

## 2. The “New” in Science and Art: Explorations into the Two-Culture Divide through Kuhnian-Cavellian Thought

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Conventionality and novelty — these two concepts came to occupy a prominent role in the philosophical discussions on both sciences and the arts in the second half of the twentieth century. These domains had established themselves as two autonomous and very different expressions of human creativity. Though they represent two ways of interpreting the world, the two cultures getting polarized to the extent of denying any imbrications is an unpleasant scenario. Discourses addressing the growing divorce between the sciences and the arts began to take shape in the 1950s. In the science world, methodological pluralism and a consequent multiplicity of truth(s) shattered the positivist view of scientific progress as an advancement towards a single, unchanging, worldview. With “progress” in science itself becoming a dubious concept, the status of science as a progressive discourse began to look like an exaggerated claim.<sup>1</sup> The absence of ahistorical, atemporal truth foregrounds conventions as the decisive factor for the knowledge claims constituting the body of science, as exemplified by Thomas Kuhn’s idea of the *paradigm*. Around this time, when the conventionality of knowledge was coming to prominence, similar ideas emphasizing the conventionality of art appeared in philosophical discourse. Danto’s essay, “The Artworld,” talks about the “artworld” in a way which can be compared with Kuhn’s paradigms. The claim is that for something to be recognized as art, it must make sense in “an atmosphere of

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1. The idea of progress conceived as proximity to an objective truth, discovered by a rational methodology, was so crucial to the epistemological superiority of science as a discourse synonymous with knowledge that the historian of science, George Sarton argued that “the acquisition and systematization of positive knowledge are the only human activities which are truly cumulative and progressive,” and “progress has no definite and unquestionable meaning in other fields than the field of science.” See George Sarton, *The Study of the History of Mathematics and the Study of the History of Science* (New York: Dover Publications, 1936), 5.

artistic theory, a knowledge of the history of art: an artworld.”<sup>2</sup> The parallel between Kuhn’s paradigm and Danto’s artworld could be briefly presented like this: a particular construction makes sense as science or knowledge only in the context of a paradigm conducive to that; something is recognized as art only in the context of the artworld. Along with these discussions on conventions, the philosophical discourses pertaining to both science and the arts stressed “novelty” as central to understanding progress. Thomas Kuhn’s notion of “paradigm-shift” redefined the advancement of science in terms of the revolutionary changes brought to the domain, challenging the received view of science as a linearly progressive.<sup>3</sup> The epistemic merit of paradigm-shifts lies in the liberation it brings forth from the set ways of interpreting the world in order to open “new” epistemological possibilities or to conceive the hitherto inconceivable.<sup>4</sup> Thus, in a way, positivist truth is replaced by “novelty” as a decisive element in the scientific epistemology. Similarly, in the art world, “make[ing] it new,” sloganeered by Ezra Pound and almost synonymous with modernism, served as the touchstone for measuring artistic progress.

Thus, it is in the context of the conceptual pair of conventionality and novelty that I seek to understand the philosophical similarities and differences between Cavell and Kuhn. I am interested in how each of them engages with the role of conventions and how they conceive novelty within the disciplines. At the first glance, they do seem to share certain similarities. For example, In *Must We Mean What We Say?*, Cavell observes that minimalists and pop artists who defy the paradigm so much so that it is not informed by a commitment to the tradition are not doing art.<sup>5</sup> This is reminiscent of Kuhn who stated that there could be scientists but no science outside a paradigm.<sup>6</sup> Delving into their texts may reveal how far their philosophies are compatible with each other and if they, combined or individually, provide cues on to overcome the “two cultures” divide.

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2. Arthur Danto, “The Artworld,” *The Journal of Philosophy* 61, no. 19 (1964): 580.

3. Thomas Kuhn. *The Structure of Scientific Revolutions* (Chicago, IL: The University of Chicago Press, 1962), 66.

4. Arya Mohan S, “The Sciences and the Humanities: Building a Bridge between the ‘Two Cultures’ through Rhetoric,” *New Literaria* 3, no. 2 (2022): 38-44.

