

REALITY AS HUMAN CREATION IN IAN HACKING

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Abstract

Ian Hacking's claim that reality is a human creation seems paradoxical and requires further investigation. A paradox is that statement which can only be true if it is false and false if it is true. It offers a counterintuitive conclusion or outcome, claiming that two apparently contradictory ideas are true. Often, paradoxes are intractable in the sense that their questions seem unanswerable and difficult, yet leading to some deeper truth. The relevance of philosophy in our science-intoxicated world hinges on its ability to investigate paradoxical situations in life. An investigation into the Hackinian position on reality seems to represent no boundary thesis between idealism and realism. Hence, this paper argues that reality may not be as Hacking, who was predominantly trained in the analytic tradition, has posited. The paper advances strong arguments to conclude that Hacking's position concerning the human creation of reality is a paradox.

Keywords: paradox, idealism, scientific objectivity, realism, truth.

Introduction

Reality is a concept laden with so much ambiguities that a discussion on the subject seems to be a discussion about everything and nothing. In an attempt to exfoliate reality Sartre, a renowned 20th century philosopher, wrote an influential book entitled *Being and Nothingness: An Essay in Phenomenological Ontology*. Sartre tries to convince us, in this work, that existence precedes essence. Sometimes we equate reality with existence, and some other times we get at the crossroads of a paradox while trying to situate reality and ask which precedes the other, existence or essence? We may also posit the question differently in the light of being/reality and consciousness. Consciousness seems to precede

reality. But, when we consider Edmund Husserl's position that consciousness is consciousness of something, we tend to take the other side. How can something precede another, yet not precede it? Consciousness is consciousness of being. Can there be being without consciousness? Can reality be known in the strict sense of the term? Immanuel Kant says *no* and argues in his transcendental idealism that the thing-in-itself (the noumenal realm) cannot be known. Granting our human categories of understanding and forms of sensibility, only appearances (the phenomenal realm) can be known. But, then, Husserl in his phenomenology claims that the so-called Kantian thing-in-itself can be known.

The debate on the nature of reality which is still ongoing is the crux of this paper. Scientific practice and understanding rely so much on the process and outcome of this debate. Both the practice and theory of science involve reality and the belief in its existence. Reality becomes the raw data with which science operates and without which science becomes mere wishful thinking. Far from many philosophical ways of viewing reality, our interest is on the scientific conception of it which Ian Hacking tries to demonstrate in his experimental realism discourse. At least this establishes one of the several ways subjects categorized under humanities have contributed to the progress of the human society.

When we say something is a human creation, among other things, we seem to infer that the human species has brought something which hitherto was not there into existence. If reality is a human creation as Hacking proposes, then we could understand him as saying that reality has been fashioned out by the human agency. This claim seems to have him out as a social constructivist in the order of Bruno Latour and Carina Knorr-Cetina, who hold that reality flies out of the scientist's laboratory notebook. Questions which directly follow include whether or not this fashioning or creation was performed out of some pre-existing (original) stuff or *ex nihilo* (out of nothing), whereby whichever choice we make brings out the problem of cohering or not with the principle of *Ex nihilo nihil fit* (Out of nothing comes nothing). Of course, a tilt to either side produces some contrary views. Hacking seems to have noticed this problem in his *The Social Construction of What?* In this piece, Hacking clearly prognosticates on the paradoxical nature of his postulation, but argues that he can never be taken as a social constructivist for any reason.

Be that as it may, Hacking has taken a position on reality which we shall buttress, with a measure of novelty, as involving a paradox. We hope to resolve this paradox and place it within the context it might be better understood. Of course, different nuances of the term "paradox" exist and one of the notions of a paradox seems to have been represented by Hacking in his scientific realism discourse. As it stands, part of the purpose of this paper is to state, analyse and resolve what has been identified here as a paradox in Hacking's conception of reality.

In this paper, we need to make some preliminary statements concerning the understanding of reality advanced by some key philosophers, especially, philosophers of science. It will lead us to consider Hacking's conception of the "real" (from the perspective of science). This then will be followed by our somewhat novel interpretation of Hacking's understanding of reality as a paradox. The paper ultimately ends with a conclusion.

