

Predicting the Future

Reason's ultimate purpose

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Abstract:

The power of Reasoning shapes the quality of one's decisions. Predicting the consequences of one's actions is the most important function of reason. Doubts about the capacity of predicting future effects of one's actions decreases with the increase in one's maturity and understanding of the bond between cause and effect.

It is beneficial to test a new idea we hear with skepticism and find how strong it holds under inspection. This type of skepticism is healthy and meaningful. But skepticism that leads to doubt about our capacity for arriving to a reliable knowledge is self-defeating. It undermines the purpose of science and philosophy. The following presentation tries to clarify the unsound foundation of philosophical skepticism and its contradiction with the spirit of philosophy itself.

Predicting the Future: Reason's ultimate purpose

The word "Why" - is the most frequent word children use when asking about the world. Research on these subject reveals (1) that the word "Why" emerges from child's desire for *justification* or *understanding* of what is observed, demanding to know the "*reason*". The mental tendency for seeking "reason" is inherent. It is useful for making sense of reality.

Traditional study of the process of reasoning differentiates between the two cases of deduction and induction. Deduction, aimed at establishing a definite conclusion, does not produce new knowledge. Induction, aimed at exploring possible outcomes allows for predicting new knowledge, with a degree of probability.

But the word 'reason' is not limited to logic; it serves in a variety of disciplines, such as psychology and the legal domain – stretching thus the process of reasoning to the field of human behaviour.

In psychology, reasoning pertains to studying the effect of motives and past mental drives on behaviour, while in the legal domain reasoning is about examining motivation for a crime or a justification of action in civil matters.

Apparently, the quality of a person's way of reasoning shapes the person's behaviour and can affect one's future destiny.

Consequences of unreasonable behaviour

An individual's reasonable behaviour is strongly associated with the capacity to envision the consequences of one's causes of actions. Ask anyone from the prison population whether they could have changed their past causes of actions that led to their imprisonment. The Law is strict and uncompromising about cases of unreasonable actions, and the effects are quite serious. Usually, it is shortsightedness and emotionalism that negatively affect the process of correct reasoning in daily encounters.

Reasoning has the capacity for shedding light on the unknown future, revealing various possibilities:

“Predicting future emotions—a process referred to as “affective forecasting”—is therefore central to the way we evaluate and choose among alternatives”. (2)

The abovementioned view implies that the present state of awareness contains a cluster of potentials about the future. One of those potentials becomes a likely candidate for what will take place in the reality of life, given availability of conditions. We do not know what will take place in the future but in the same time we are not navigating in complete darkness.

The Mental Function of Future Prediction

Science suggests that deciding about the future is affected by a variety of factors, such as past memory and the individual's clarity of thinking. Predicting our future feelings is a most valuable process in which various sections of the brain are involved:

“Neuroscience research suggests that memory is not just about recalling the past, but also about predicting the future. The brain uses past experiences and current information to construct models that anticipate what will happen next, a process fundamental to how we navigate the world, learn, and even experience consciousness. This predictive function of memory is crucial for efficient movement through environments, survival, and goal-directed behavior”. (3)

Objections to the capacity of Future Prediction

The suggestion that we can form reasonable scenarios of future events and their alternatives clashes with two objecting trends of thoughts: scepticism and beliefs in fate.

At odd with science, philosophy harbours many views of doubts and scepticism about predicting the future. Some philosophical views deny even the possibility of prediction of simple physical phenomena, let alone the vastly complicated prediction of feelings or behaviour. So, how to convince the sceptics about the true power of reasoning about the future?

The Proof of Correct Reasoning

One of the most outstanding achievements of science was Einstein's prediction of the deviation of planet Mercury's trajectory around the Sun, calculating the shift in orbit well before it took place:

“Einstein's Theory of General Relativity predicts exactly the amount of perihelion advance seen in Mercury” (4)

Note that Einstein's theory is highly mathematical, a product of 'pure reasoning'. Reason can be proven correct if it produces a prediction that observation in the physical world confirms its validity. Reality is the ultimate judge about the quality of one's reasoning.

Proofs of the human capacity for correct reasoning are available to us through uncounted scientific achievements. Outstanding examples of predicting future events (yet to take place in a *remote time* and in a *distant place*) - are offered by all space projects.

While there are thousands of philosophy articles arguing about the location of two small billiard balls touching each other on a flat table - let's consider the example of two bigger masses approaching each other: a satellite and an asteroid.