5. Cavell, *Must We Mean What We Say?: A Book of Essays* (Cambridge: Cambridge University Press, 1969), 221-22.

6. Caroline A. Jones, “The Modernist Paradigm: The Artworld and Thomas Kuhn,” *Critical Inquiry* 26, no. 3 (2000): 507.

## 1. Essence Reconciled with Conventionality in Cavell's Theory of Knowledge and Art

Modernism, as theorized by Greenberg, insisted on medium specificity.<sup>7</sup> The notion underlying formalism was that each art or medium has an essence which should not be contaminated by its traffic with another medium. For Greenberg, modernism is a self-critical activity that prompts each art to dispel everything unnecessary so that it can exist in its pure form.<sup>8</sup> The search for the “unique and irreducible” core must entice us with an artistic catharsis whereby the medium purges itself of everything it shares with other media.<sup>9</sup> But it's hard to brush aside the irony of emphasizing an imperishable core to art at a period when stability and coherence of everything else is being questioned and shattered. An atemporal essence specific to each artform is a venturesome claim in such an epoch. Michael Fried, Greenberg's early follower, later questioned the idea of timeless essences while maintaining that each art form within each period has an individual essence.<sup>10</sup> Essence is reconceptualized as a product of conventions, susceptible to change. Fried cites Wittgenstein directly in support of this understanding of essence as historically contingent and subject to change, “I say [...]: if you talk about essence —, you are merely noting a convention [...]. But what if I reply: to the depth that we see in the essence there corresponds the deep need for the convention.”<sup>11</sup> The depth of essence directly reflects the depth of the need for conventions, the innate human need to make an order of things. What we can mean, say, and understand is determined by the shared conventions to the point that the conventional becomes our *natural*. Thus, Cavell writes, “underlying the tyranny of convention is the tyranny of nature.”<sup>12</sup>

Thus, the foundations of art or knowledge or being are not in a pre-existing essence or reality, but in the conventions. Not only an apriori truth and a deterministic universe of the positivist science are re-articulated as the residuum of an or-

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7. See Diarmuid Costello, “On the Very Idea of a ‘Specific’ Medium: Michael Fried and Stanley Cavell on Painting and Photography as Arts,” *Critical Inquiry* 34, no. 2 (2008): 274-312.

8. Greenberg, “Modernist Painting” in *Modern Art and Modernism: A Critical Anthology*, ed. by Francis Frascina and Charles Harrison (New York: Harper & Row, 1982), 5-10.

9. *Ibid.*, 5.

10. Costello, “On the Very Idea of a ‘Specific’ Medium,” 26.

11. Ludwig Wittgenstein, *Remarks on the Foundations of Mathematics* (Oxford: Blackwell, 1956), 65.

12. Cavell, *The Claim of Reason: Wittgenstein, Skepticism, Morality, and Tragedy* (Oxford and New York: Oxford University Press, 1999), 123.

der-seeking pathos but even rationality is understood as the product of a preconditioning that Foucault called epistemes.<sup>13</sup> Resembling the Foucauldian perspective on rationality as subject to the generative principles of particular epochs, Kuhn points out in the introduction to the *The Structure of Scientific Revolutions* that those points of view which are discarded as myths or errors, say Aristotelian dynamics, phlogistic chemistry, or caloric thermodynamics, were produced by the “same sort of methods” we rely on for the production of knowledge claims currently accepted as science.<sup>14</sup> If we accept those discarded views as science, then we have to accept that science consists of frameworks inconsistent with the notions of rationality relevant in the modern times. The body of scientific knowledge constructed across time would then have different modes of rationality incomparable with each other. Hence, in systems of thought, anything that has come to perform like an objective entity has always been a contingent construct, be it positivist truth or apriori essence or an intact logic.