Some key Philosophers on the Notion of the *Real*

We need to stress the fact that Bertrand Russell, in his prefatory remark to Ludwig Wittgenstein's *Tractatus Logico-Philosophicus*, categorized the term *real* as one of those simple terms with which we understand other words or concepts and does not require any definition since its meaning is as clear as daylight. To be sure, this sort of rendering belongs to logical atomism (a stratum or strand in the analytic tradition).

But away from language, we are looking at the *real* from the ontological dimension, wherein we begin to ask what sort of entities actually inhabit the universe. Right from Greek antiquity, philosophers have tried to examine and re-examine what actually constitutes reality – water, air, infinite boundlessness, fire, earth, ether, nous, atoms, one, number, monads, actual occasions, etc. They have forever tried to make this distinction between *appearance* and *reality*. In their thinking, reality is always that which underlies the physical universe.

But, then, Hilary Whitehall Putnam, in *Representation and Reality*, awakens our interest by noting that his own philosophical attitude gives up the familiar "assumption that what is real is what is 'under' or 'behind' or 'more fundamental than' our everyday appearances...(:) the assumption of The One in the Many, and ... the assumption that every phenomenon has an 'ultimate nature' that we have to give a (metaphysical reductive) account of" (4). By his basic utterance, he somewhat opens some interesting dimension to the reality discourse. Incidentally, we are not having much truck with Putnam at the moment; but from him we learn that, whatever appears can be as real as what is hidden. Whatever we call nature or reality becomes so for us. The classification of the real, as it were, becomes a human thing. This is not to say, at any rate, that all the phenomena we perceive can "be dismissed as mere folk psychology, unless the very idea that there are things and we think about them can be dismissed as folk psychology" (Putnam 3).

The notion of ultimate reality still lingers in the present age of quantum physics, as philosophers and scientists keep talking about quantum reality and the building-blocks of nature. Heinz A. Pagels incidentally informs us, in *The Cosmic Code: Quantum Physics as the Language of Nature*, that "The reality marketplace has lots of shops, each with a merchant who wants to sell us his version of physical reality. The way the market is set up, we have enough cash to buy one reality, so it is a very competitive market" (Pagels 153). However, Pagels forewarns: "Grasping quantum reality requires changing from a reality that can be seen and felt to an instrumentally detected reality that can be perceived only

intellectually” (xiii). In line with this quantum orientation, Steven Weinberg stresses that, “the inhabitants of the universe (are) conceived to be a set of fields – an electron field, a proton field, and electromagnetic field – and particles (are) reduced to mere epiphenomena... This picture represents a nearly complete triumph of the **field** over the **particle** view of matter...” (qtd. in Gregory 155).

In his *Lectures on Quantum Field Theory* (1966), P. A. M. Dirac made a somewhat reformative claim by insisting that, “In atomic theory we have fields and we have particles. The fields and particles are not two different things. They are two different ways of describing the same thing – two different points of view. We use one or the other according to convenience” (qtd. Gregory 155). Helen Buss Mitchell, on her part, represents the quantum-relativity drama in the following terms: “Most of the atom contains nothing we could call material. It appears to be empty space, but energy-charged empty space. In fact, quantum field theory tells us that only the field is real... – and the field is energy, not matter” (77). Following from this, Mitchell asked a fundamental question: “Does this mean that there is no longer any justification for being a materialist philosopher? (77). Her concluding remarks peter out in the fact that, “materialist philosophers will need to rethink what they mean by ‘matter’” (78). Whether the real inhabitants of the universe are particles or fields of forces or energy, is something philosophers of science have continued to debate on. Yet the basic question, for us, is: how objective can scientific instruments become in actually leading us to the basic or ultimate reality?

