The Ashtray: Shifting Paradigms (Part 2)

By ERROL MORRIS

Errol Morris on photography.

This is part two of a five-part series.

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SHIFTING PARADIGMS

Saul Kripke is considered one of the seminal thinkers of our time. Philosophers can and will endlessly debate the content of “Naming and Necessity.” Currently, there are hundreds if not thousands of journal articles devoted to this series of three lectures. His lectures realigned our ideas about meaning and reference — essentially, about how language “connects” to the world. And affirmed a decidedly un-postmodern idea of meaning, reference and truth. In Kripke’s view words are attached to things in the world through an historical (or causal theory) of reference. And although Kripke’s theories examined proper names, like “Julius Caesar” or “Moses” or “Kurt Gödel,” they also apply to terms like “water” and “gold.”

Kripke’s theory provides an alternative to what had become known as the description theory, an amalgam of ideas proposed by Gottlob Frege, Bertrand Russell and Ludwig Wittgenstein. (And to that mix, in the ‘50s and ‘60s you can add Peter Strawson and John Searle.) Here’s one way to distinguish between Kripke’s theories and the description theory that preceded it.

You have two fish in a fishbowl. One of them is golden in color; the other one is not. The fish that is golden in color, you name “Goldie.” The other fish you name “Greenie.” Perhaps you use the description “the gold fish” and point to the one that is golden in color. You are referring to the gold fish, Goldie. Over the course of time, however, Goldie starts to change color. Six months later, Goldie is no longer golden. Goldie is now green. Greenie, the other fish — the fish in the bowl that was green in color — has turned golden. Goldie is no longer “the fish that is golden in color.” Greenie is. But Goldie is still Goldie even though Goldie has changed color. The description theory would have it that Goldie means the fish that is golden in color, but if that’s true then when we refer to Goldie, we are referring to the other fish. But clearly, Goldie hasn’t become a different fish; Goldie
has merely changed his (or her) appearance. [14]

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It’s Kripke’s version of “Where’s Waldo.” If the description theory (courtesy of Frege, Russell and Wittgenstein) is correct, then Goldie is on the right. If Kripke’s historical-chain of reference theory is correct, then Goldie remains Goldie no matter what color Goldie is. [15]

You could also think of Goldie and Greenie in terms of beliefs, although this is not how the description theory was originally framed. Goldie is the fish that you believe is golden in color. But Goldie starts to change color. I can believe anything I want about Goldie. I can even believe that Goldie isn’t a fish, but Goldie — that fish out there swimming around in a fishbowl — remains Goldie.

Here is Kripke’s central intuition: descriptions help us to fix a reference, that is, to attach a name to a thing, but descriptions (and beliefs) do not determine reference. There is a historical connection between words and things. Our beliefs about Goldie could be all wrong, and we can still refer to Goldie. It doesn’t matter what belief or what theory we have about Goldie. We can grab a hold of Goldie independent of that belief or that theory. And we can say true or false things about him. Is it true that Goldie is green? Or gold? Or red? (Or that Goldie has two heads.) There is a historical connection between words and things.

Here’s another way of looking at it. We can reach outside our theories and pick out things in the world. [16]

Thomas Kuhn’s “The Structure of Scientific Revolutions,” however, was far more influential than “Naming and Necessity” — possibly because it fit into the pop-culture of the moment, the idea that truth is culturally determined and depends on your “frame of reference.” It produced a cottage industry around itself. And became a kind of postmodernist Bible. [17] [18] [19]

Kuhn’s book introduced its own nomenclature — normal and revolutionary science, paradigms, paradigm shifts, anomalies, etc. Here is a brief description. According to Kuhn, science is parsed into normal and revolutionary science. In normal science a group of “practitioners” have settled on a way of defining and solving problems — a paradigm. They have a way of looking at the world and are by and large happy with it. And then there are anomalies. Anomalies shatter the tranquility of the paradigm. An anomaly, for example, could be an unexpected experimental result. Something happens that prevents things from going on as before. The anomaly leads to a revolution, and a shift to a new paradigm.