Echoing the Kuhnian emphasis on the conventionality of knowledge, Cavell writes in *The Claim of Reason*, reminding us of how he used to finish Kuhn’s sentences in Berkeley, that conventions — “grammar, codes, territorialities, myths, rules, standards, criteria” — are all that we have.<sup>15</sup> Conventions and the consensus they generate reflect values, for they express what counts as what matters. This general claim takes a systematic, methodical shape in Kuhn’s analysis of scientific discourse. Based on the incommensurabilities made manifest past occurrences of revolutionary change in the history of scientific development where the advancement from one episode to another, say from Newtonian mechanics to Einsteinian relativity, Kuhn proposed “paradigm shift” as the mark of scientific transformations. Despite some twenty-three meanings of the word “paradigm” that Masterman identifies, the word can be understood as expressing the idea that “universally recognized scientific achievements that for a time provide model problems and solu-

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13. By “episteme,” Foucault meant the set of unconscious rules that govern all serious scientific discourse in a certain society and time period and determine what does and what does not get taken seriously by that scientific community. Thus, episteme is the generative principle of knowledge or the ordering principle in a certain time. See Michel Foucault, *The Order of Things: An Archaeology of the Human Sciences* (Paris: Éditions Gallimard, 1966), 34.

14. Kuhn, *The Structure of Scientific Revolutions*, 2.

15. Ibid., xiii. Kuhn quotes how Cavell and he could communicate in incomplete sentences. Charles Bernstein, “Reading Cavell Reading Wittgenstein,” *boundary 2* 9, no. 2 (1981): 299.

tions to a community of practitioners.”<sup>16</sup> Nothing outside the paradigm is relevant to science. Hence, without the paradigm, there could be scientists but little science. Since each paradigm is self-justifying, there is no objective means of comparison between two successive paradigms. With the rival paradigms being incommensurable, scientific judgments on their relative merits are not just a matter of applying rules that could prove one paradigm superior to another. Consequently, when a proposition disrupts an existing paradigm (what Kuhn calls “revolutionary science”) needs to be evaluated, an appeal to factors not part of the ontological apparatus of the frameworks becomes imperative. And that criterion is the consensus among the scientific community. Given that scientists are specifically trained to make fair and informed judgments of this sort, Kuhn asks, “What better criterion than the decision of the scientific group could there be?”<sup>17</sup> This emphasis on the scientific community’s judgment as the ultimate source of science’s rational authority is the most fundamental feature of his account of science.

While Kuhn’s inquiry was restricted to the construction of scientific knowledge, Cavell was concerned with the structures that engender shared constraints on what can and what cannot be articulated metaphysically, aesthetically, scientifically, and philosophically. Cavell’s early works probed into the analytical tradition that advocated a “scientific conception of the world,” which, with its famous verifiability theory, rendered metaphysical and subjective statements meaningless.<sup>18</sup> Verifiability became the very condition of intelligibility in the analytical discourse. In “Existentialism and Analytical Philosophy,” Cavell pointed out that the first revolution in the analytical tradition grew out of the development of new logic or mathematical logic in the nineteenth century, as embraced by Russell and the early Wittgenstein.<sup>19</sup> It held that the linguistic expression of a proposition is a distortion of its real logical form. Thus, the early analytical philosophers tried to lay bare the logical structure of expressions to find statements’ meanings rather than relying on the linguistic utterances themselves. In refusing to take ordinary language, which is influenced by the context and social processes of arti-

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16. Margaret Masterman, “The Nature of a Paradigm,” in ed. Lakatos and Musgrave *Criticism and the Growth of Knowledge* (Cambridge: Cambridge University Press, 1970), 59–89. Kuhn, *The Structure of Scientific Revolutions*, xiii.

17. *Ibid.*, 170.

18. Cavell, “Existentialism and Analytical Philosophy,” *Daedalus* 93 no. 3 (1964): 950.

19. *Ibid.*, 949.

ulation, as the structures generating the intelligibility of the utterances, the human articulator is removed from the everyday. Thus, Cavell, following Austin and the late Wittgenstein, sought to subvert the analytical tradition with “ordinary language philosophy” by emphasizing that *we must mean what we say* without having to abstract a logical form underlying it. In OLP (which Cavell paradoxically identified as the latest phase in the analytical tradition), the focus is on how meaning is generated through the subjective utterances in everyday situations. Thus, language is brought closer to ordinary life. This method of bringing language or “words back” to the everyday is an attempt at humanizing language philosophy.<sup>20</sup> While the analytical aspiration for a logical reformulation of everyday language distances the human from his/her language, OLP brings the human back into discourse. Thus, Cavell’s interest in the “logic” of the ordinary language is part of the background to *The Claim of Reason*, a book in which he sought to humanize epistemology by bringing the human back into all the shared structures that constitute the fabric of human experiences. Hence, he delves into the logical depths of human experiences, including something as simple as identifying a toothache, in his discussions of criteria.

