Why Do I Say ‘Image’ When Discussing Vision? Or - Can We Ever See a Chair in its Totality?

Ayad Gharbawi, 2033

Here we note that no Observer can ever see the *totality* of any observed object. One can argue we cannot see the back of any perceived object, but that is a superficial objection, since a mirror can resolve that ‘problem.’ I deliberately use the term *‘superficial’* because I mean no Observer can see the *entirety* of any perceived entity. One cannot see every angle of any perceived object. Hence there *is no totality of the vision as per any perceived object.[[1]](#footnote-1)* And that is one of the many limitations of our abilities as human beings in our daily lives.[[2]](#footnote-2)

It is, of course, one more severe limitation of the perceptive disabilities of human beings and that has a consequence: our relative insignificance on earth and specifically as per the ‘Reality’ of earth, the severe limitations of our overall experiences in our daily lives.

Now, going to our question of the chair, the reason why, as we shall see, it is impossible to see the totality of any perceived object is that some innumerable attributes and variables render such a deed impossible. By ‘unity of a perceived object’ I mean that the perceived object has one Image that encompasses the total of it being perceived. The *‘unity’* and Reality of any vision of any phenomena and/or object is *therefore impossible* and that is one more cause why defining ‘Reality’ is such a difficult if not an impossible task.

When we say, ‘seeing a chair’, we may imply or assume that can see the *totality* of the Reality of the chair. But that is not possible. We can only see parts or portions of the chair and never the entirety of the chair.

Why?

Note that before I give the factors that change one’s perception of an object , senses, feelings and/or an event, I have deliberately chosen a mundane object – a chair – since it can be more readily seen as neutral[[3]](#footnote-3). However, in some of the explanations for why people’s judgements may be positively or negatively affected, a chair in itself is not the most emotionally affective observed object.

