

Perception Basics

Seeing is believing

The Standard View

- We know a large variety of things:
 - our immediate environment,
 - our own thoughts and feelings
 - commonsense facts about the world
 - scientific facts
 - mental states of others
 - the past
 - mathematics
 - conceptual truths
 - morality
 - the future
 - religion

Sources of knowledge

- Our primary sources of knowledge are:
 - Perception
 - Memory
 - Introspection
 - Reasoning
 - Testimony
 - Rational insight

Challenges to the Standard View

- Radical scepticism
 - “Skeptics think that *The Standard View* is far too charitable and self-indulgent. They think that our confident assertion that we know a lot results from a rather smug self-confidence that is entirely unjustified.” (Feldman, p. 6)
- The Naturalistic View
 - The philosophical project of using conceptual analysis to understand human knowledge is a total failure.
Hand the problem over to the scientists.
- Relativism
 - There’s a lot of cognitive diversity concerning knowledge claims. Who’s to say that one view is right and the rest wrong?

Realism and alternatives

- Realism
 - The external world consists of material objects that exist independently of mind. This is why our sense impressions are stable and consistent.
- Berkeleyan Idealism
 - Rather like Descartes' 'evil genius' scenario, our ideas of material objects are actually derived from ideas in God's mind. So there's no matter, but only minds and their ideas.
- Phenomenalism
 - The only way to avoid Humean scepticism about the external world is to say external objects are no more than "permanent possibilities of sensation".

What is *belief*?

- For philosophers a belief is simply something a person takes to be the case, something that is true from that person's point of view. E.g.
 - *Langara College is in Vancouver*
 - *Earth's atmosphere is mostly nitrogen*
 - *Whales are mammals*
 - *Shakespeare wrote many plays, etc.*
- Beliefs are supposed to be true. That's their purpose. A false belief is therefore deficient.

What is truth?



- Maps can be compared to each other, and found to agree, or to differ, in various respects.
- Can maps also be compared with “reality”, “the external world”, or “the facts”?

What is knowledge?

1. We can all agree that knowledge is a special kind of belief.
 - You can't *know* something if you don't even *believe* it!
2. Knowledge is a *superior*, “high status” kind of belief.
 - Telling someone “you don't really *know* that” is a **negative evaluation** of their belief. You're saying that their belief is deficient, sub-par, or not meeting some standard.
 - Since a false belief is deficient in at least one respect, false beliefs do not qualify as knowledge.
3. Beyond points 1 and 2, things get controversial!

Sensation and belief

- Sense perception is a biological process, e.g. like sneezing. We have *some* control over it.
- The outcome of sense perception is (usually) a belief about the external world, e.g. *there's a tree over there*.
- Thus vision, hearing, etc. are “cognitive mechanisms”, or “belief-forming processes”. (“Faculties of judgement” in older terminology.)
- (Does sensation ever *not* lead to belief about the external world?)

“Propositions”

- A *proposition* is the content of a belief, i.e. the “thing” that is believed.
- Two people cannot literally share the same belief, but can believe the same proposition.
- Propositions include general concepts (e.g. square, lemon, earlier than) and also individual objects (e.g. Aunt Edna, New York City)
- These “objects” are subjective rather than objective, but they represent external objects.

Internal objects and belief states

- If someone believes that Hesperus and Phosphorus are distinct planets, then these sentences express different propositions:
 - Hesperus has no moon
 - Phosphorus has no moon
- How then do ‘Hesperus’ and ‘Phosphorus’ contribute to the proposition expressed?
 - Their meanings are surely components of the person’s ‘subjective world”, i.e. they are *internal* objects.

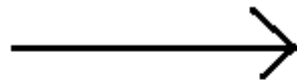


Hesperus, with our moon.

What does “Superman is Clark Kent” mean?



Initial epistemic state



"Superman *is*
Clark Kent"



Expanded epistemic state

- How is the meaning different from “Superman is Superman”?

Internal objects and belief states



Initial epistemic state

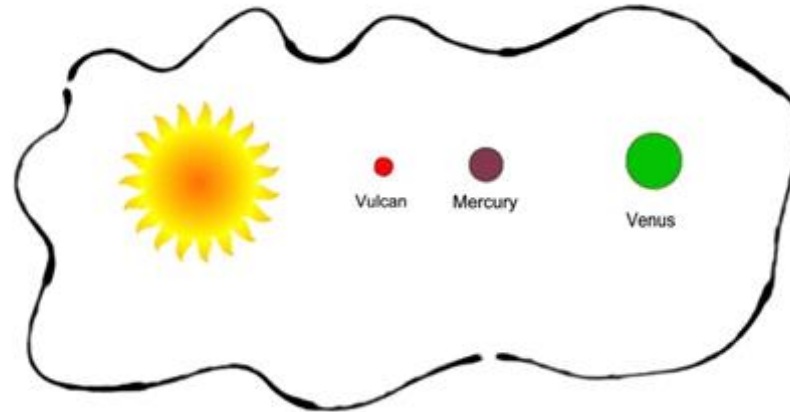


The cat is on the mat



Expanded epistemic state

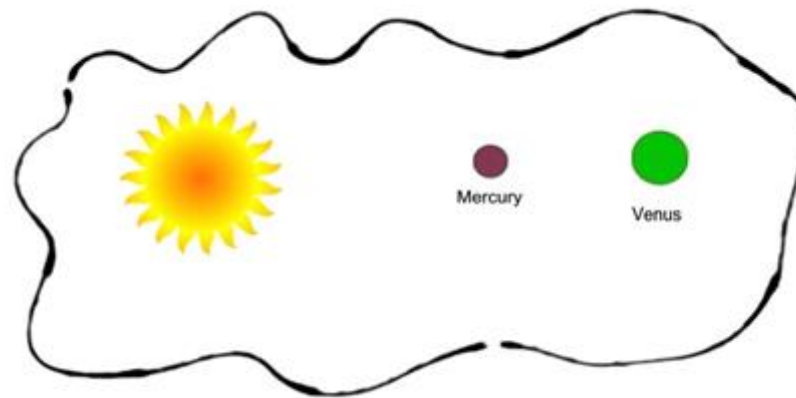
What can “Vulcan does not exist” mean?



Subjective world of
Le Verrier, 1860.



Vulcan does not exist



Subjective world
of Einstein, 1916.

- N.B. Don't say that 'Vulcan' here *refers to* a planet-idea rather than an actual planet.
 - Why?
- It's more subtle than that. A person who believes in Vulcan *intends* to refer to a real planet. And even a person who says 'Vulcan does not exist' is denying the existence of a *planet*, not an idea.
 - An internal object is not something we talk *about*. Rather, it's a tool (or vehicle) we use to talk about external things.

N.B.

- We have to distinguish between:
 - “I am conscious of X”, and
 - “X is a component of my conscious experience”
- If you have a hunting rifle, then what do you shoot?
 - Deer? Rabbits? Foxes?
 - *Bullets?*

Perception

- How does a belief differ from a perception?
 - Are the *experiences* the same?
- In the case of vision, there is a special experience, a visual sensation, that you don't get from a mere belief. Vision gives you a vivid sensation of coloured 3D objects in front of you.
 - Other sense experiences (hearing, smell, taste, etc.) are also associated with sensations.

The visual field

- The “visual field” is the spatial array of visual sensation.
- It consists of 3D objects, which are coloured, in a 3D space.
- The visual field is **propositional** -- it “contains” propositions in a certain sense, as well as concepts, and internal objects called *percepts*.
- Do we *see* percepts?
- Or do we perhaps see external objects *through* our percepts?

Are visual percepts 2D or 3D?

- I don't get why sense data are traditionally considered to be two-dimensional.
- Surely the case of 3D movies shows that percepts are 3D (at least when close enough to the viewer)?

Seeing vs. inferring

- There's a difference between what we see, and what we *infer* from that.