Cavell makes a distinction between criteria and standards. Criteria are the principles by which we decide if a particular thing is of a particular kind whereas standards refer to the degree to which that candidate meets the criterion.<sup>21</sup> Rationality, consistency, objectivity, non-arbitrariness — qualities that have traditionally been thought to distinguish the sciences from the arts — are ensured by formulating criteria which we all agree to, although always open to repudiation. Cavell emphasizes criteria as crucial to the intelligibility of utterances. And it is criteria that decide what could even amount as counting as relevant proof, though even criterion cannot satisfy our demand for proof. Cavell considers a variety of experiences, like someone being in pain, waiting for something, expecting something, claiming that it is raining, as prompting the question “but by what criterion do we know that?” The precedence Cavell attributes to criteria, a *man-made* framework, over evidence, an *impersonal* correlation between two distinct items, in generating the system of relations that matter in the knowability of anything, I feel, is Cavell’s cogent contribu-

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20. Wittgenstein, *Philosophical Investigations*, trans. G. E. M. Anscombe (Englewood Cliffs, NJ: Prentice-Hall, 1958), 116.

21. Cavell, *The Claim of Reason*, 11.

tion to the discourse surrounding the textuality of knowledge. Cavell reads Wittgenstein,

Wittgenstein's insight, or implied claim, seems to be something like this, that all our knowledge, everything we assert or question (or doubt or wonder about...) is governed not merely by what we understand as "evidence" or "truth conditions," but by criteria. ("Not merely" suggests a misleading emphasis. Criteria are not alternatives or additions to evidence. Without the control of criteria in applying concepts, we would not know what counts as evidence for any claim, nor for what claims evidence is needed).<sup>22</sup>

Mutually agreed upon criteria are indispensable for human life, whether this is for the production of scientific knowledge or for the creation of art or for living in a society by already entering into a "social contract" to be governed politically by a system.<sup>23</sup> In the context of mutual disagreement on an underlying criterion, no knowledge is possible. Language is shared and so is everything. All the structures that we use in order to know something, say pain or depression or expectation or being of an opinion, is dependent on human-made forms, "a background of pervasive and systematic agreements among us which we had not realized or had not known we realize" that Wittgenstein sometimes calls "conventions" or "rules."<sup>24</sup>

Cavell surely does destabilize the concept of a pre-existing, objective reality but his tone is positive. He looks at conventions as the generative structures that make knowledge possible rather than absurd networks of thought rendering false perceptions faulty. For him, there is stability despite the instability, essence despite the arbitrariness of conventions. Later when he discusses skepticism, even as he subverts the certainty of these very conventions which construe the matrix of all human experience, he steers clear of epistemological despair. Quoting the Malcolm-Albritton example, Cavell describes that pain gets manifested in different ways physically and mentally.<sup>25</sup> Mapping the changes in the brain activities could reveal that a physical

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22. *Ibid.*, 14.

23. *Ibid.*, 23.

24. *Ibid.*, 30.