1. Visual perception of any observed entity is dependent on what *species* the Observer is. If we introduce a bee, an eagle, a human, and a worm seeing the chair, so each will see differing Visions given their different optical anatomies. Each species has a vision that is unlike what any other species sees. Furthermore, viewing the chair with each species will also differ since the Vision itself depends entirely on factors to be listed below.[[4]](#footnote-4) Therefore there is no ‘one’ vision of the chair since each species on earth will see the observed entity differently; and since each Vision is different, so therefore there can be no one, unitary vision of the chair.
2. *Humans are limited in being able to see between 370 and 730 nanometres of light in general*[[5]](#footnote-5). Colours are not ‘real’, they are creations of our brains.[[6]](#footnote-6) All that matters are the different wavelengths of each light and that specific ‘color.’ The brain *infers* from the sensory data coming from the eyes based on the specific wavelength of each light in particular and the brain makes a ‘decision’ what color our Conscious Mind sees. Different wavelengths and different electromagnetic radiation have no color. It is important to note that the brain does not randomly ‘guess’ the sensory input and decide what the color is going to be. The brain uses the most similar data on any perceived entity and chooses that which is most prevalent and that is why we, in general, see the same colors, sounds, feelings among each other.[[7]](#footnote-7) Anil Seth called this *‘Controlled Hallucination.*’[[8]](#footnote-8)
3. But our brains mix up these sensory inputs and *fabricates* the specific color in question, given the specific aforementioned attributes. And it must be recalled that the brain is not always correct in its predictive calculation of what is before our eyes – that which is known as *‘prediction errors.’* The point here is that we or our brains simply do not mirror the ‘Reality’ before our eyes and other senses.[[9]](#footnote-9)
4. This is an extremely limiting factor given the broad range of the electromagnetic spectrum.[[10]](#footnote-10) Also, we cannot see certain colors simultaneously: blue versus yellow, red versus green, light versus dark. In fact, humans can only see 1% or 0.0095% of the visible light spectrum, meaning 99% of the vision around us is unseen.[[11]](#footnote-11) Thus we are seeing an Image of the perceived object strictly based on the acuity of our vision given our optic anatomy, which is in complete contrast to other animals. Therefore, we cannot assert that *we* have the ‘correct’ vision while other organisms have an ‘inferior’ or a vision of a ‘lesser’ Reality.
5. We humans view colors in different ways depending on many changing and unchanging factors/variables that will be listed below. But for now, one can think of colors much as we think and feel about love or how we feel about our favorite actor or novelist. It is a *highly personal interpretation* that is possibly changeable in time. So, for example, for a physicist, green is a light with an electromagnetic wavelength between 520 nm and 570 nm, but for us individually, we may view and/or react to that color in a changing and/or unchanging thousand emotional, thoughtful ways depending on our specific circumstances and the exact time frame in question. In other words, I am highlighting the *highly subjective nature of Vision* as it affects each of us differently and/or in similar manners, in changing and/or in unchanging ways.[[12]](#footnote-12)
6. We now focus only on humans. Visual perception of any observed entity is dependent on the fixed and/or the changing *optical accuracies and/or changing optical deficiencies* of the Observer. Clearly, one person’s visual acuity may be stronger or weaker than another person. Therefore, the perception of the chair will depend on one’s specific visual acuity while at the time it will be different from other people who have different visual acuities.
7. Visual perception of any observed entity is dependent on the changing and/or *fixed emotion/s, mood/s* of the Observing agent. If one is in a bad mood, they may look at an object and/or an event in a darker manner than if they were in a positive mood.[[13]](#footnote-13)
8. Visual perception of any observed entity is dependent on the changing and/or fixed on environmental factors, such as the amount of dust, dirt, pollution, and smoke among others.[[14]](#footnote-14)
9. Visual perception of any observed entity is dependent on the changing and/or fixed *olfactory system* of the Observing agent.[[15]](#footnote-15) Scents affect humans and if one smells an object and/or an event and finds it terrible, they are more likely to judge the observed entities differently than if the scent was pleasant.[[16]](#footnote-16)
10. Visual perception of any observed entity is dependent on *the* changing and/or fixed *age and health* [or lack thereof] of the Observing agent.[[17]](#footnote-17)
11. Visual perception of any observed entity is dependent on the stationary and/or the changing *luminosity* of the observed entity.[[18]](#footnote-18)
12. Visual perception of any observed entity is dependent on the stationary and/or the changing *speeds* within which the Observer observes the observed entity.[[19]](#footnote-19) There are two velocities here. First, the velocity or speed of eye movements and secondly, the velocity of the body of the Observer.[[20]](#footnote-20) This implies our vision is dependent on that fact – since if the FPS were stronger, the vision would be different than if the FPS were at a reduced rate. If and whenever an observing person is moving at a constant or accelerating velocity relative to the chair so their vision will alter precisely due to the type of aforementioned velocity in question.[[21]](#footnote-21)
13. Visual perception of any observed entity is dependent on the stationary and/or the changing state of *Physical fitness*. For example, if one is Physically tired, they are more likely to see distances further than they are. An example is if a climber faces a mountain and they are in a low mood, they may perceive the hill as so much bigger than it would be were the mountaineer in a healthier state of Mind and body. Also, good health can improve vision in itself and that is another variable that we must factor in the observing person of the chair.[[22]](#footnote-22)
14. Visual perception of any observed entity is dependent on the stationary and/or the changing *distance/s* between Observer and the observed entity. Clearly, the Observer’s vision of the chair will be optically affected if the distance between them and the chair increase or decreases.[[23]](#footnote-23)
15. Visual perception of any observed entity is dependent on the stationary and the changing *angle and/or height/elevation* from which the Observer observes the observed entity. Depending on the Physical coordinates of the Observing person affects the vision in question.
16. Visual perception of any observed entity is dependent on the stationary and/or the changing *degree of awareness and unawareness* the Observing individual has as he/she observes the observed entity[[24]](#footnote-24). A person may not even be Conscious of the existence of the chair if they do not think about it or ‘blank out’ momentarily. Conversely one may focus in the most intense manner on the chair. However, awareness is fickle as it fluctuates from extremes to extremes, varying along in all degrees of ranges.