Seeing vs. inferring

- An “inference” is forming a belief on the basis of old beliefs, by means of logical reasoning, math calculations, etc.
- E.g. you may **see** a chair next to the kitchen counter, the cookie jar on the counter open, and cookie crumbs on the floor nearby.
- You **infer**:



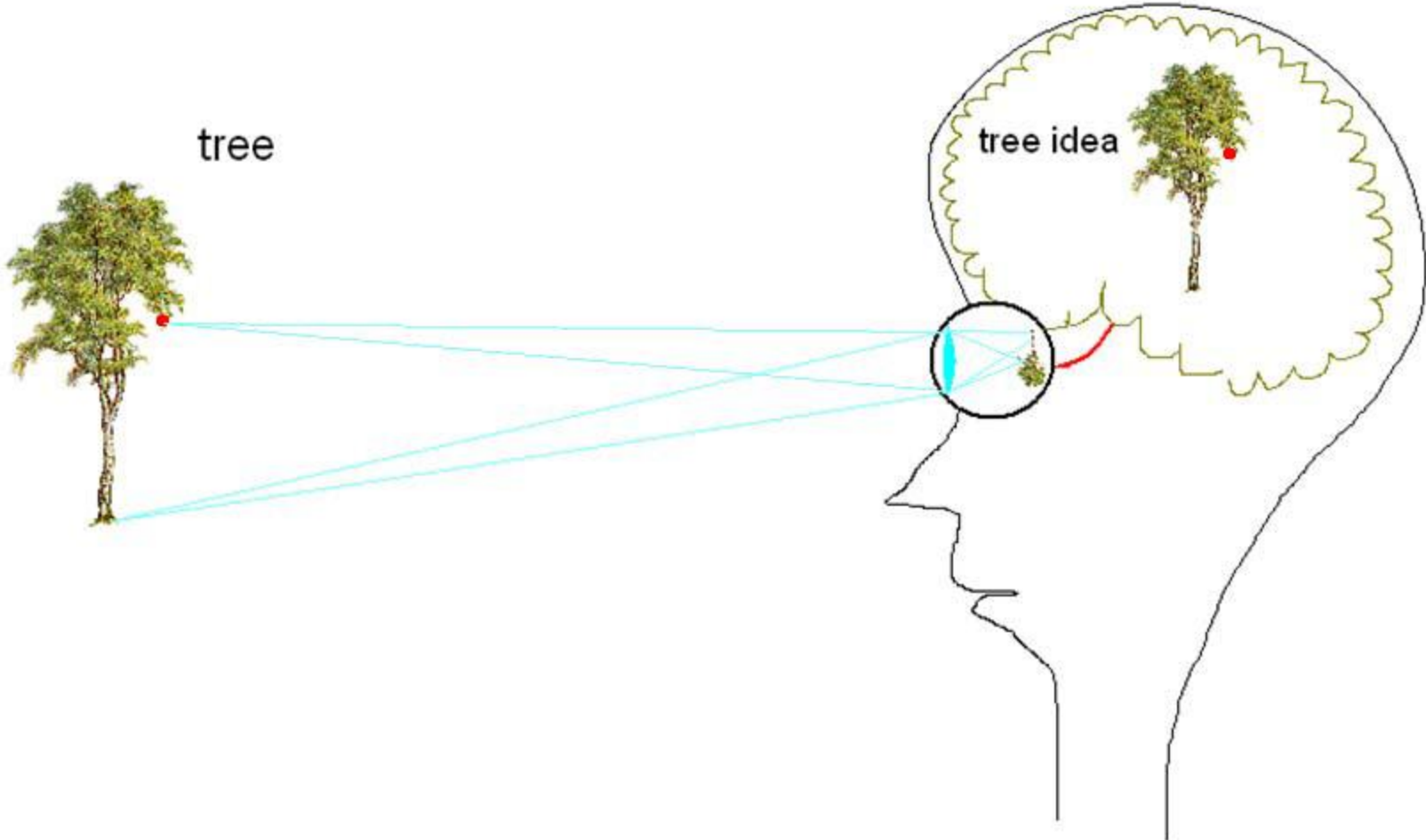
Representative Realism

- This is what most philosophers believe (including e.g. Descartes and Locke).
 - Perception on this view involves the construction (or inference) of ideas which *represent* external objects.
 - The perceiver is directly aware of their own ideas, and only indirectly aware of external objects.
 - Some philosophers (e.g. Huemer) think this isn't the right way to describe the situation.

Direct realism

- “It also seems clear that when men follow this blind and powerful instinct of nature they always suppose that the very images that their senses present to them are the external objects that they perceive; it never crosses their minds that sensory images are merely representations of external objects.”
- Hume, *Enquiry*, Section 12, Part 1

percept, internal object, sensum, idea



Evidence for a representation

- What evidence is there that, during vision, the brain infers or “constructs” a mental representation of the objects in front of the viewer?
- The main evidence comes from hallucinations and illusions.

Hallucinations



Optical Illusions



3D movies



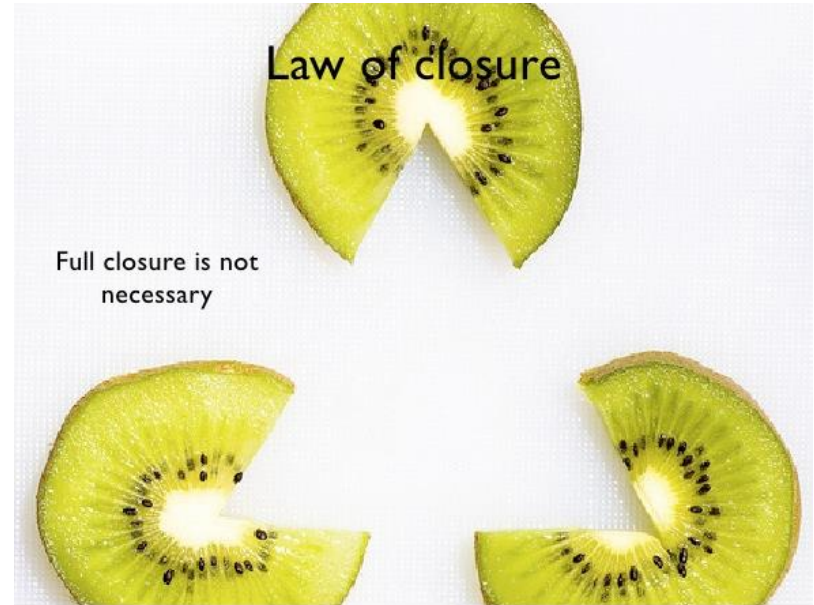
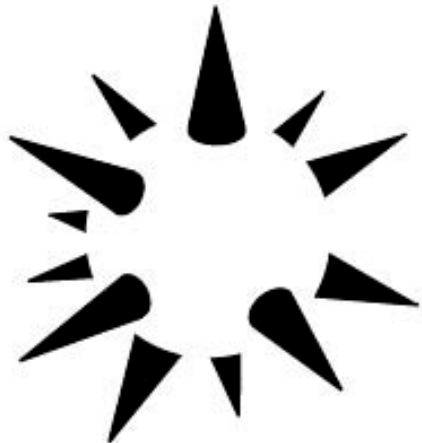
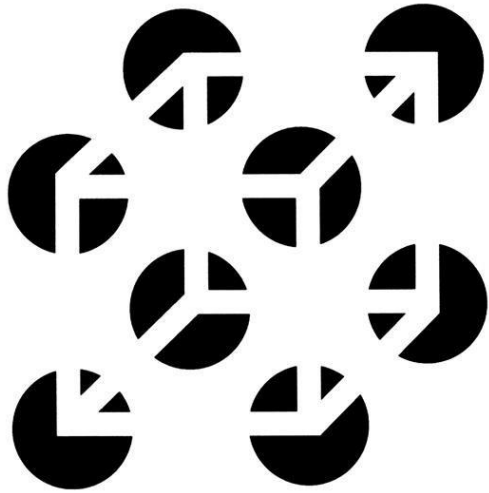
Hollow face

Notice the moving nose ring
as well as . . .

The T rex doesn't move!