In *Quantum Theory and Schism in Physics*, Karl Raymond Popper, on his part, announced that the Copenhagen interpretation of reality, advanced by Niels Bohr, says that “objective reality has evaporated”, and that quantum mechanics does not represent particles, but rather our knowledge, our observations, our consciousness, of particles” (35). Popper prefers to follow the opposing paved pathway created by Albert Einstein, Max Planck, and von Laue, among others. He doubts the possibility of intrusion of the human subject in the very process of experimental investigation of the more fundamental reality. In fine, Popper writes: “Admittedly, many experimental tests now have a largely statistical character, but this makes them no less ‘objective’: their statistical character (often processed automatically by counters and computers) has nothing to do with the alleged intrusion of the observer, or of the subject, or of consciousness, into physics” (41). He narrated his encounter with Bohr who challenged him “with the assertion that all competent physicists know that the Copenhagen interpretation is correct (since it has been “proved by experiment”) (36). Popper further acknowledged the seminal role of Immanuel Kant in trying to combine the realistic interpretation of natural science with the fact that scientific theories do not just contain descriptions of nature as if we are “reading the book of nature” bereft of “prejudices”. In fact, theories are the products of the human mind; for as Kant’s well-celebrated quip runs, “Our intellect does not draw its laws from nature, but it imposes its laws upon nature”. Keeping tabs with this Kantian attitude, Popper writes:

I have attempted to improve this excellent Kantian formulation as follows: ‘Our intellect does not draw its laws from nature, but it tries – with varying success – to impose upon nature laws which it freely invents’.

Thus, theories are our own inventions, our own ideas: this has been clearly seen by the epistemological idealist. But some of these theories are so bold that they can clash with reality: they are the testable theories of science. And when they clash, then we know that there is a reality: something that can inform us that our ideas are mistaken. And this is why the realist is right (3).

It may not be necessary to repeat the views on two orientations to reality, namely: the Kantian idealistic position together with its internal realist inheritors and the core metaphysical realist position, which have been extensively discussed respectively in the journal articles, Emedolu (2012) and Emedolu (2011).

Be that as it may, it must be brought to focus that B. E. Nwigwe, in his inaugural lecture (wherein he reviewed the reality question), came up with the bifurcation of reality into *spiritualism* and *materialism*. According to him, “Spiritualism as a model of reality was endorsed by Thomas Aquinas, G. F. Leibniz, Henri Bergson, and many Christian and Islamic philosophers, etc.” Then, again, “Materialism, the opposing conception of reality, is associated with the atomists, notably, Democritus, Karl Marx, Ludwig Feuerbach and others of like mind”. One important dimension Nwigwe brought to his discourse on reality is that, “These two doctrines, spiritualism and materialism, have their corresponding epistemological equivalents as idealism and realism”. Nwigwe further explains:

The idealist, like the spiritualist, thinks that what we know are mere appearances of things. The realist, like the materialist, thinks that the world is knowable, ...analyzable..., rational and predictable.

Besides these two conceptions of the nature of reality, there is a third and new conception emerging from quantum physics. This new conception relies on both idealism and realism and is designated as meta-realism. With this, the boundary between idealism and realism, metaphysics and physics breaks down. Scientists like Niels Bohr, Albert Einstein, Karl von Weizacker, (and) Erwin Schrödinger ... tend to favour this view.

On account of the foregoing, we will presume in this lecture, that the world is not merely material or spiritual alone, but... a composition of both and beyond (17-18).

Furthermore, Nwigwe suggests that a more balanced view of reality can be achieved in the philosophy of science discourse when physics and metaphysics “work together in more fundamental ways”. This is precisely because new discoveries in the mathematico-physical sciences “touch in very serious ways the sphere of metaphysical intuition” (Nwigwe 18).

This collaboration between modern science (which deploys the analytic mode of knowing) and metaphysics (which applies the intuitive mode of knowing) is celebrated in Henri Bergson's "Introduction to Metaphysics". Bergson is open enough to admit that, "... metaphysics cannot get along without other sciences" (168). But, then, he also insists that the sciences can be greatly enriched with metaphysical intuition. Therefore, metaphysics has a pivotal role to play in scientific discoveries or exfoliation of the inner constitution of reality (and life). To be sure, the mystical intuitions of the metaphysician can lead to more penetrating and imitative representations of hidden facts. This disposition is also shared by Alfred North Whitehead.

Given all we have said so far, it must now be added that the word "real" is what captivates the attention or stands out clearly in any discourse on scientific realism. Hence, we quickly turn to Hacking for his conception of the *real* and narrow understanding of scientific realism.