“Our study extends previous research investigating the potential dissociation between explicit and implicit social cognition into the research of eye-contact processing ([Ewing et al., 2010](https://www.frontiersin.org/articles/10.3389/fpsyg.2018.00093/full#B19); [Luo et al., 2016](https://www.frontiersin.org/articles/10.3389/fpsyg.2018.00093/full#B38)). Utilizing one of the most basic, yet essential non-verbal form of social cognition, joint attention, we illustrated how the impact of eye contact may be contingent on visual awareness. We speculated that this contingency is because subliminal and supraliminal eye contact has different affective or social implications, a direction future research should continue to explore.”[[25]](#footnote-25)

1. Visual perception of any observed entity is dependent on the stationary and/or the changing *temperature* in the observing agent and in his surroundings. For example, extremes of heat and cold may affect one’s mood and thereby the way they see the chair.[[26]](#footnote-26)
2. Visual perception of any observed entity is dependent on the stationary and/or the changing *degree of hunger and/or thirst* of the Observing agent. Increased hunger may cause a person to be irritable and so regard the observed entity in a negative light.[[27]](#footnote-27)
3. There is the fundamental, physical fact that no human can see any object in its entirety since the Observer, stationary or moving, *can only see one Image or only one angle at any given moment in time of the observed object and never the totality of the observed object*. We can only see an observed object in one Image/format and from *only* one specific angle at a time – assuming both Observer and observed entity are stationary. Our *visual field* is anatomically defined by degrees of accuracy given our optical changing and unchanging strengths and/or weaknesses - and here we mean only stationary vision.[[28]](#footnote-28) Thus, there can never be a united, whole, one Image of the observed object and/or event.
4. We said we see an object depending on our visual acuity. Suppose science allows us someday to have stronger eyes. So, we will then see the observed object down to its atomic level. But then that Image will be entirely different from the Image seen when we had our ‘normal’ eyesight. And if we go deeper into this subject matter, suppose our eyes can now see the sub-atomic particles. We are now, of course, in the realm of *quantum physics* and with it comes the uncertainties of the precise definition of the sub-atomic particle, as per its momentum, position, nature [wave or particle or both] and so on. This adds even more to the question of seeing the ‘Reality’ of what an observed object is. Quantum physicists are still unsure of the ‘Reality’ and/or Vision of the sub-atomic particles. *At what level of visual accuracy can we say, ‘This is the final point where we can see the ‘Reality’ of the chair?’ Of course, that is a meaningless question, since no point of visual acuity is ‘better’ than any other.[[29]](#footnote-29)* The meaningful point here is that there is no level where we can definitively say, *‘This is the point where one can say we see the final Reality of the observed entity.’*
5. Visual perception of any observed entity is dependent on the stationary and/or changing *memories* of the Observing agent. If the Observing person had bad memories of the chair, it is more likely they will negatively regard the latter. Or, say, that chair was Mother’s favorite chair, and she has since died. The Observing person, her son, may look at that chair with varying emotions depending on his relationship with his mother. On the other hand, another Observer who has no emotional connections to the chair may regard it emotionally in a neutral manner.[[30]](#footnote-30)
6. Visual perception of any observed entity is dependent on the stationary and/or changing fantasies and/or imagination of the Observing agent. If the latter has sexual fantasies about the chair, they may see it in a different light than if there were no sexual fantasies. For example, we may encounter someone who fancies themselves in some sexual act on the chair and that may eroticise the chair in question and therefrom affect their vision of the perceived object.[[31]](#footnote-31)
7. Visual perception of any observed entity is dependent on the eye’s inability to see the totality of the observed entity. Suppose we fixed our gaze strictly on the chair and on nothing else. We allow no distractions, such as any other sensation deviating our Minds from focusing on the chair. Let us say the Observing person is in a one-colored, empty room, where there are no creases or indents on the walls and floor. Imagine the Observing person fixes their eyes strictly and only on the chair. Do they see the chair now in its wholeness? No, our Mind would still not be able to view the entirety or the totality of the chair. This is due, in part, to the anatomy of our visual abilities. We can only see parts of the chair and not its totality.

Let us simplify the last statement.

The Observer is looking at a chair. Suppose he is five feet away from the chair and is standing left of the chair in the room in question. He now sees one Image of the chair that is specifically one Vision represented by being five feet away and to the left of the chair, relative to the room.

Let us now say that the same Observer is now ten feet away from the chair and is standing to the right of the chair. He now sees a *different* Image of the same chair. And, of course, these changing circumstances are endless and that is why no Observer can see the ‘totality’ of the chair.

We can only see multiplicities of the intricately interwoven and changing variables for the sight of any one object in any timeframe which thereby renders the latter vision unable to have a definitive one state of vision that can be beholden. That is not to say one cannot have a definitive and everlasting one Image of a vision – not at all.