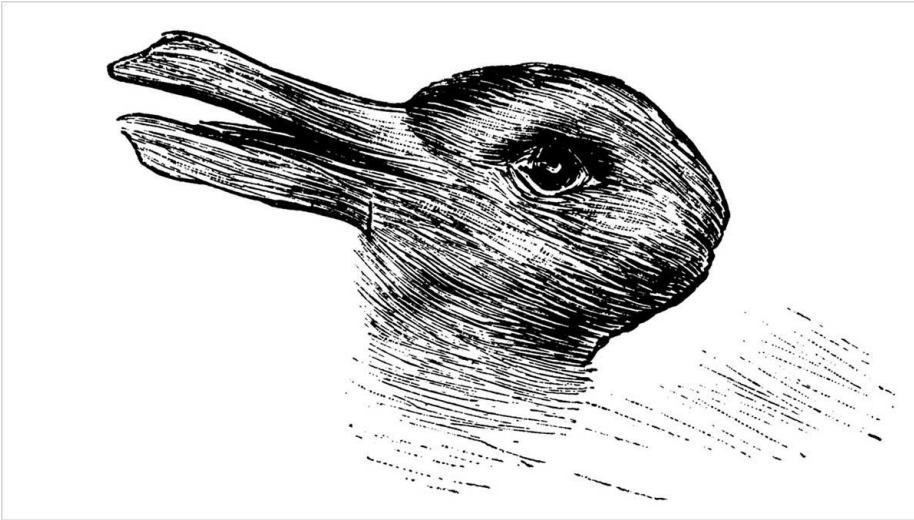
Law of Closure



Law of closure

Full closure is not
necessary

Gestalt shift



Hume's argument against DR

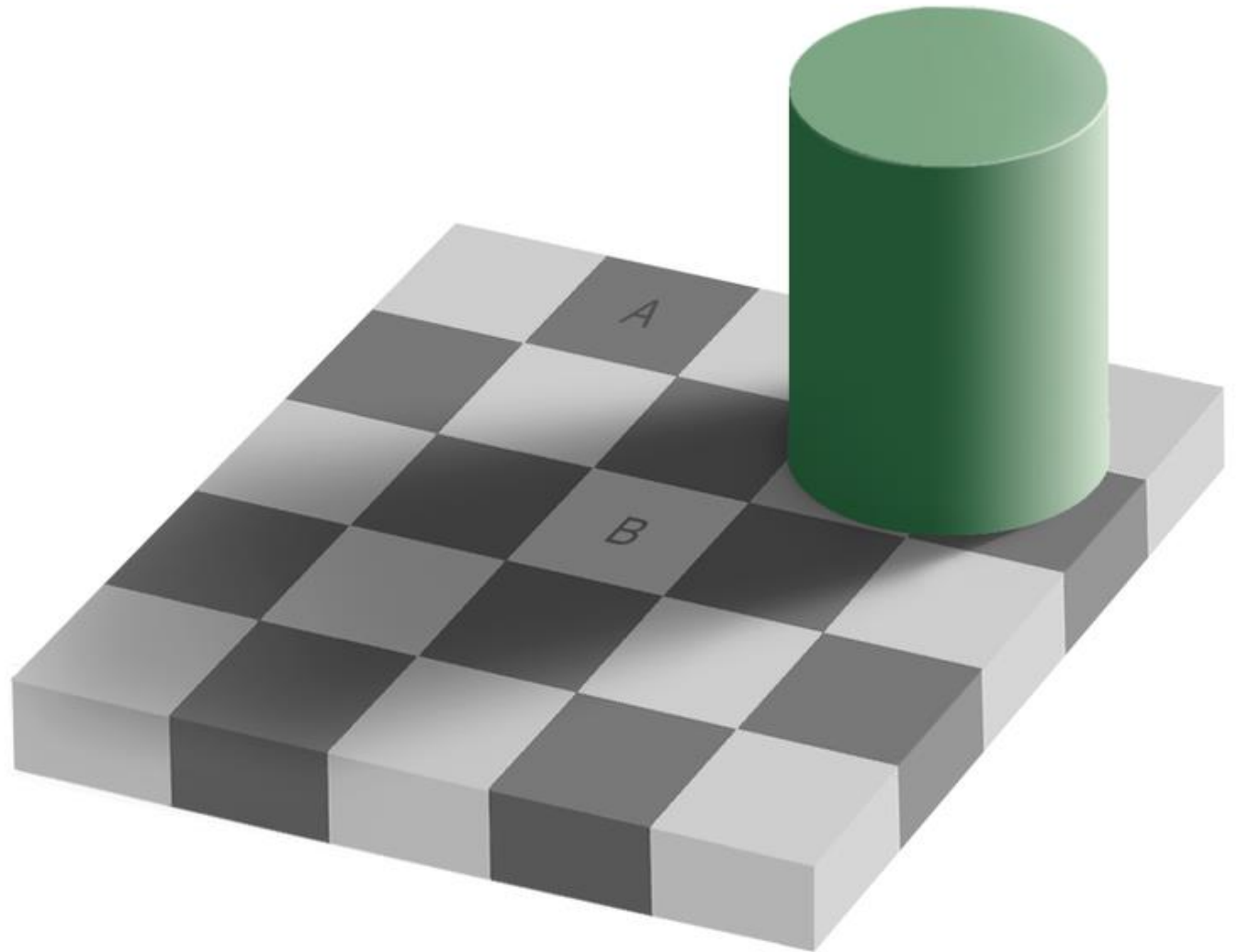
“The table that we see seems to shrink as we move away from it; but the real table that exists independently of us doesn't alter; so what was present to the mind wasn't the real table but only an image of it.”

- David Hume, *Enquiry Concerning Human Understanding*, Section 12: The sceptical philosophy, Part 1.
- (But does the table really *seem to shrink*? Rubbish!)