In 2011 a Japanese team successfully sent spacecraft Hayabusa in a 7-year journey to land on asteroid Ryugu in 2018, which is distant from earth by 290 million kilometres, and which

was spinning at great speed. The spacecraft landed exactly as predicted, with extreme precision, collecting samples from the surface of the asteroid. (5)

Science can offer proof of the correctness of its reasoning (based on employing laws of nature in planning a certain project) because science starts from 'impartial facts' (or true premises). Some philosophers, however, starting with 'false premises' end up into scepticism and doubts, denying the Principle of Uniformity of the laws of Nature, (PUN), science is based on.

What was the “reason” for philosophical scepticism?

One of the reasons for the conflict between philosophical scepticism and science - is the wrong inclusion of man-made concepts about time in describing objective phenomena.

Science is based on objective laws of nature. Scientific equations describe the dynamism of phenomena, which objective function is not conditioned by a subjective man-made understanding of time.

The human calendar conveniently divides time into past, present and future. Nature, however, does not have a calendar. Dividing time into three phases is man-made. The sceptics' expectation that objective natural laws should abide by our timescale of past, present and future is not logically justified. Einstein clarifies why:

“The distinction between the past, present and future is only a stubbornly persistent illusion.” (6)

Yet, we meet with exactly the opposite view in some areas of philosophy:

David Hume's philosophical problem of induction argues that we cannot logically prove the future will resemble the past, even with past observations like the sun rising. This means that even though the sun has risen every day, we cannot be certain it will rise tomorrow, as our belief relies on an unproven assumption that past patterns will continue” (7)

Sunrise is a man-made expression describing the effect of Earth's rotation around its axis. Earth's rotation existed before the emergence of man on the planet, and it has nothing to do with man-made measure of time of yesterday and tomorrow. To associate a fact of nature, or condition it by a human-made measure of time – is not justified.

Hume must have been aware that an interruption of what he calls “*past pattern*” of regularity - cannot take place without a cause to alter it. To prevent Sunrise necessitates the action or interference of a power of unknown origin that can prevent Sunrise.

The hidden assumption of an “unknown power of interference”

Hume's example of Sun's disappearance hides the assumption of the existence of an unknown power that can reverse regularity of natural phenomena. But he was not alone in accepting possible disruption of regularity of natural laws. According to Al:

“Al-Ghazali (1058–1111) and William of Ockham (c. 1287–1347) both argued from the perspective of God's absolute power (potentia Dei absoluta). They maintained that God is not bound by the laws of nature He created. Because God is all-powerful, He could, at any moment, choose to suspend a natural law or cause an event in a completely different way (a miracle). Therefore, our confidence that the future will resemble the past cannot be based on a logical necessity, but at best on our experience of God's habitual, reliable action”.

But this is a religious - not philosophical - argument. And a close examination of it reveals its absurdity, as it speaks about a divine power creating order then the same divine creating disorder.

Hume's belief about God is ambiguous but his disbelief in miracles was clear. A miracle is by definition an event that defies regularity of natural laws and fits his example of prevention of sunrise. It is the possibility of future overriding the Laws of Nature which Hume suggested, is what miracles are based on.

The widening gap between philosophy and science

Afterall, there was absolutely no need for anyone to try to logically prove or disprove that "*The Future Will Resemble the Past*". This sentence - which is still widely debated – is just an unnecessary formulation by sceptics only - and not by science. Science rather confirms that the future *does not have to resemble* the past.

Take the history of life on Earth as is viewed by science. The phases of changes that occurred over the lengthy history of the Earth – were described by science confirming that nature did change its course. However, science states that changes do not occur chaotically and that the world is not random. Future changes do occur and are predictable if we know the causes *and* conditions that are at work.

The role of initial conditions in the mechanism of cause & effect

The whole objection to the Uniformity of Nature was based on Hume's following statement:

"... it is possible to clearly and distinctly conceive of a situation where the unobserved case does not follow the regularity so far observed" (8)

But isn't the role of philosophy to inquire about the reason *why*? Why would nature sometimes follow regularity but at other times does not?

As farmers would tell us: the *cause* of harvest is planting seeds, but the final *effect* depends on soil's conditions and on moisture. "Conditions apply" – is a universally valid statement in all sorts of activities.