Hacking's Conception of Realism in Science

From the anthropological point of view, Hacking sees reality as an anthropomorphic creation, just like man's own creation of God. But his more specific and practical claim reads: "Reality is just a byproduct of a fact about human beings" (Hacking 131). Perhaps, what this seems to suggest is that the concept of reality must always be understood from man's own standpoint, not from any heroic, absolute, ideal or abstract God's-Eye-View. Hacking insists that "reality" is the second creation of man after "representation", for he fundamentally defines man as *homo depictor* (i.e., man who represents or pictures things in language or art). Anyhow, Hacking's exact explanation of *reality* as a human creation runs as follows:

Reality is an anthropomorphic creation. Reality may be a human creation, but it is no toy. On the contrary, it is the second of human creation. The first peculiarly human invention is representation. Once there is a practice of representing, a second-order concept follows in train. This is the concept of reality, a concept which has content only when there are first-order representations.

It will be protested that reality, or the world, was there before any representation or human language. Of course, but conceptualizing it as reality is secondary (136).

If what Hacking has said is granted, then the next step is to extend to ourselves the privilege of knowing immediately how he applies the term, *real*. He says that *reality* is a term of contrast in the sense that one can distinguish between *that which is* and *that which is not*. David B. Resnik, in "Hacking's Experimental Realism", illuminates this idea further when he writes: "The word 'real', according to Hacking, is a 'trouser word' in that its meaning derives from what it is contrasted with: real ducks are not decoys; real diamonds are not

made of cubic zirconium, and so forth. *Real*, in its scientific usage, is connected to causation; real entities can causally interact with the world; unreal ones cannot” (396).

Beyond seeing *reality* as a term of contrast, Hacking unfolds that the “real” must not only be conceived as *that* which is *material*, but should also be seen in terms of *that* which is *immaterial*. Hacking laments the fate of the moment wherein realists, like J. J. C. Smart, accept positrons and electrons as some of the basic *building blocks* of reality but reject entities like lines of force as categorically unreal. Hacking attributes this to the bias of materialism. He now weaves-in the biographical story of Michael Faraday who came to establish the reality of lines of force after he might have invented the electric motor to cut these lines (37). As it stands, “Faraday is part of that tradition in physics that downplays matter and emphasizes fields of force and energy” (Hacking 35). This implies, for Hacking, that particles, forces or fields, processes, events, structures, states, etc., must all be taken as real as every other visible or medium size object of nature. For Hacking, ultimately, “we can continue to be scientific realists without being materialists” (35).

Subsequently, Hacking names one basic ontological component that must accompany any entity that must make itself available for scientific study. It is the *causal ingredient*. As such, theoretical entities are forever conceived in some way or the other to be “causally responsible for the observable phenomena” under scientific investigation (Hacking 28). This is a short way of saying that whatever entity we conjecture to be *actual* or *real* must be able to exert some causal influence, impact or effect on the putative *real visible* things of material nature. Henceforth, it becomes too clear that Hacking is largely interested in the fact that, “Reality has to do with causation and [that] our notions of reality are formed from our abilities to change the world”. In other words, causal impetus or power lies at the centre of

Hacking’s conception of the “real” and remains the pivot of his pragmatic Marxian policy of transforming the world through science. Hacking acknowledges his debt to Nancy Cartwright’s concept of “causation” which is antipathetic to David Hume’s position which stipulates that, “...we are never able, in a single instance, to discover any power or necessary connection... which binds effect to the cause and its supposed effect” (Tallant 188). Cartwright had insisted, in Paul Needham’s rendering, that “constant conjunction is not all there is to causation...Causal statements are not reducible to regularity” (Needham 94-95). Cartwright affirms her solemn conviction in causation when she declares: “Causal explanations have truth built into them... an existential component, not just an optional extra ingredient” (91). This Cartwrightian inheritance of Hacking’s has made scholars reduce his experimental/entity realism to mere *causalism*.