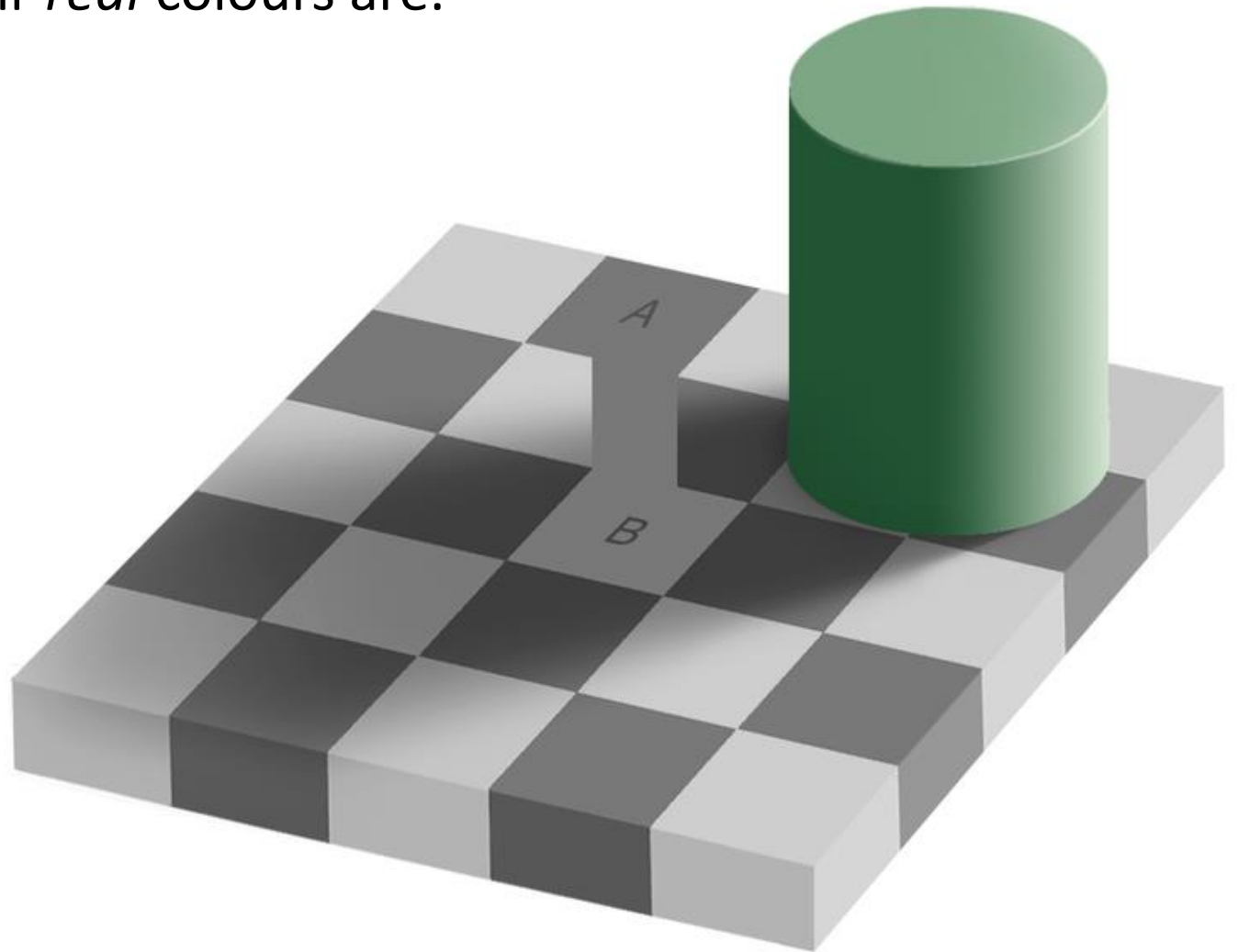


- How big is the man?

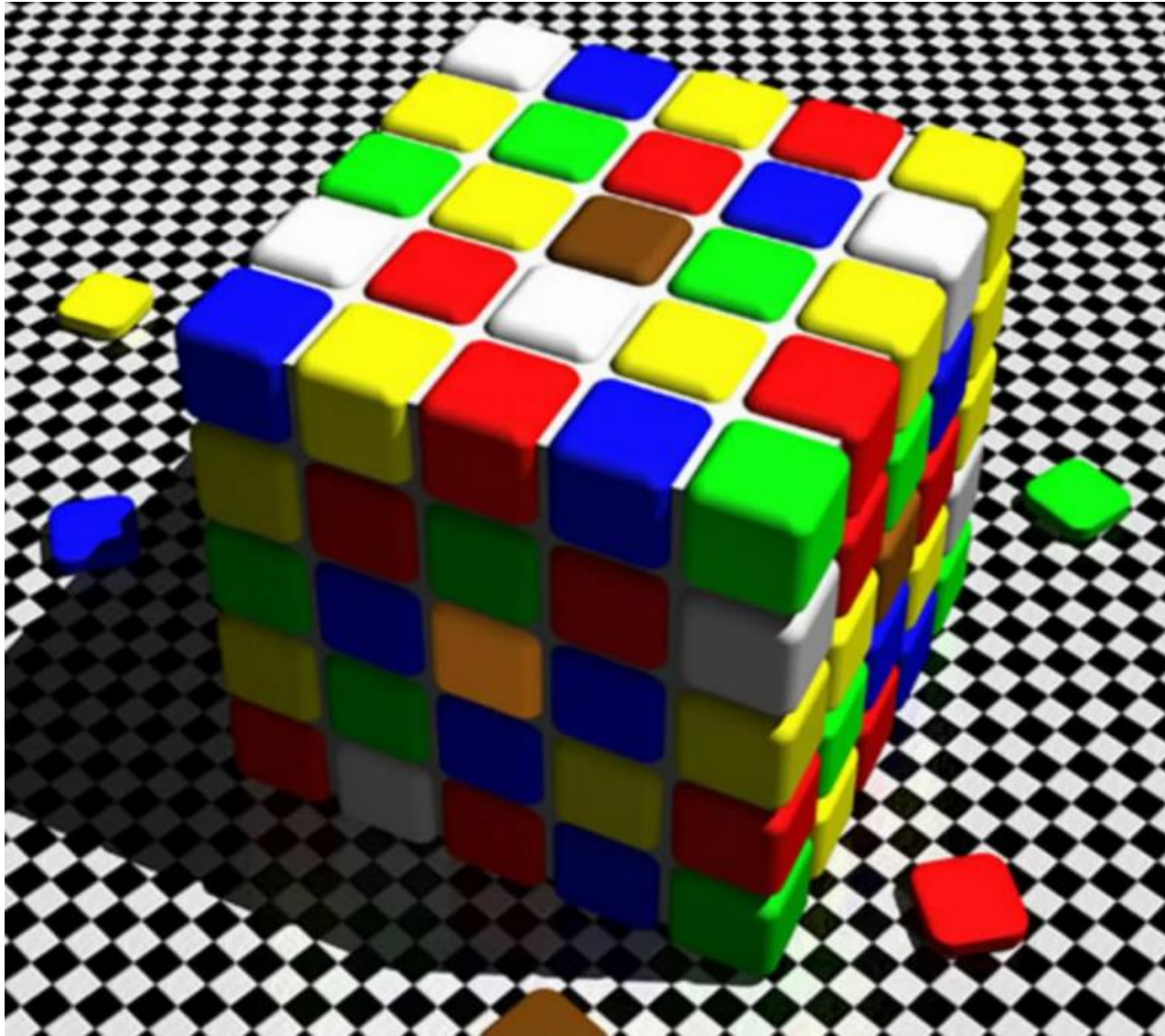
- How do the colours of A and B compare?



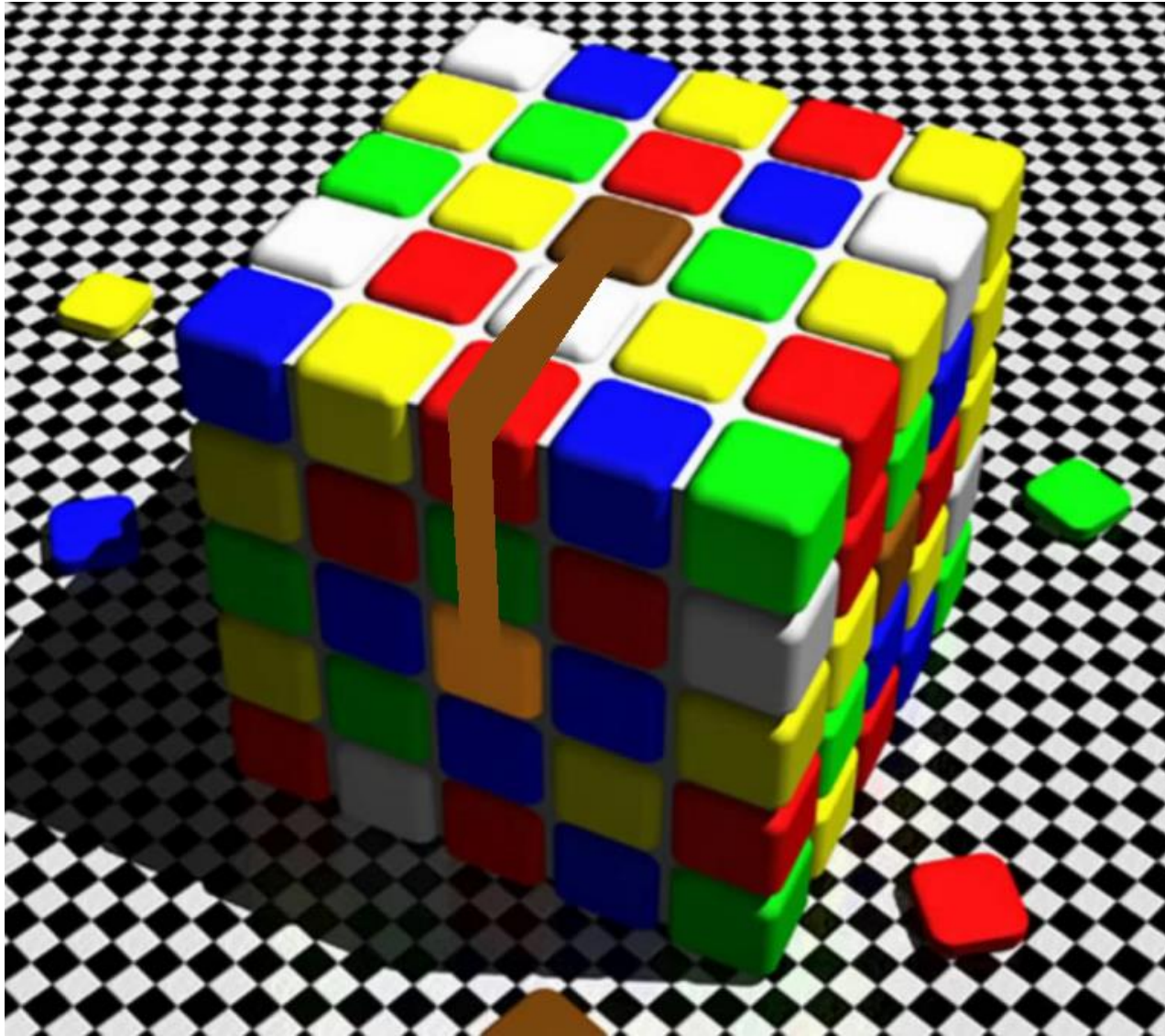
The *same paint* is used in the picture, but the brain compensates for the shadow, and presents them as how (it thinks) their *real* colours are.