25. *Ibid.*, 38.

criterion for the experience of pain is met, but the absence of this does not suffice to rule out the existence of pain. Meeting a criterion doesn't imply the certainty of its being, it only implies the "near certainty" of an event.<sup>26</sup> A criterion is something whose presence could be used to show the existence of a thing, but its absence doesn't guarantee the unreality of the thing. Hence there is a gap between "the (seeming) presence of a criterion and its satisfaction."<sup>27</sup> This gap creates the room for skepticism. In the absence of an unfailing criteria, it is a question of deep importance how we could even judge if we are using language correctly. When criteria are not universally applicable, this becomes an irresolvable problem and there is always an uncertainty if we have communicated ourselves correctly or understood the other correctly. We cannot know other minds and the external world. In that epistemological gap, uncertainty fills in. Skepticism is the human disappointment with the limitation of human knowledge.<sup>28</sup>

Thus, the relation between certainty and criterion is severed and the ontological status of criteria itself is disturbed, for Cavell asks, quoting Wittgenstein, "what are criteria criteria of?"<sup>29</sup> But Cavell doesn't leave us in an abyss with respect to the unreliability of our criteria. He equips us to settle with the "threat of skepticism" by talking us down from our disappointment with criteria, since criteria function as criteria "in certain circumstances" as Wittgenstein and Malcolm repeatedly emphasize.<sup>30</sup> In the instance of someone groaning, it could either be because the person is in pain or because he is feigning pain for a rehearsal. Neither scenario disturbs the equation between groaning and pain, for in both scenarios, groaning remains as a pain behavior. A person's groaning as part of a rehearsal is an instance of pretending to groan in pain. Hence, criteria dictate the conditions for something to be like something or for something's being so, even when things are not necessarily thus and so.<sup>31</sup> And, in certain circumstances, the satisfaction of the criteria seems fully concomitant with certitude. About how Wittgenstein's work circumvents the pathos associated with skepticism, Cavell says, "while at the same time this work seems to give the impression and often seems to some to as-

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26. *Ibid.*, 39.

27. *Ibid.*, 41.

28. *Ibid.*, 42.

29. *Ibid.*

30. *Ibid.*, 7 and 39.

31. *Ibid.*, 42.



sert, that nothing at all is wrong with the human capacity for knowledge, that there is no cause for disappointment, that our lives, and the everyday assertions sketched by them, are in order as they are.”<sup>32</sup> The longing for a balance in “the struggle of despair and hope” that he identifies in Wittgenstein’s works reflects the arbitrariness of criteria and simultaneously preserves the apparent stability and meaning that they enable.<sup>33</sup>

Though our criteria do not provide an infallible condition of agreement, they do provide the set of conditions necessary for disagreement. We do not really need to know for sure if another person is in pain. We only need an accessible association between pain and pain behaviour to keep the conversation going. Thus, conventions are the dependable structures generating the possibility of agreements (and disagreements). These conventions that we agree *in* and not on — which Wittgenstein calls the “forms of life” — are the reliable apparatus in our apprehensions of the world.<sup>34</sup> Everything is a product of conventions. Knowability itself is a possibility generated by conventions. The domains segregated as sciences and arts are the consequences of conventions woven differently for each. But here is a key to building a bridge between the discourses of the sciences and arts. When Cavell writes about the dependence of every human formation on conventions that, “human speech and activity, sanity and community, rest upon nothing more, but nothing less, than this,” he exposes their common foundations, and the epistemological distinctions between arts and sciences begin to blur.<sup>35</sup> Cavell’s theory of knowledge and art are the same. In knowledge and art, conventions are what we have; meaning in essence their outcomes. Just as a mutually agreed upon criteria meet certitude under certain circumstances, mutually agreed upon conventions in a particular time construct the essence of art. Thus, in “A Matter of Meaning It,” Cavell writes, “it is not clear a priori what counts, or will count, as a painting, or sculpture or musical composition. [...] We haven’t got clear criteria for determining whether a given object is or is not a painting, a sculpture. [...] The task of the modernist artist, as of the contemporary critic, is to find what it is his art finally depends upon.”<sup>36</sup> The essence of the art is not in some definitively fixed features internal to the art but in the relevant conventions that arose in response to the

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32. Ibid., 44.