Another component which Hacking recognizes is the *building ingredient*. *Building* is simply conceived by Hacking in the sense of tiny unobservable particles piling up or clustering to form visible or palpable material/macro-physical objects. Therefore, *building*

(in terms of more fundamental elements serving as bricks for compound elements) and *causing* (in terms of immaterial forces creating some phenomenal effects in the physical world) are the two non-exclusive scales upon which the notion of the “real” in science hangs. This ***building-causing*** disposition now leads Hacking to summarily project his own idea of scientific realism in the following manner:

Scientific realism says that the entities, states and processes described by correct theories really do exist. Protons, photons, fields of force, and black holes are as real as toe-nails, turbines, eddies in a stream, and volcanoes. The weak interactions of small particle physics are as real as falling in love. Theories about the structure of molecules that carry genetic codes are either true or false, and a genuinely correct theory would be a true one. ... We aim at discovering the inner constitution of things and at knowing what inhabits the most distant reaches of the universe (21).

Hacking goes further or deeper in his discussion on scientific realism. He borrows from W. H. Newton-Smith some three basic ingredients that must be present in any discourse on scientific realism. They include:

1. An *ontological* ingredient: Scientific theories are either true or false, and that which a given theory is, is in virtue of how the world is. This kind of orientation to theory is somewhat captured, if in a logical manner, in Pierre Duhem’s positive proposition that, “...the aim of physical theory is to become a natural classification, to establish among diverse experimental laws a logical coordination serving as a sort of image and reflection of the true order according to which the realities escaping us are organized” (qtd. in Lugg 410).
2. A *causal* ingredient: If a theory is true, the theoretical terms of the theory denote theoretical entities which are causally responsible for the observable phenomena. Hacking himself best represents this attitude when he says: “We ‘infer the best explanation’ that the theory is true. The common cause of the phenomena must be the theoretical entities postulated by the theory” (qtd. in Resnik 405).
3. An *epistemological* ingredient: We can have warranted or justified belief in theories or entities (at least in principle) (Hacking 28).

Hacking maintains virtually that whereas his own realism about theory is roughly (1) and (3), his realism about entities is “not exactly” (2) and (3). His reason for saying this is that Newton-Smith seems to take it for granted that one who accepts an entity invariably accepts the theory surrounding it. But Hacking argues that it is not always the case. He, ultimately, asserts that the major thrust of his own argument largely supports “... realism about those entities we can use in experimental work. That is, it is a drift away from representing [theorization], and towards intervening [experimentation]” (29).

Notably, before Hacking actually launched himself unto the experimental proof of theoretical entities, he made us assume that he does not accept the hallowed traditional

values of *prediction*, *explanation*, *simplicity*, and *fertility* attached to theoretical explanations. Fortunately, these sacred or cherished values were still prevalent in 1983 when Hacking wrote; they were seen as solid criteria for choosing between one representation or theory and the other. While fronting or projecting Heinrich Hertz, Hacking claimed that, “None of traditional values... quite do the job” (143).

Since his interest at the moment is not theory realism, Hacking does not find it relevant to explore those “good-making” values or qualities of scientific theory. He greatly faults scientific explanation, and insists that it plays no central “role in scientific reasoning” as some philosophers tend to imagine. He maintains that “explanations are relative to human interest,” and, as such, Hacking conceives every explanation as “largely a feature of the historical or psychological circumstances of a moment” (53). This re-echoes the Hegelian relativization (or historicization) of truth. Put in another way, Hacking roundly denigrates the theory realism that came before him, insisting there cannot be any final argument for or against realism at the level of theoretical representation because there could be several ways or styles of representing reality among which we cannot spot the best. As a consequence, Hacking also rejects (or is *skeptical* of) the three standard supportive arguments of *simple inference*, *cosmic accident*, and *success of science* (what is called *ultimate* or *No-Miracle argument*); for he persuades himself to squarely assume that “scientific realism about theories” most times cleave to the Peircian principles of faith, hope and charity”. On the other hand, Hacking asserts that, “scientific realism about entities needs no such virtues”. In his own experimental realism domain, “seeing is believing”: instrumental devices are constructed and entities, such as electrons, are made to “sit up and behave” (Hacking 264). Hence, we must set sail to the isles of instrumental observation and experimental manipulation of unobservable entities, for it is in observing entities and experimenting with them that the ultimate proof of Hacking’s entity realism lies!