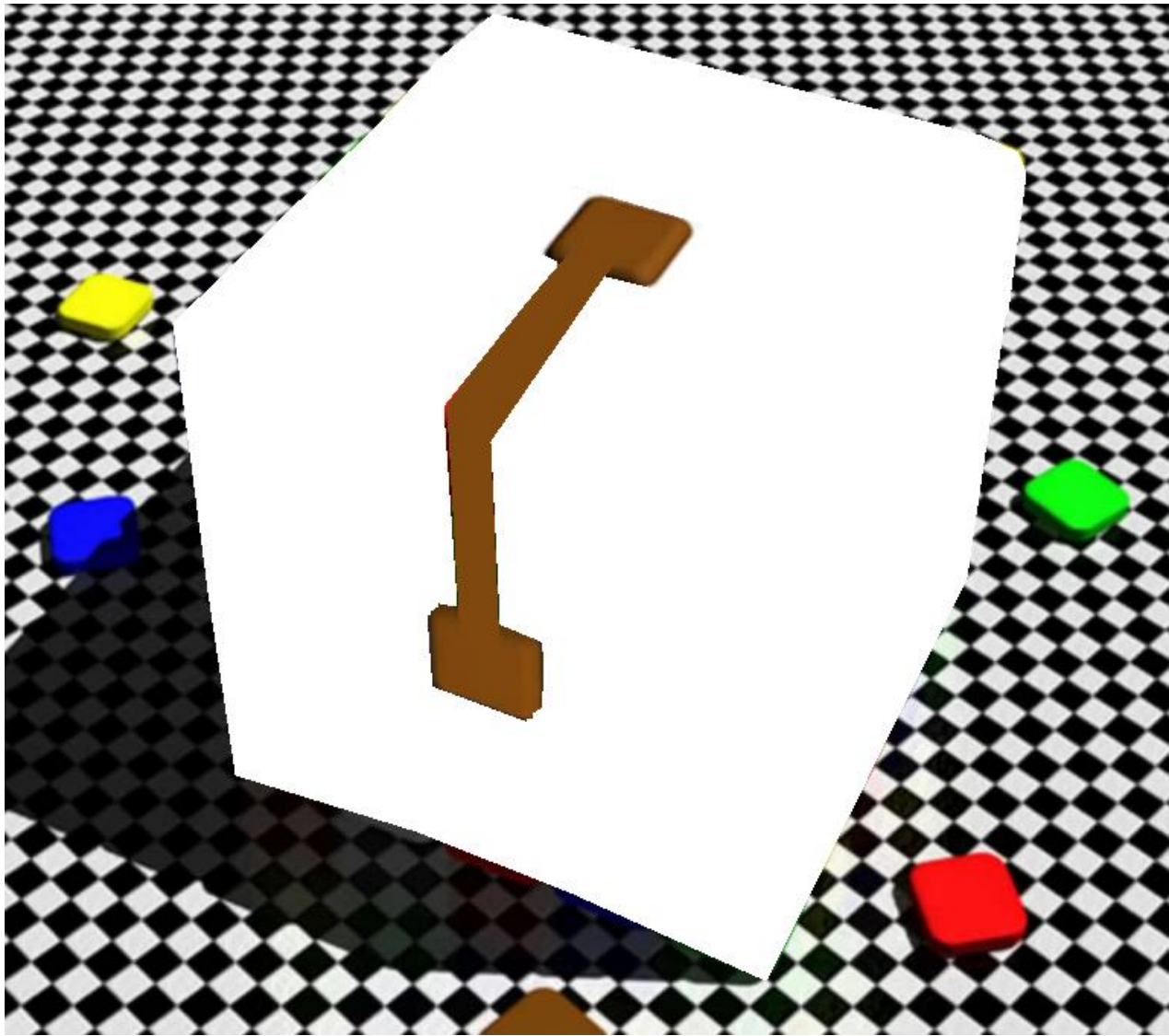


How do the centre squares compare?



How do the centre squares compare?