33. Ibid.

34. Cavell, *Must We Mean What We Say?*, 52.

35. Ibid., 52.

36. Ibid., 219.

historical pressures and what deviates from the conventions falls into a void. Here is a “historicisation of essence,” the encasement of certainty to certain circumstances.<sup>37</sup> Thus, in Cavell’s theorization, it is conventions that formulate the criteria decisive in the knowability of the world; it is conventions that engender the medium for conceiving art. Just as criteria make intelligibility possible, artistic conventions and adherence to the medium make something recognizable as art. Therefore, Cavell would have a problem with the pop and minimal artists who would alter their art to the point that no common standard of judgement is possible. Such productions are inter-medial and therefore not art related. The essence that Cavell and Greenberg emphasized is not a timeless quality but what the conventions at a particular period are capable of articulating. Essence is reconciled with arbitrariness, and stability is reconciled with the precariousness that characterizes life.

## **2. The Pathos of Epistemological Loss: Departure between Kuhn and Cavell**

Cavell embraces the conditional certainty and conditional essence afforded by conventions, without despairing about the ineliminable human wish for certainty. Skepticism pervades life and it is in attempts to get past uncertainties that knowledge is constructed. Thus, absolute certainty could be the end of knowledge. In his later work, *On Certainty* (which did not really form the basis of Cavell’s work in *The Claim*), Wittgenstein segregates certainty from knowledge by saying that self-evident statements that do not elicit doubt foreclose investigations into them and do not amount to knowledge-claims. They are rather instances of certainty. Hence, to statements of indisputable conviction fashioned after G. E. Moore’s famous “here is one hand” argument, Wittgenstein says, “I am familiar with it as a certainty.”<sup>38</sup> Only those statements qualify as knowledge claims if there is a scope for disagreement and doubt. The divorce between certainty and knowledge that Wittgenstein proposes re-

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37. Diarmuid Costello, “On the Very Idea of a ‘Specific’ Medium: Michael Fried and Stanley Cavell on Painting and Photography as Art,” *Critical Inquiry* 34, no. 2 (2008): 292.

38. G. E. Moore, *Philosophical Papers* (New York: Collier Books, 1959), 144. Wittgenstein, *On Certainty* (Oxford: Blackwell, 1974), 272.

sonates with Cavell's explication of the skeptical thesis as: "our relation to the world as a whole, or to others in general, is not one of knowing, where knowing construes itself as being certain."<sup>39</sup> Thus, Cavell's theory of knowledge involves rethinking certainty from the center of epistemological discourse.

Distancing certainty from epistemology would re-consider the place of objectivity with respect to knowledge. Traditionally, only ahistorical, and objective knowledge that entailed certainty was considered authentic. Certainty is associated with an objective criterion of judgement, uninfluenced by any personal, prejudiced elements. This conception of knowledge that emphasized objectivity removed the human subject from the discourse. However, when Cavell embraces skepticism, he makes room for uncertainties, and, in a way for the subjective, the sacrifice of which ensures objectivity. Thus, in this paper, I juxtapose Cavell's views on epistemology that accommodate the subjective with his perspectives on artistic innovation, in order to interpret his explication of novelty in terms of adherence to tradition as a corollary of his humanized epistemology. Perhaps, this would be an opportune moment to also clarify the subtle difference between Kuhn and Cavell in their attitudes to convention-changes in science and arts respectively, where the former embodies a tragic sense of giving up the paradigm and the latter embodies a comic way of preserving the tradition. But, before I get into this analysis, I beg pardon for lingering on a few details from the history of science to emphasize the equation between authentic knowledge and the "giving up" of the self in scientific epistemology. After all, the postmodernist, post-positivist discourses on science have emphasized that the content of science is not separate from its history and philosophy. This could be the reason Kuhn himself was "often at a loss for response" when trying to decide on whether *The Structure* belonged to the works on the history or philosophy of science.<sup>40</sup> Hence, I feel that placing Kuhn's thesis in the context of the notion that reliable knowledge comes from detachment would benefit us in understanding the ethos underlying his concept of paradigm-shift.

A major aspect of Kuhn's work is the foregrounding of the communal nature of scientific discourse that challenged the long-standing positivist projection of science

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39. Cavell, *The Claim of Reason*, 48.