The most important and most controversial aspect of Kuhn’s theory involved his use of
the terms “paradigm shift” and “incommensurability.” That the scientific terms of one paradigm are incommensurable with the scientific terms of the paradigm that replaces it. A revolution occurs. One paradigm is replaced with another. And the new paradigm is incommensurable with the old one. He made various attempts to define it — changing and modifying his definitions along the way. In the 1962 edition of “Structure” incommensurability was likened to a Gestalt-flip. Presumably, it was about how we see the world.

I found this unconvincing. In a Gestalt-flip, we never lose our ability to see the rabbit or the duck, even if we can’t see them at the same time. We see the rabbit, then the duck. Or the duck, then the rabbit. Rabbit, duck. Duck, rabbit. (I’m sure Elmer Fudd figures in here, somewhere.) But then Kuhn went on to say, “What were ducks in the scientist’s world before the revolution are rabbits afterwards.”

What!? Is this about our perception of reality or about reality itself? Did the ducks become rabbits?

Here is where the dangerous, slippery slope begins.

Kuhn writes, “We may want to say that after a revolution scientists are responding to a different world.” Attribution: Jastrow, J. (1899). The Mind's Eye. Popular Science Monthly, 54, 299-312, via Wikimedia Commons

By 1969, in his postscript to “Structure,” incommensurability had become linguistic. Kuhn wrote, “Two men who perceive the same situation differently but nevertheless employ the same vocabulary in its discussion must be using words differently. They speak, that is, from what I have called incommensurable viewpoints.” [21] People in different paradigms speak different languages, and there is no way to translate the scientific language of one paradigm into the scientific language of another. [22] Even when they use the same words. “Consider...the men who called Copernicus mad because he proclaimed the earth moved. They were not either just wrong or quite wrong. Part of what they meant by ‘earth’ was fixed position. Their earth, at least, could not be moved. Copernicus’ innovation was not simply to move the earth. Rather, it was a whole new way of regarding the problems of physics and astronomy. The proponents of competing paradigms practice their trades in different worlds...” [23] [24] [25]

Same words, different worlds!?

I had argued with Kuhn — or attempted to argue — that the concept of incommensurability is self-defeating. If paradigms are really incommensurable — as Kuhn claims they are — how can we even say they’re incommensurable? How can we look beyond the perimeter of our own paradigm and compare it with another? Radical
incommensurability should be just that. It should command silence. We can’t know enough even to assert the claim. [26]

If the descriptivists linked the meaning of a name to a description or to a cluster of descriptions and its reference to objects that satisfy those descriptions, in Kuhn’s theories descriptions and clusters of descriptions multiply without end. “Earth” in one paradigm means something different than “earth” in another. And there is no way to compare them, because after all, they are incommensurable. Ultimately, there is no way to determine reference. Or truth. For Kuhn, we are trapped inside a fog of language. And there is no way out. For Kripke, there is such a thing as reference; for Kuhn, there may be no such thing. For Kripke, there are necessary truths (and essential properties); for Kuhn, there are no truths, let alone necessary ones. And on and on and on. “Goldie” in Kuhn’s view means “the-fish-that-I-refer-to-contingent-on-my-paradigm-or-conceptual-scheme.” Or maybe reference is not involved at all. “Goldie” means “the beliefs I have about Goldie in my paradigm.”

It really doesn’t depend on how you dress it up. Paradigms, paradigm shifts, incommensurability, etc. Kuhn’s ideas lead to the relativity or even to the denial of truth — a dangerous idea.

Readers may wonder, haven’t Kuhn’s views been discredited? No. Not at all. People see paradigms and paradigm shifts everywhere. Relativism lives on.

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[10] The lectures were published in a volume of Synthese and circulated as xerox copies. Subsequently, they were published in a separate volume in 1980 by Harvard University Press.