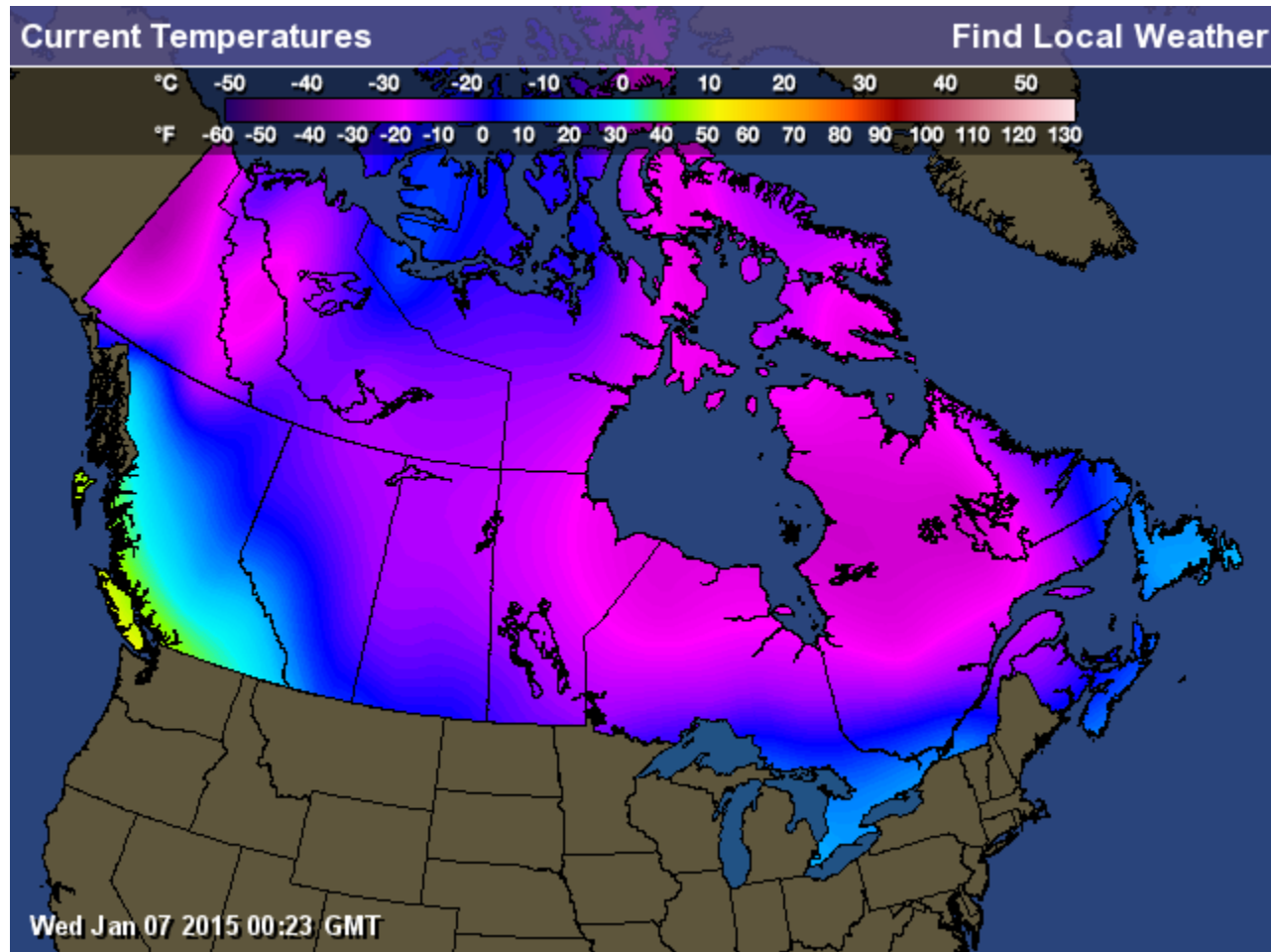


The Argument from Illusion

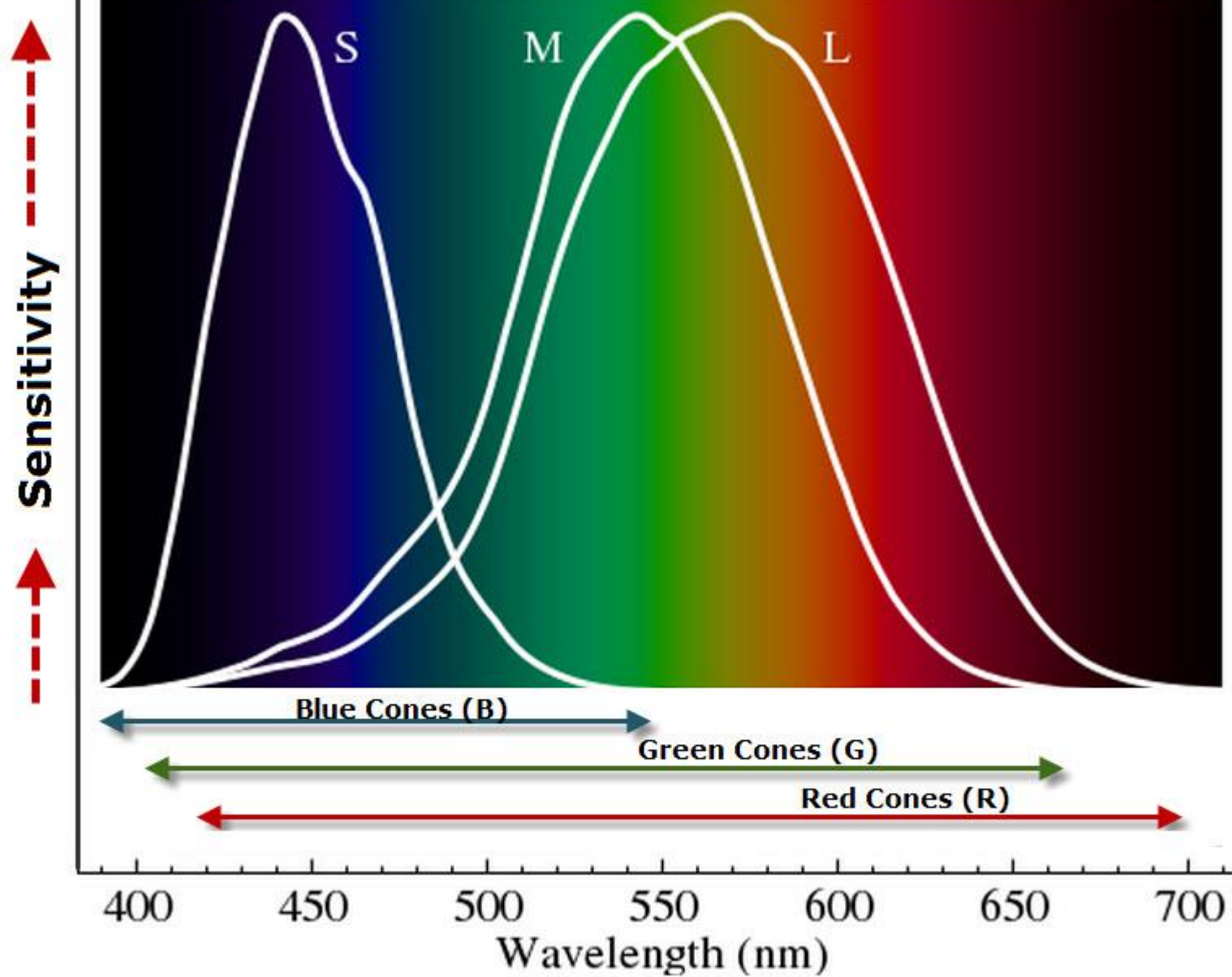
1. When viewing a straight stick half-submerged in water, one is directly aware of something bent.
2. No relevant external thing is bent in this situation.
3. What one is directly aware of in cases of illusion is *the same kind of thing* that one is directly aware of in normal, non-illusory perception.

- ∴ 4. In cases of illusion (and hallucination), one is directly aware of something internal. (from 1 and 2)
- ∴ 5. In normal perception, one is directly aware of internal things. (from 3 and 4)

Non-literal representation



Light Response Spectra for Human Light Receptors (Cones)