Hacking’s concept of reality as a paradox

All paradoxes do not have the same characteristics. However, something similar to all of them seems to be the involvement of counterintuitive conclusion whereby two contradictory ideas seem to co-exist and make a claim to the truth. Hilary A. Eke, in his “Making Sense Out of the Nonsense of Illogical Logic: A Synopsis of Chukwuemeka Ike’s Sense of Humour” reveals there can be a pragmatic understanding of a paradox whereby the idea of meaningfulness is brought in; so that, “a paradox often gets smeared at least with a contradiction, a meaningful contradiction. Meaningful in the sense that an aspect of the paradox makes sense while at the same time, looking at it from a different context, it does not.” Notable examples include the Socratic paradox, Quinean paradox, ravens paradox, verificationist paradox, liar paradox, etc. The Socratic acceptance of the Delphic oracle that he was wise is summarily couched as “All I know is that I know nothing”. Here, a paradox assumes the dimension of a truth that seems untrue.

When we consider the Socratic instance above we notice that to “know nothing” contradicts to “know”, yet not negating its meaningfulness, it yields some sort of “false-truth” or rather outright falsehood when applied to its own quotation. That brings us to another paradoxical instance, the Quinean paradox, where the proposition, “‘yields a falsehood when appended to its own quotation’ yields a falsehood when appended to its own quotation” (Quine, 9). This is an example of the class of paradoxes Quine calls antinomies; and according to him, they bring on the crises of thought since they produce self-contradictions by accepted ways of reasoning. He argues that if we put down a sentence with quotation marks around the first of its two occurrences, the result is false. Since that result is the very sentence that does the telling, the sentence is true if and only if it is false. If we apply this Quinean paradox to the verification principle we may arrive at another paradox, the verificationist paradox: the content of the verification principle when applied to the verification principle itself yields a counterintuitive conclusion. That is, the verification principle verifies every other thing except itself. What about the liar paradox? This may be demonstrated with a case of a Nigerian saying “All Nigerians tell lies always”. If this statement is true, then it is false, and if it is false, then it is true. With this understanding of paradoxes, let us strive to state and explicate the Hackinian paradox. Simply stated it, suggests that the word ‘reality’ is ‘real’ if and only if it is ‘not real’.

Reality, which includes the raw materials of science, is a human creation since reality is a social construction. Construction may imply creation, but it does not presuppose *creatio ex nihilo*, since *creatio ex nihilo* does not cohere with the principle of *ex nihilo nihil fit*. If the foregoing thinking is right, then social construction presupposes there are mind-independent realities with which to construct reality. This either leads to a bifurcation of reality or a contradiction in the sense that reality is not created and reality is created. This already yields a counterintuitive result. Let us use a *reductio ad absurdum* to reconstruct this thinking.

Suppose that Hacking is correct and reality is not mind-independent, that is, reality is a human creation. But if reality is a human creation, then there is no objective reality, for every human has to create his/her own reality and there would be multiplicity of realities. And, if there is no objective reality, then reality is not real. But there is inter-subjective objectivity in science which itself is a human creation according to Hacking. That means reality is real. So, Hacking’s claim is that reality is real and reality is not real. Thus, it must be false that reality is a human creation.

Hacking’s conception of reality as an anthropomorphic project also has laden within it the idea that reality is out there without human intervention, that is, independent of the knowing subject. Claiming that reality is the second creation of man after representation indicates that in representation there ought to be something (a reality?) represented. From his logic, it can be inferred that what was represented was there and existed before the intervention

of man. We notice the influence of idealism in Hacking's thinking. Perhaps, we may say that Hacking got himself entangled in the labyrinthine linguistic world of double-speaking, wherein reality is at once an anthropomorphic creation (epistemologically speaking) and objectively out there to be manipulated with scientific instruments (metaphysically speaking).

Conclusion

Karl Popper in *Conjectures and Refutation* holds that one of the distinguishing factors that rank among the highest achievements of a philosopher is "to see a riddle, a problem, or a paradox, not previously seen by anyone else" (184). He goes on to say that the philosopher should disturb our laziness and complacency whenever he/she first sees and understands (and not necessarily resolves) a new problem, just like Hume did rouse Kant from his dogmatic slumber. If this paper has succeeded in pointing out the problem involved in Hacking's position that reality is a human creation, then we would have succeeded in disturbing our laziness and complacency. Reality may not after all be a human creation as posited by Hacking.

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