

The saying goes that whenever you put two people in a room, you end up with three opinions. Indeed, there are very, very few things all humans seem to agree on.

(Did you just ponder whether to agree with this statement?)

But there is one thing that all humans - across all time and cultures - seem to agree on. And that is that certain things should remain off-limits, taboo, or tabu.

(There is, of course, no general agreement on the spelling).

In other words, one of the things that seem to universally make us human is that we create tabus.

Science has its own tabus.

Some of the tabus of science are defensible by anyone who agrees to reason.

Illogical thought, for example, immediately disqualifies from science. A scientific theory needs to be free of self-contradiction.

But there are also less self-evident tabus in science. And these usually do not get talked about as much. They are tabu after all.

One such tabu is the role of the first-person perspective, i.e., the personal, private, subjective experience of an observer.

You might have heard that it seems to take an observer (or, at least, something that can do a "measurement") for quantum physics to work. That is a problem, yet hardly tabu to talk about.

The tabu is to acknowledge that ALL of science is fundamentally individualistic.

Science relies on individual minds doing science. That is, science always starts with a first-person perspective. Yet, science seems to insist on complete elimination of this first person perspective.

That is, science aims to be "intersubjective" (a fancy way of saying "objective"). Science abhors the subjective element that it emanates from.

So, while science is done by people, nowhere in science do we seem to appreciate that fact. Science is commonly communicated in a "neutral", third person perspective, as if by an omniscient being: "Measures were taken", "Samples were collected", "Data was analyzed".

By whom?

Some of science's obsession with the third person seems to stem from the idea of a subject-independent perspective that is shared by all. And if there were only one (intersubjective) truth, why bring up the perspective of individuals?

But the fact of the matter is that science also works for a single person. Science does not really need any social interactions at all.

To illustrate that, consider the following thought experiment:

Let us imagine Elizabeth, humanity's most brilliant scientist.

Elizabeth is the sole survivor inside a giant, life-sustaining spaceship that has irreversibly lost its course and communication with the rest of humanity.

Elizabeth is the loneliest human that ever lived. And there is no chance for her to ever get out of that situation.

Elizabeth does not let her get dragged down by that. With all of that lonely, boring time on her hands, she decides to do what she loves the most: science. And since she is such a great scientist, we can only imagine what she is able to uncover in spaceship, and nobody besides her will ever know.

Let us assume Elizabeth finds out about a new form of energy. And she begins using that energy for faster than light travel. And it all works! More than that, she realizes how this discovery unites the physics of the very small and the physics of the very large. She thus works out how to mathematically unite quantum theory with relativistic gravity in a simple set of equations that most contemporary physicists would envy as a "theory of everything". And she goes on to test and confirm the outcome of these equations over and over again.

But she never takes any notes. Why would she? There is, and never will be, anyone else to share it with, after all. All of this amazing science unfolds and exists in her

private, subjective, brilliant mind and memory - exclusively. There is nothing third-person in all of it.

Is this not "true" science?

Do we need to insist on her preparing for some form of "intersubjectivity" - vain as it may be? Would third person products really add anything to her accomplishment - a piece of information that no one will ever see? What would Elizabeth learn by communicating her breakthroughs that she does not already know?

You might want to argue that it is not the actual act of intersubjective sharing of knowledge that is required for science, but its potential. In other words, Elizabeth still does science as long as she could share her first person perspective on her discoveries with others. That makes sense if the subject matter of science, such as equations, remain similar to what it was before there was only a single scientist. Even if that third person perspective is now obsolete.

But what if Elizabeth's breakthroughs contain elements that cannot be shared with others? Since her physics is so advanced, maybe it contains ideas that cannot be transcribed into words or mathematical notation anymore. Something that only Elizabeth's intellect can understand. An idea so vast that any other human would be as perplexed and unable to grasp like an ant tasked to understand Newton's calculus. Would this unshareable idea disqualify all of Elizabeth's accomplishments, her ability to travel faster than light and her theory of everything, from being science?

Such a scenario seems theoretically possible. And yet, we have to admit that Elizabeth's science sounds like science. It works in that it explains physical reality to her in a way that we are used for science to work.

In the light of this thought experiment, the tabu of subjectivity in science is not entirely rational.

Insisting on a third-person perspective thus may never have been more than a practical demand than a logical requirement for science. As long as science is done by multiple people, communication is key after all. But there is no logical reason for science to require more than one scientist.

Why care?

Well, there are two issues at hand. One is that science likes replication, and even repeated observations in a single individual equal just one sample. After all, that single human could be mad, or deluded.

So, the first issue at hand is whether it really takes replication to gain some sense of certainty about laws of nature.

Well, it only takes one black swan to disprove the assumption that there are only white swans in this world.

And there is precedence for that. Einstein's theory was proven by a single sample in the form of a photograph, for example. The theory still holds.

The other issue at hand is more interesting.

There are real limitations to the science of consciousness that hinge on the insistence that first person data is unscientific. This is an increasingly pressing problem.

AI technology is rapidly reaching the point where we are facing the decision as to whether machines can be conscious or not. Ethical and moral dilemmas arise the moment we lean one way or another.

The current impasse arises from the fact that we do not yet have a scientific understanding of consciousness. There are theories on how physical matter and energy give rise to consciousness. But virtually everyone agrees that testing these theories runs into the problem that consciousness can only be experienced – that is, scientifically tested – in the first person perspective.

We have tried many alternatives to test for the existence of consciousness (say, in people that appear to be comatose). These tests all rely on behavior, actions or functions that arise in the third person perspective.

And therein lies the problem – AI increasingly does all of these things. Yet, most people do not believe it to be conscious (yet).

Philosophers have noticed that issue a long time ago. They warned us that a theoretical zombie that looks, talks, and acts like us would be accepted as a conscious human being, even if it were completely dead inside. A clever, impressive, and convincing magic trick that all of us would fall for. And possible force us to mistake AI for something that deserves ethical treatment.

On the flip side, knowledge about the possibility of fake consciousness means that we risk dismissing the point where AI truly becomes sentient and casually kill a conscious mind by flipping a power switch on a computer.

The only way out of this dilemma is to scientifically solve the riddle of consciousness. The theories exist. But to test them, we might have to let go of the tabu of first-person science.

We soon will be able to manipulate our own brains and directly observe the consequences. Testing scientific theories of consciousness will become possible for individuals this way. And only in this way.

We thus soon face a tremendous decision – will we accept first-person science as science? Or will we keep insisting on science being exclusive to the third person perspective? Both the progress on some of the biggest riddles of nature as well as massive ethical dilemmas depend on how we decide that question.

Science relies on observers. We should appreciate that fact.