The element of "*initial conditions*" of an event was completely missed by Hume, who rightly observed that the same billiard ball would behave differently at different times of observation, (but he did not know the reason why). Today, a secondary school student can explain that the "initial conditions" (applying the same force of impact, and at the same angle of approach) decide on ball's movement. The future movement of billiard balls is easy to predict and can be precisely calculated, depriving Hume's example of validity.

The Initial Conditions of any system are involved in any process of its change. Science explains that **Cause + Condition** lead to **Effect**

Another example about the importance of considering the initial conditions is applying heat (**cause**) to water, resulting in its boiling (**effect**) at 100 degrees at sea level (**condition**). The same experiment done at a top of mountain will give a different boiling point because of differing conditions (of atmospheric pressure).

The difference between "cause" and "condition"

Finding the true cause of an event can be very difficult. Confusion occurs between:

- the real cause of the event - on one hand – and
- conditions (necessary but not sufficient) for the effect to take place.

To distinguish between cause and condition, Japanese educator Josei Toda (1900-1951) suggested the following example: (9)

*“A problem, no matter what kind, is an effect produced by a combination of inherent **causes** and external **conditions**. Here is a glass of water. Let’s suppose that there are some sediments at the bottom of the glass. If you stir the contents the water will become murky in **effect**. In this case, the sediment is the inherent **cause**, and the act of stirring is the external **condition**”.*

In disputes among people, one side in a dispute may blame the other side - of being “*the cause*” of a problem. For example, one accuses another that the act of “stirring the situation” was **the cause** of developing **the effect** of a tense state (like creating the state of murky water). But the *cause* (of the tense situation) was dormant within the affected person, and the stirring only offered a **condition** to bring it up.

The Problem of Induction: what problem?

The argument against Uniformity of Nature is about perceiving circularity of Induction when we: “...*proceed upon the supposition, that the future will be conformable to the past*” (10)

But induction is not about proceeding from the past to the future. In general, Induction is about proceeding from *specific* facts to a *general* truth.

In defense of skepticism, a YouTube video (11) uses the phenomenon of electrical current as an example. It claims that because in the past we found that copper conducts electricity then we assume that it will do the same in the future. Science disputes this way of thinking. (And such a video is proof that students of philosophy are led through skepticism to unscientific understanding of natural phenomena we use on everyday basis).

The electrical current is movement of electrons. Electrons do not follow yesterday or tomorrow in their movement, generated by the difference in energy level between two points of a conductor. The equation that defines electric current has no dimension of time or location. The human calendar of yesterday and tomorrow has no influence on the properties of the electron. Thus, under the same conditions (of difference in energy level in a conductor) the same phenomenon is *certain to occur*, regardless of whether we conducted the experiment at school or after graduation, or whether the experiment is carried out by our consecutive generations.

The Laws of nature are about the properties of matter, and the properties of matter have nothing to do with our calendar of time flow. Again, to suggest that a hidden unknown power can at any time disrupt the order in the world is not relevant to serious philosophy.

Skepticism contradicts the essence of philosophy

Philosophical skepticism is in conflict not only with science, but with the field of psychology and the legal domain. If - according to skepticism - we are unable to predict the future course of simple physical events, how can we predict the future effects of the highly complicated field of human relations and feeling?

Philosophy is about knowledge and wisdom. Wisdom allows us to predict the impact and effect of our causes of actions, to avoid possible problematic consequences. By denying the capacity of Reasoning to predict the future, skepticism is offering the message that humanity is condemned to the state of ignorance about its future, and that our hard-earned knowledge is unreliable.

Conclusion

The process of Reasoning is at the foundation of logic, science, psychology and the legal domain.

Reason can be defined as the capacity for correct thinking. Correct thinking is the process of establishing the thread linking premises with conclusions and through binding causes with their future effects. In the field of behaviour and taking decisions, reasoning defines the quality of involvement in the events taking place in one's life and has a decisive impact on their consequences.

Yet, philosophy harbors views of skepticism and doubt about the capacity of reason for making reliable predictions about the future effects of current causes of actions. The main cause for skepticism is misunderstanding the mechanism of the bond between cause and effect, missing the influence of the initial conditions in a system undergoing change.

From survival's point of view, reason's ultimate purpose lies in making correct causes of actions leading to beneficial effects in daily life for self-and-others. A thorough understanding of the relationship between causes, conditions, and effects is important for enabling reasoning to effectively analyse facts and make informed decisions that reflect on beneficial outcome, for self and others.

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