Indeed, everyone has lasting Images in their Mind and memories of specific incidents endured throughout their lifetime and, more importantly, they do not change. Usually, such cases are in dramatic, traumatic, or vivid situations and experiences. *But the majority of what we see is not fixed in our Minds, precisely because they are unimportant.* But these are little more than visual biases in our Minds. We may choose to believe they are real or not; either way, they have nothing to do with the totality of the Image of the chair. For Hoffman –

### Q: “So everything we see is one big illusion?

A: We’ve been shaped to have perceptions that keep us alive, so we have to take them seriously. If I see something that I think of as a snake, I don’t pick it up. If I see a train, I don’t step in front of it. I’ve evolved these symbols to keep me alive, so I have to take them seriously. But it’s a logical flaw to think that if we have to take it seriously, we also have to take it literally.

### Q: If snakes aren’t snakes and trains aren’t trains, what are they?

A: Snakes and trains, like the particles of physics, have no objective, observer-independent features. The snake I see is a description created by my sensory system to inform me of the fitness consequences of my actions. Evolution shapes acceptable solutions, not optimal ones. A snake is an acceptable solution to the problem of telling me how to act in a situation. My snakes and trains are my mental representations; your snakes and trains are your mental representations.”[[32]](#footnote-32)

In other we humans see snakes and trains in the way we do because of the specifics of our optical anatomy. Therefore, we can only know/visualise snakes and trains exactly as per the anatomical qualities of our eyes and the physiology of the optics in our brains and no more. Given experiences and memories, we humans learn that we must never walk in front of a moving train or come near a snake, *but that does not mean what we are seeing is the ‘Reality’ of these two entities*. This is what Hoffman is trying to tell us – do not confuse what you see for ‘Reality.’

Let us speak of a person, , who happens to be observing a Vision, which in our example is a snake. The snake’s character is denoted by minus one because it happens to be a dangerous snake.

Me.1[[33]](#footnote-33) - ⊂

The point here is that will tend to ‘believe’ the Vision he is seeing of the snake is the real and the only vision there is of that perceived entity. But, of course, the Vision of the snake is not just – the snake has an infinite number of Images, visions, appearances and ‘realities’, depending on the factors we previously discussed.

Thus, to a bee, the snake may look like - . Note that the number two indicates an entirely different Image or vision of the snake, plus the bee may not necessarily perceive it as threatening and that is why we write a zero in the top right-hand side, because the bee may see the snake is harmless, or neutral.

Suppose another person sees the snake from a distance and now he/she will also see a different Image, Vision of the snake. Because he/she stand far away from the snake, there is no sense of threat from the Observed Entity. Or we can write that the Vision that is described here is of the self-same entity and that it may look like this - . The point here should be clear by now – there are an **infinite** number of Images, appearances, manifestations of the snake and **therefore no one can say they have most ‘accurate representation’ of the snake or of any perceived object, event, sense et al.**