40. Karl Hufbauer, "From Student of Physics to Historian of Science: T. S. Kuhn's Education and Early Career," *Physics in Perspective* 14 (2012): 459.

as consisting of contributions from individual geniuses, recounted in history as linearly progressing events. In Kuhn's theorisation, the paradigm itself is inseparably linked to the community of practitioners and its consensus. Hence, the ethos which evolves along with the development of a scientific community is important for understanding the modern muddle of objectivity, reason, impartiality, morality and self-effacement that forms the background to my analysis of Kuhn's concept of paradigm shift. Even though science had been a collaborative activity since the seventeenth century, it was in the nineteenth century that it began to get professionalised in the modern sense and an "idealized impartiality" emerged as a characteristic of the scientific domain.<sup>41</sup> Subjective passions and positions were thought to result in perspectival distortions. "Transcendence of individual viewpoints," Lorraine Daston observes, "seemed to some nineteenth century philosophers a precondition for a coherent scientific community."<sup>42</sup> With the professionalization of science, communication across borders increased and a common viewpoint had to be adopted. Daston rewrites the uniformity in nature as the result of the homogeneity maintained in the communication among scientists in order to keep it a collaborative activity rather than the uniformity in nature enabling homogeneity in scientific communication. The self and the subjective must be lost in the scientific activity, either for the "collective good" or for "collective comprehension." Objectivity manifested as "empirical reliability," "procedural correctness," and "emotional detachment" comes from losing some aspect of the self, and critical distance has to be maintained in scientifically knowing something.<sup>43</sup>

Sociological studies of science reveal that the ideal of self-sacrifice of a scientist has been a crucial element in the institutionalization of science as an objective discourse. For example, scholars in the seventeenth century dedicated their work to the sovereign or a person in power to whom the work is addressed.<sup>44</sup> Inherent in this rhetoric of dedication is the feigned indifference to material rewards and personal ambitions on the part of the scientist. The trope of reluctant authorship enhanced the credibility of a theory since no economic benefits were to be reaped from the pu-

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41. Lorraine Daston, "Objective and the Escape from Perspective," *Social Studies of Science* 22, no. 4 (1992): 604.

42. *Ibid.*, 607.

43. Daston and Peter Galison, "The Image of Objectivity," *Representations* 40 (1992): 82.

44. Roger Chartier, "Foucault's Chiasmus: Authorship between Science and Literature in the Seventeenth and Eighteenth Centuries," in *Scientific Authorship: Credit and Intellectual Property in Science*, ed. Mario Biagioli and Peter Galison (New York: Routledge, 2002), 13-33.

blished knowledge claims. A perfect example of this is Galileo's dedication of the *Sidereus Nuncius* to the prince Cosimo de Medici which transferred the authorship to the prince and thereby earned him credit for his contribution.<sup>45</sup> Though the practice of giving up the authorship claims declined with an increase in priority disputes following the professionalization of science, the self-effacing qualities of the scientists were emphasized in other aspects of their practice of science. For example, about the nineteenth century botanist Joseph Hooker's ideals of a professional man of science, Richard Bellon notes that Hooker valued a commitment to the "good of science" rather than to one's personal satisfaction as the central characteristic of a good scientist.<sup>46</sup> Hooker had clear demarcations between love *of* science and love *for* science.<sup>47</sup> A man of science working to quench his personal desire or to realize his passion, according to Huxley, is still engaging in a selfish pursuit. His disdain for knowledge produced from one's passion for science comes from the difficulty of relying or trusting knowledge that originates from (and hence contaminated by) desire. In the construction of science as the domain of reliable knowledge, the knower has to detach himself from what he seeks to know. The details considered so far could be summed up to make the following assertion: certainty, in traditional epistemology, derives from objectivity that demands a sacrifice of subjectivity, a giving up of the personal. Self-abnegation and some form of "giving up" has always been a condition for attaining objective knowledge.