[11] John Burgess, a philosopher at Princeton, has written, “Kripke’s picture has...been called the ‘historical chain’ picture. It has also sometimes been called the ‘causal chain’ picture, but this label is inappropriate. For there need not on Kripke’s view be any causal link between the initial baptist and the object baptized. This should be clear from the foregoing summary. Any object that can be described can be named, and this includes, for instance, causally inert mathematical objects, which figure in a couple of Kripke’s examples.” This is essay is concerned with a “named” mathematical object, namely, √2.

[12] Many commentators point out that Kripke never claimed to have provided a theory of reference. He only claims to have provided a “picture” of how naming works.

[13] Many concepts in philosophy are involved here: essentialism, possible worlds, etc. But there are two issues that are central to the concerns of this essay. A correspondence theory of truth. Truth is not merely linguistic, it must also involve the relationship between language and the world. That meanings (to use the philosopher Hilary Putnam’s
expression) “ain’t just in the head.”

[14] This example comes from Seymour Cohen by way of my friend Charles Silver. (Cohen’s paper was written in 1966.) Some philosophers may object that this over-simplifies descriptivist accounts of naming. This is doubtlessly true.

[15] This idea is often traced back to John Stuart Mill. There is a passage in Mill’s “A System of Logic.” “A man may have been named John because that was the name of his father; a town may have been named Dartmouth, because it is situated at the mouth of the Dart. But it is no part of the signification of the word John, that the father of the person so called bore the same name; nor even of the word Dartmouth, to be situated at the mouth of the Dart. If sand should choke up the mouth of the river, or an earthquake change its course, and remove it to a distance from the town, there is no reason to think that the name of the town would be changed. ... Proper names are attached to the objects themselves, and are not dependent upon the continuance of any attribute of the object.” [emphasis mine] Alas, Mill says that names are “attached to the things themselves,” but he never tells us exactly how this is done. It might be like a gummy label: “Hello, my name is John Stuart Mill.” Mill, J.S. “A System of Logic. Vol 1.” London: John W. Parker, West Strand. 1843. pg. 40.

[16] Kripke also has a “possible worlds” view of proper names, in which proper names are thought of as “rigid designators,” that is, in all possible worlds “Goldie” refers to Goldie. What keeps the historical chain intact? What keeps the links in the chain from being broken? For Kripke it is *intentions*. The intention to refer. So if Speaker Y intends to refer to the same thing that Speaker X refers to, there is an unbroken chain that takes us back to, for example, Goldie.


[18] I can’t hope to provide a definition of postmodernism here. But the essence of it, for me, is the social construction of reality and of truth. Forgive me, this definition may not capture the many varieties of postmodernism, but it’s the best I can do. I had never really thought of Kuhn as a postmodernist, but one of my researchers returned with a syllabus from Louis Menand’s Harvard class on postmodernism and on the list of required reading, along with Lyotard, Baudrillard and Derrida, was “The Structure of Scientific Revolutions.” Structure became an “important text” of postmodernist thought.

[19] I made a couple of phone calls. “The Structure of Scientific Revolutions,” according to the University of Chicago Press, has currently sold over 1,000,000 copies and has been translated into more than 25 languages. (All of them presumably commensurable with one another.) On the other hand, “Naming and Necessity,” according to Harvard
University Press, has sold only 43,350 copies. If you’re interested in buying a copy, I am sure that HUP would appreciate your business.

[20] Kuhn, “The Structure of Scientific Revolutions.” Chicago: University of Chicago Press. 1996. pg. 111 The task of interpreting Kuhn is a daunting one. One can go through his oeuvre and find instances where he affirms scientific progress and other instances where he denies it. Instances where languages in different paradigms can be partially translated; others were they are completely untranslatable. And so on and so forth. A mélange of p and not-p.

[21] Thomas Kuhn, “The Structure of Scientific Revolutions.” Chicago: University of Chicago Press. 1996. pg. 200. Here, Kuhn seems to be channeling Quine’s “Word and Object.” But Quine’s arguments about the “indeterminacy of translation” are different in kind from Kuhn’s arguments about “incommensurability,” even though historically I believe one influenced the other.