1. Kant named this as “allness.”

   8. HYPOTHESIS AND THEORY article Front. Hum. Neurosci., 24 February 2022  
   Sec. Cognitive *Neuroscience*Volume 16 - 2022 | <https://doi.org/10.3389/fnhum.2022.767612>. “The brain is entirely made of electromagnetism (EM) phenomena from the level of the atoms up. The EM field literally manifests the computations, or signalling, or information processing/activities performed by connected cellular ensembles that generate a 1st-person perspective. An investigation into the EM field at the cellular scale provides the possibility of identifying the outward signs of a mechanism in fundamental terms (physics), as opposed to merely describing the correlates of our mental abstractions of it.” [↑](#footnote-ref-1)
2. Though, as with most of these limitations, most of us choose to ignore these limitations and/or we are genuinely unaware of them and assume we can perceive a ‘totality’ of a perceived object in its entirety. [↑](#footnote-ref-2)
3. Assuming the chair has no sentimental value. [↑](#footnote-ref-3)
4. <http://www.nhm.ac.uk/discover/how-do-other-animals-see-the-world>. [↑](#footnote-ref-4)
5. WEALE, R. Limits of Human Vision. *Nature* 191, 471–473 (1961). <https://doi.org/10.1038/191471a0>. [↑](#footnote-ref-5)
6. [Joelle Hanson-Baiden](https://www.news-medical.net/medical/authors/joelle-hanson-baiden), How is Reality Constructed in Our Brain? News Medical Life Sciences. <https://www.news-medical.net/health/How-is-Reality-Constructed-in-the-Brain.aspx>. [↑](#footnote-ref-6)
7. And yet how *few* of us human beings are aware of this counterintuitive fact! [↑](#footnote-ref-7)
8. TED Radio Hour. *NPR*. ‘Anil Seth: ‘How does your brain construct Conscious Reality?’ [October 5, 2018]. <https://www.npr.org/transcripts/654730916>. [↑](#footnote-ref-8)
9. Anil Seth, The Neuroscience of Reality. [September 1, 2019]. *Scientific American*. [https://www.scientificamerican.com/article/the-neuroscience-of-Reality/](https://www.scientificamerican.com/article/the-neuroscience-of-reality/). [↑](#footnote-ref-9)
10. [↑](#footnote-ref-10)
11. Visible Light: Eye-Opening Research at NNSA, [National Nuclear Security Administration. U.S. Department of Energy. <https://www.energy.gov/nnsa/articles/visible-light-eye-opening-research-nnsa#:~:text=The%20entire%20rainbow%20of%20radiation,is%20known%20as%20visible%20light>.. [↑](#footnote-ref-11)
12. Jenny Marder, ‘That dress isn’t blue or gold because color does not exist.’ *PBS News Hour/ Science*. https://www.pbs.org/newshour/science/that-dress-isnt-blue-or-gold-because-color-doesnt-exist . [February 27, 2015]. ““A color only exists in your head,” Lotto said. “There’s such a thing as light. There’s such a thing as energy. There’s no such thing as color.” Beau Lotto, professor of neuroscience at University College London. [↑](#footnote-ref-12)
13. Shang Z, Wang Y, Bi T. How Does Fearful Emotion Affect Visual Attention? Front Psychol. 2021 Jan 8;11:584412. doi: 10.3389/fpsyg.2020.584412. PMID: 33488451; PMCID: PMC7820678. [↑](#footnote-ref-13)
14. # *Pearson, Eyecare, Arrowhead*. ‘How the Environment Can Affect Your Vision and Eye Health.’ [November 3, 2022]. <https://www.pearsoneyecarearrowhead.com/2022/11/03/how-the-environment-can-affect-your-eyes-2022/#:~:text=Environmental%20Factors%20Can%20Damage%20Your%20Vision&text=UV%20radiation%20raises%20the%20risk,ocular%20itching%20and%20blurred%20vision>.

    [↑](#footnote-ref-14)
15. Neuroscience: Smells affect sight. *Nature* 466, 162 (2010). <https://doi.org/10.1038/466162e>. [↑](#footnote-ref-15)
16. [*Curr. Biol.* doi:10.1016/j.cub.2010.05.059 (2010)](https://doi.org/10.1016/j.cub.2010.05.059). [↑](#footnote-ref-16)
17. Common Eye Disorders & Diseases. [*National Center for Chronic Disease Prevention and Health Promotion*](https://www.cdc.gov/chronicdisease/about/index.htm). [December 19, 2022]. Examples include, Refractive Errors, Age-Related Macular Degeneration, Cataract, Diabetic Retinopathy, Glaucoma, Amblyopia, Strabismus. [↑](#footnote-ref-17)
18. # Masahiko Yamakawa et al, A quantitative analysis of the contribution of melanopsin to brightness perception, *Scientific Reports* (2019). [DOI: 10.1038/s41598-019-44035-3](http://dx.doi.org/10.1038/s41598-019-44035-3).