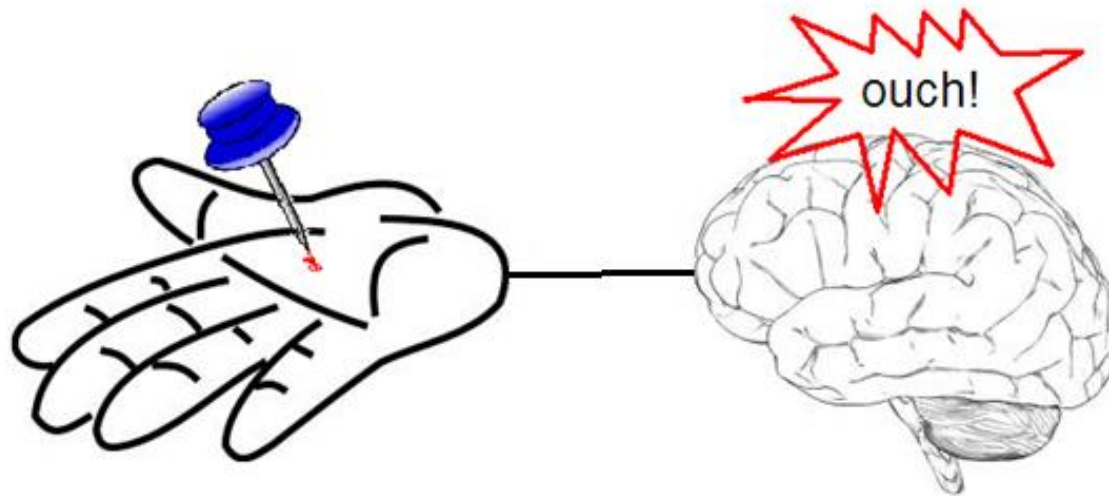


'Primary' and 'Secondary' Qualities

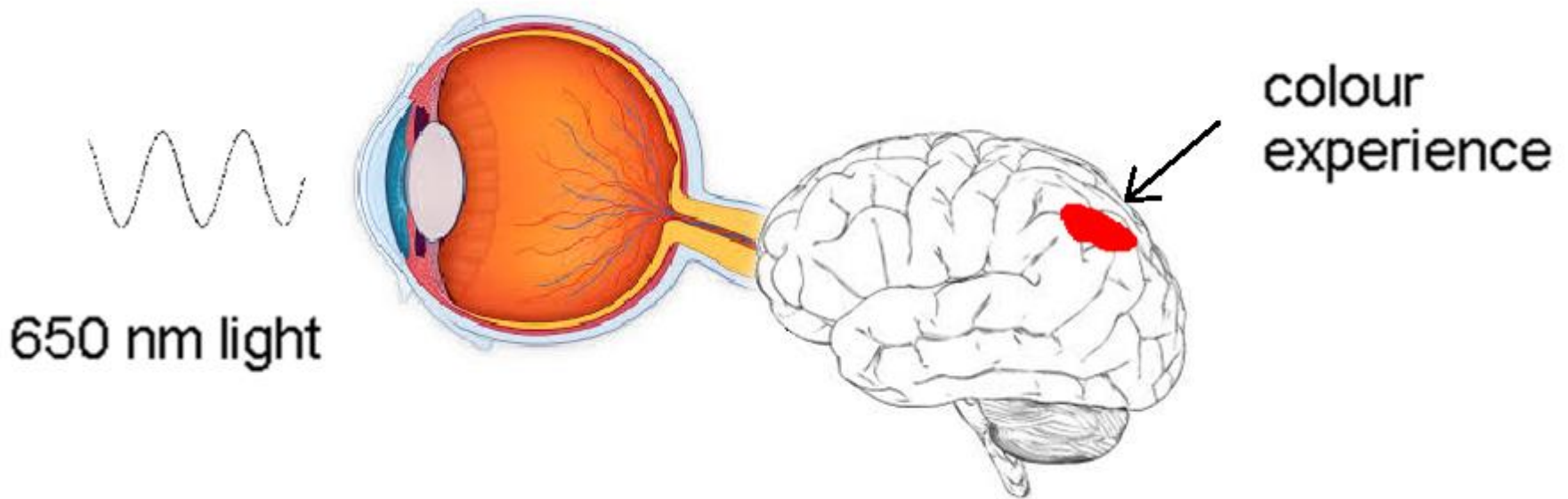
- *Primary qualities*: Qualities of objects that are represented literally by our percepts (by the same property). [Sizes, shapes, motions, etc.]
- *Secondary qualities*: Qualities of objects that are represented non-literally, i.e. by very different properties in the percept. [Colours, tastes, smells, etc.]
- John Locke: "... the ideas of the primary qualities of bodies resemble them, and their patterns really do exist in the bodies themselves; but the ideas produced in us by secondary qualities don't resemble them at all. There is nothing like our ideas of secondary qualities existing in the bodies themselves. All they are in the bodies is a power to produce those sensations in us."

Locke's analogy

“It is no more impossible to conceive that God should attach such ideas [such as colours] to motions that in no way resemble them than it is that he should attach the idea of pain to the motion of a piece of steel dividing our flesh, which in no way resembles the pain.”



Is 'red' light actually red?



- The red quality of a visual percept doesn't resemble a wavelength of 650 nanometers (at all!)

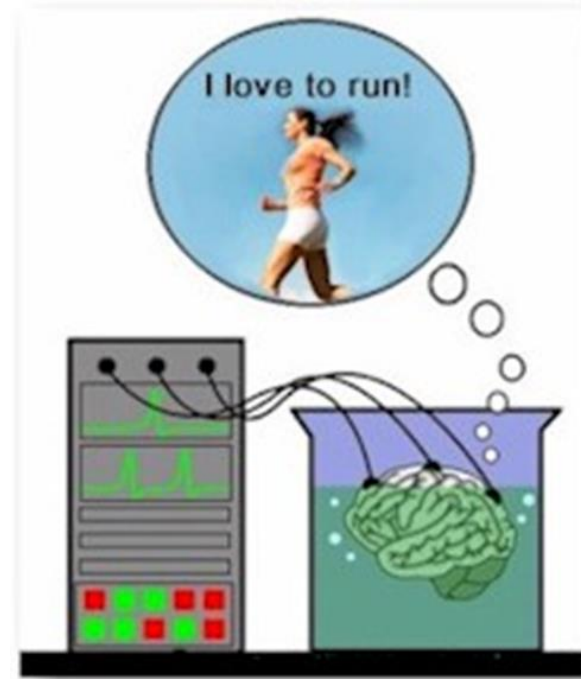
Argument from colour

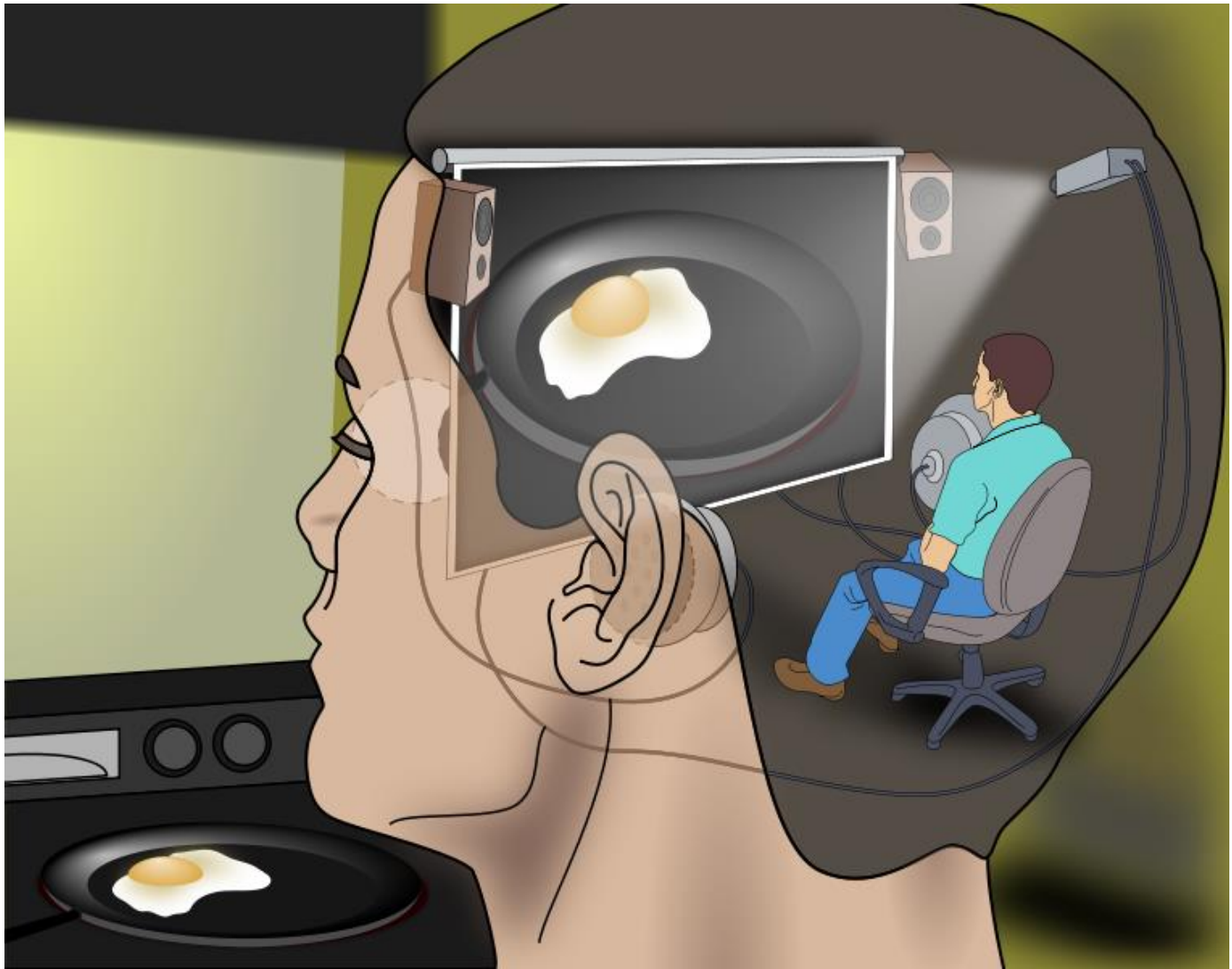
1. Every percept in the visual field has colour.
2. No external thing is coloured.