[22] Thomas Kuhn, “The Structure of Scientific Revolutions.” Clearly, on the defensive, he seemingly gave up on his “Gestalt-flip” analogy and dipped into language analysis. But the linguistic alternative is no less infirm. Hilary Putnam writes in “Reason, Truth and History,” “The incommensurability thesis is the thesis that terms used in another culture, say, the term ‘temperature’ as used by a 17th century scientist, cannot be equated in meaning or reference with any terms or expressions we possess... If this [incommensurability] thesis were really true then we could not translate other languages — or even past stages of our own language — at all... To tell us that Galileo had ‘incommensurable’ notions and then to go on and describe them at length is totally incoherent.” [The emphasis is Putnam’s.] Hilary Putnam, “Reason, Truth and History.” Cambridge: Cambridge University Press. 1981. p. 114-115.


[24] Kuhn on many occasions tried to clarify his claims about incommensurability. In the 1969 postscript to “The Structure of Scientific Revolutions,” Kuhn suggested that the problem was with philosophers. “A number of them have purported that I believe the following: the proponents of incommensurable theories cannot communicate with each other at all, as a result, in a debate on theory-choice there can be no recourse to good reasons; instead theory must be chosen for reasons that are ultimately personal and subjective...” But in his effort to deny these complaints, he often equivocated, sometimes changing nomenclature, e.g. “paradigm” became “disciplinary matrix,” sometimes just muddying the waters, so that it was impossible to understand exactly what he was saying. His ultimate recourse was to use his theory of incommensurability to explain why many people misinterpreted him or couldn’t understand him.
Often, Kuhn uses the terms “meaning” and “reference” in disparate ways and confuses the two. He assumes that because people have different beliefs about things that they cannot be referring to the *same* thing. This seems clearly wrong. I can believe that the sun orbits the earth or vice versa and still be referring to *the earth* and to *the sun*. He also assumes that because people have different beliefs about things that they cannot understand each other. That they cannot communicate with each other.

The philosopher Dudley Shapere writes, “...the doctrine of extreme incommensurability remains flawed; for it is fundamentally incoherent. How can any two things be completely incomparable? On the other hand, if two scientific contexts were truly incomparable (in the extreme sense that seems implied by Kuhn’s claims of the paradigm-dependence of everything), it would be impossible to call both of them ‘scientific’, or, more specifically, ‘theories’ or ‘paradigms’, or to say that they differed in their standards of explanation (that they disagreed about what it is to explain).” Dudley Shapere, “Evolution and Continuity in Scientific Change,” Philosophy of Science, Vol. 56, No. 3 (1989), pp. 419-437.
Continued from Part 1 Shelter: Wiggle Room and Shifting Spaces. The ‘wiggle room™’ in Venturi and Scott Brown’s ‘mitten™’ spatial layout derives from unspecialized forms of generic spaces, central concentration of core and access, modularity and regularity of architectural elements, generosity in space provided both in height and plan, and evenness of lighting. ‘Shifting spaces™’ takes this idea further, by assigning a generic function, which is a common denominator of surrounding programs, to the suggested low intensity interstitial buffer. The sharing of common functions in the interstitial space will not only maximize usage of the area, but also smooth the transition of programs, increasing efficiency and effectiveness of spatial flexibility. That is a paradigm shift. And, according to Kuhn, it’s usually messier and less objective than people had previously assumed. In particular, he argued, the criterion for the acceptance of a new paradigm is not some kind of provably superior fidelity to objective truth, but simply its consensus adoption by the community of human beings engaged in scientific practice. Morris is also upset about Kuhn’s notorious concept of “incommensurability™.” According to Kuhn, competing scientific paradigms are “incommensurable™” in that they slice up the world into different sets of incompatible phenomena, but this doesn’t mean, as Morris thinks, that he is saying they can’t be rationally compared at all.