    [↑](#footnote-ref-18)
19. Lappin, J. S., & Bell, H. H. (2021). Form and Function in Information for Visual Perception. *I-Perception*, *12*(6). <https://doi.org/10.1177/20416695211053352>. [↑](#footnote-ref-19)
20. Case Guard, *How many frames per second can the human eye see?* March 2, 2021. There is currently a general consensus that the eye moved at a range between 30 to 60 FPS [Frames Per Second]. <https://caseguard.com/articles/how-many-frames-per-second-can-the-human-eye-see/#:~:text=The%20visual%20cues%20in%20the,to%2060%20frames%20per%20second>. [↑](#footnote-ref-20)
21. Horng CT, Hsieh YS, Tsai ML, Chang WK, Yang TH, Yauan CH, Wang CH, Kuo WH, Wu YC. Effects of horizontal acceleration on human visual acuity and stereopsis. *Int J Environ Res Public Health*. 2015 Jan 19;12(1):910-26. doi: 10.3390/ijerph120100910. PMID: 25607601; PMCID: PMC4306901. [↑](#footnote-ref-21)
22. # [J Kevin McKinney MD](https://www.aao.org/biography/9b1680a8-2729-45f3-9d3e-dbc4fbbbe757), [G Atma Vemulakonda, MD](https://www.aao.org/biography/4a89bb0e-cdeb-467c-ad06-ad413ba88291), [October 16, 2020], Exercise May Stave Off Eye Disease, Study Finds. *American Academy of Ophthalmology*. <https://www.aao.org/eye-health/news/exercise-may-slow-prevent-eye-disease-study-finds>.

    [↑](#footnote-ref-22)
23. Rempel D, Willms K, Anshel J, Jaschinski W, Sheedy J. The effects of visual display distance on eye accommodation, head posture, and vision and neck symptoms. *Hum Factors*. 2007 Oct;49(5):830-8. doi: 10.1518/001872007X230208. PMID: 17915601. [↑](#footnote-ref-23)
24. Xu S, Zhang S and Geng H (2018) The Effect of Eye Contact Is Contingent on Visual Awareness. *Front. Psychol*. 9:93. doi: 10.3389/fpsyg.2018.00093. [↑](#footnote-ref-24)
25. Shan Xu, Shen Zhang, Haiyan Geng, ‘The effect of eye contact is contingent on visual awareness.’ Front Psychol., [07 February 2018].Sec Cognitive Science. Volume 9 - 2018 | <https://doi.org/10.3389/fpsyg.2018.00093>. <https://www.frontiersin.org/articles/10.3389/fpsyg.2018.00093/full>. [↑](#footnote-ref-25)
26. Hamdy M.Youssef, Alaa A.El-Bary, [2020], The thermal behavior analysis of the human eye under the heat conduction law with one relaxation time. *Science Direct, Alexandria Engineering Journal*, Vol. 59, Issue 6, pp. 5263-5271. <https://doi.org/10.1016/j.aej.2020.09.054>. [↑](#footnote-ref-26)
27. Kerstin Gidlöf, Gastón Ares, Jessica Aschemann-Witzel, Tobias Otterbring, [2021], Give us today our daily bread: The effect of hunger on consumers’ visual attention towards bread and the role of time orientation. *Elsevier*, Vol. 88, No. 104079. <https://doi.org/10.1016/j.foodqual.2020.104079>. [↑](#footnote-ref-27)
28. With humans we usually have around 150 to 200 degrees of vision. [↑](#footnote-ref-28)
29. [Vicky Stein](https://www.space.com/author/vicky-stein" \t "_self), [Charlie Wood](https://www.space.com/author/charlie-wood), ‘What is String Theory?’ [January 20, 2022]. *Space.com*. The latest theory is, of course String Theory. But we can ask, ‘What are these strings made of?’ We will hear that they are energized vibrations that produce sub-atomic particles. But we can still ask the same questions, ‘What are these energized vibrations made from?’ <https://www.space.com/17594-string-theory.html>. [↑](#footnote-ref-29)
30. Bar-Ilan University. "In visual memory, size matters: Study shows that the larger an Image, the better we remember it." *ScienceDaily*. [23 January 2022]. <www.sciencedaily.com/releases/2022/01/220121094310.htm>. [↑](#footnote-ref-30)
31. Vanderbilt University. "'Mind's Eye' Influences Visual Perception." *ScienceDaily*. ScienceDaily, [4 July 2008]. <www.sciencedaily.com/releases/2008/07/080703145849.htm>. [↑](#footnote-ref-31)
32. Amanda Gefter, ‘The evolutionary argument against Reality.’ *Quanta Magazine*. [April 21, 2016]. [https://www.quantamagazine.org/the-evolutionary-argument-against-Reality-20160421/](https://www.quantamagazine.org/the-evolutionary-argument-against-reality-20160421/). [↑](#footnote-ref-32)
33. ‘Me’ = ‘Mind equation. [↑](#footnote-ref-33)