Therefore, visual percepts are internal.

Scepticism

- Representative realism creates a kind of gap, or veil, between the conscious mind and the external world.
 - This seems to open the door to scepticism about the external world.





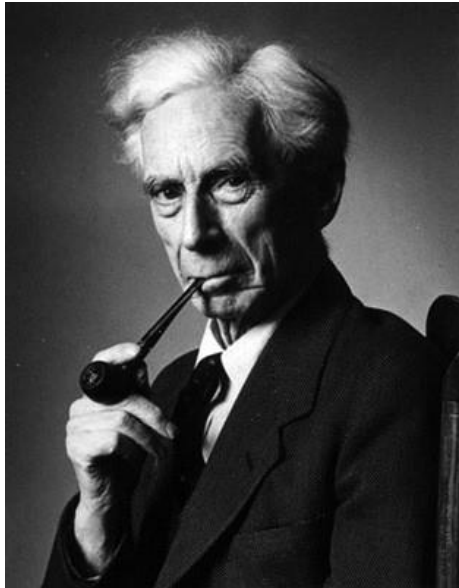
- The 'veil of perception'. Leads to scepticism?

E.g. Can you trust what you only see on TV?



Are there *sense data*?

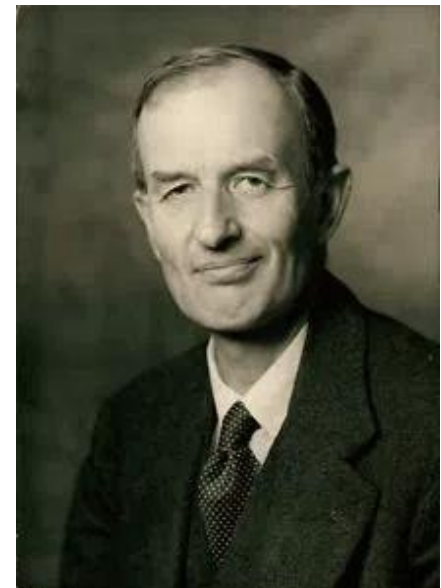
- Some philosophers call percepts *sense data*.
 - But this term has some theoretical baggage attached.



Bertrand Russell



C. D. Broad



H. H. Price

Conditions for being sense data

Sense data are *objects* of some kind, that:

- i. Are the things we are directly aware of in perception, and
- ii. Have the properties that perceptually appear to us.
 - E.g. if I see the T-rex turn its head, then the T-rex sense datum *actually* turns its head.

Objections to sense data

1. Suppose one accepts physicalism, so that sense data are (presumably) in the brain.
 - If I see a red apple, then my sense datum for that apple *really is* red. But (as noted by Locke) the physical world contains nothing resembling our colour sensations.
2. Suppose one accepts Cartesian dualism, so that sense data are (presumably) in the immaterial soul.
 - If I see a spherical ball, then my sense datum for the ball *really is* spherical. But the soul has no spatial (“extended”) qualities.

Are sense data in the head?

One might propose that one's sense data are literally inside one's head. This view would probably seem plausible only if one identified sense data with brain states (as Russell [1927, p. 383] and O'Shaughnessy [2003, p. 186] do). But this is problematic since one's brain states do not generally have the properties that perceptually appear to one. The brain state involved in seeing a table, for example, is not table-shaped. Therefore, if one's sense datum is table-shaped, then the sense datum is not the brain state."

- (Stanford Encyclopedia of Philosophy, "Sense-Data".)
- Is there a solution to this problem? An alternative way to think about percepts?

Adverbial Theory

“the *adverbial theory*, in one version, holds that in perception, we are directly aware of a certain kind of mental state or occurrence, but that **this mental state does not actually possess the properties that appear to us.**

Adverbialists have been known to characterize this mental state in such terms as “being appeared to redly.” When a person is in the mental state of being appeared to redly, say the adverbialists, it does not follow that anything *is* actually *red*. Thus, adverbialists deny that there is anything satisfying all of conditions (i), (ii), and (iii), and therefore deny that there are sense data”

(Stanford Encyclopedia of Philosophy, “Sense-Data”.)

- [According to the adverbial theory] “when I hallucinate a green rat, I sense or am appeared to a-green-rat-ly—or, perhaps better, a-green-rat-shape-ly”



How are percepts related to the minds that experience them?



- According to the adverbial theory, percepts are *properties or modifications* of the experience.
 - (Just as holes in a slice of cheese are just a matter of the cheese having a certain hole-y shape.)

Adverbial Theory

- If there are no red sense data (and adverbial contents are not red) then how do we see red apples?
- Our conscious experience *presents the apple as red*. This doesn't mean that the experience *itself* is red.
- The experience **ascribes** redness to the apple.

E.g. representing steepness



As with sense data, in this map the representation of a steep slope is *itself* steep.

E.g. representing steepness



- The “road” in this map isn’t steep, but it *represents* the external road *as* steep.

Conscious calculators?

- If a conscious calculator could be made, what would we want it to be conscious *of*?
- Could it be conscious of *numbers*, without being aware of how those numbers are represented internally?

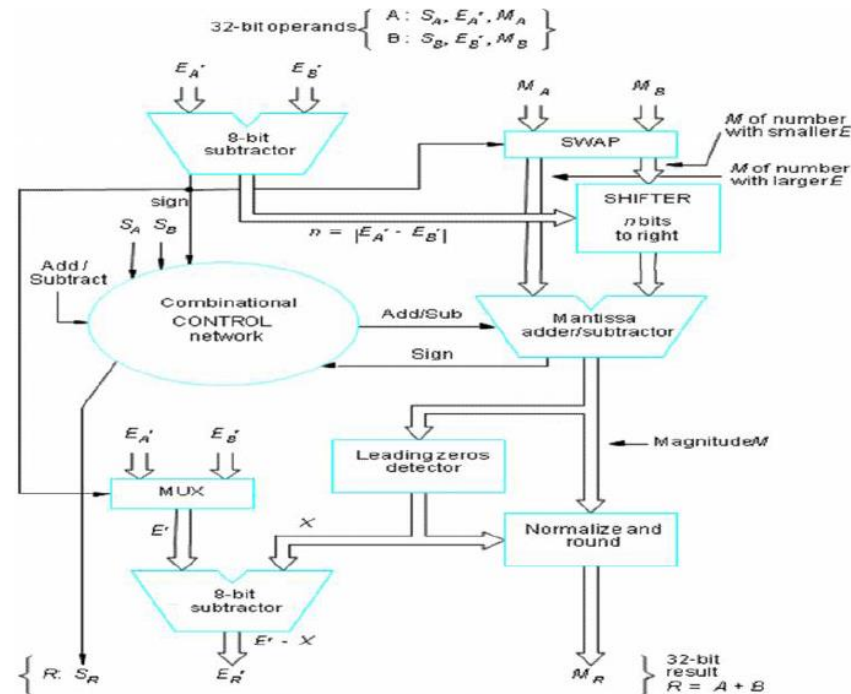
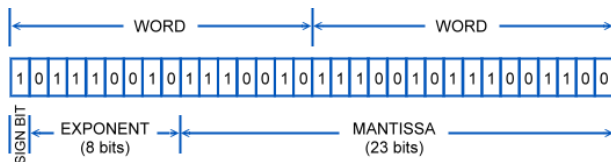


FIG - 22: Floating point Arithmetic

Is perception 'intentionally direct'?

When one sees a tomato, one's visual experience of a tomato is not caused and logically supported by any other apprehension. ... There is nothing ... that one is **aware of** in having those brain states, other than the tomato. One is not aware of, not even seemingly aware of, the brain states themselves, nor of the information they are supposed to be processing; the first thing one is actually aware of is the tomato, as a red, roughly spherical thing.

(Michael Huemer, *Skepticism and the Veil of Perception*, p. 80)