bilateral), and coronary artery disease (CAD) was first reported by the American Sanders T. Frank, and then again in the 1990s by William Elliott. The association with a Pre-Auricular Crease (PAC) was instead suggested only recently.


Frank's sign
(Museo Nazionale Romano
Palazzo Massimo alle Terme, Roma)
In an 8-year study of 108 patients, Dr. Elliott found greater cardiac mortality rates in patients with a crease in at least one earlobe and suggested that loss of elastin could explain both crease(s) and CAD, since both circulations are terminal.

In a follow-up study of 1000 patients admitted to a medical service, 74% of those with ELC had CAD, as compared to 16% of the creaseless ones.

Since then, more than 60 studies have found, with few exceptions, similar results.

A furrow anterior to the tragus (PAC) further increases the likelihood of CAD (PPV of 90%)

Overall, except for Native Americans and Asians, PAC and ELC appear to be a significant independent variable for CAD.

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Animula, vagula, blandula  
Hospes comesque corporis  
Quae nunc abibis in loca  
Pallidula, rigida, nudula…  
Nec, ut soles, dabis iocos

Little soul of mine, roamer and charmer,  
Guest and companion of my body,  
Where will you soon have to go?  
Pale, cold, naked…  
Probably to a place where you won’t be able to crack jokes anymore….
One Indian study and two American reports have suggested that hair in the canal might also be associated with CAD.

This may have something to do with the role androgens play in the development of atherosclerosis, especially considering that another androgen-sensitive trait (male pattern baldness) has also been found to predict CAD.

To make things even more interesting, somatotopic maps of Chinese acupuncture traditionally place the heart around the earlobe and the canal area.
CASE

Rome, April 6 1520, Good Friday.

You are a 37-year old immigrant and one of the greatest painters of the Renaissance.

Yet, for the past few days you have been in bed fighting a nasty fever, which started soon after a long night of love-making.

Sensing your imminent death (after all, you were born on a Good Friday too…) you ask for last rites, dictate your will, and bid farewell to your favorite model, leaving sufficient funds for her care, and entrusting her to your loyal friend and servant.
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- After your death, her portrait is found in your studio.
- Yet, her left breast has a few odd findings.

The breast is enlarged and deformed.

- **The Mass** - A bulge begins inward from the axilla, curves horizontally to the right, and slopes gently towards the nipple, pointed by the index.
- **Skin Discoloration** - Just over the mass.
- **Retraction** - Just below the mass.
- **Satellite Node** - Just inside the axilla.
- **Edema** - The left arm appears larger than the right, and both the armband and the ring appear tight.

“La Fornarina” (Galleria Nazionale d’Arte Antica, Rome)
“La Velata” (Palazzo Pitti, Florence)
Convent and Church of Saint Apollonia in Rome
Raphael’s School of Athens (Jan 1509 – Aug 1511) (Pope Julius II’s personal Library)
Plato holding his “Timaeus” (Leonardo)
Aristotle holding his “Ethics”
Heraclitus (Michelangelo)
• Not a “hot” knee.
• It does present however 3 clusters of “lumps”.
• The first is on the side, over the bursa.
• Two are above the patella.
• One (with three distinct protuberances) leads instead down to the head of the tibia.
• Given the age of the subject (35 at the time) osteoarthritic changes are very unlikely.
• Instead, the findings are consistent with tophi (gonagra).
• Michelangelo (who holds a quill in this image) wrote extensively about his dysuria and recurrent kidney/bladder colics.
• One was associated with anuria, resolved by the passage of gravel and stones fragments.
• “Ho imparato a conoscere l’orina” (I’ve learned to know the urine, 1546-1550).
Normal kidney with normal downward course of the ureter

“There are lots of diseases out there waiting for your name!”
(Sal Mangione)

Abraham Flexner
William Osler

“The Humanities are the hormones!”

“Humanities and Science are twin berries on one stem. Grievous damage has been done to both regarding them in any other light than complemental.”
(William Osler)