In my unpacking of Kuhn's idea of paradigm shift in the following paragraphs, I will show that Kuhn's theory retains an element of loss (in concordance with the rhetoric of self-sacrifice central to the positivist scientific epistemology), despite the sense of jocundity deriving from the epistemological liberation towards the "new" during a scientific progress. It is in the underlying pathos of Kuhn's perspective which is absent in Cavell's that, I feel, Cavell and Kuhn part ways. While scientific advancement in Kuhnian terms necessitates giving up the existing, constrictive conventions, Cavell insists on preserving tradition, manifested in his ideal of the conservation of conventions in an artistic innovation. I understand the Cavellian emphasis on preser-

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45. *Ibid.*, 22.

46. Richard Bellon, "Joseph Dalton Hooker's Ideals for a Professional Man of Science," *Journal of the History of Biology* 34, no. 1 (2001): 52.

47. *Ibid.*, 51.

vation of conventions while modernizing an art as an extension of his views on skepticism. It would be instructive to recall that this section began with how Cavellian acceptance of skepticism sidelines certainty from knowledge. Since Cavell does not regard certainty and objectivity as conditions of knowledge, he does not demand relinquishment of the subjective either. Thus, as he humanizes epistemology by putting the human and subjectivity back into the discourse, he minimizes the “critical distance” (the source of objectivity) by insisting on a view of innovation construed in terms of resemblance to the convention, and thereby subtly differs from the Kuhnian rhetoric of letting go of one’s personal convictions in the existing paradigm, an instance of distancing from the self. This inclination towards preservation reflects in the way he conceives the “new,” i.e., in terms of the extension of the old, as will be explained shortly. But before that, I will explain how the rhetoric of the loss of the self or the subjective echoes in Kuhn’s idea of paradigm shifts.

The replacement of an existing paradigm by a new paradigm, which marks scientific progress for Kuhn, is a sacrifice no less than self-abnegation, for the practitioners have boundless commitment to the paradigm, something Kuhn’s predecessor Michael Polanyi called “intellectual passion.”<sup>48</sup> Their commitment to the existing framework is so strong that they don’t feel compelled to reject the paradigm in order to explain the anomalous detail. Instead, they reserve such details inconsistent with the paradigm in the hopes that the existing framework would someday be able to either account for them or just explain them as illusory. Polanyi quotes how the French Academy of Science refused to admit the proof for the fall of meteorites throughout the eighteenth century despite its great obviousness just because it disturbed the traditional superstitious theories regarding heavenly bodies.<sup>49</sup> About the resistance to the new paradigm, Kuhn writes, “The source of resistance is the assurance that the older paradigm will ultimately solve all its problems, that nature can be shoved into the box the paradigm provides.”<sup>50</sup> The idea of convention here is as a constrictive framework that suppresses a different logic or a different way of seeing “nature,” slightly different from Cavell’s perspective of conventions as enabling forms whi-

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48. Michael Polanyi, *Personal Knowledge: Towards a Post-Critical Philosophy* (Chicago, IL: The University of Chicago Press, 1958), 143.

49. *Ibid.*, 138.

50. Kuhn, *The Structure of Scientific Revolutions*, 150.

ch he relies on for making sense of the world. Kuhn's contemporary Paul Feyerabend also viewed this rigidity of conventions as scientific orthodoxy rather than as a source of stability and meaning. An obsession with the existing paradigm is limiting and impedes the scientists from accessing alternative sets of knowledge claims which could be construed using other frameworks. Emphasizing the constrictive aspect of conventions and the need to duly abandon them, he notes in *Against Method* that "the attempt to increase liberty, to lead a full and rewarding life, and the corresponding attempt to discover the secrets of nature and of man, entails, therefore, the rejection of all universal standards and of all rigid traditions."<sup>51</sup> Thus, a tradition kept intact and mechanically repeated is counterproductive for a meaningful life.

In addition to the scientists' emotional commitment to conventions that tyrannize an alternative framework, the theory-ladenness of the ontological clusters of an existing paradigm always already constrains the possibility of conceiving conceptual fabrics inconsistent with the existing one.<sup>52</sup> Since the conception of alternative ways of perception is impossible within the same interpretive framework, one paradigm has to be given up for another. Without a loss of conviction in the already existing paradigm, no revolutionary change would be possible. Hence, scientific advancement, understood in terms of paradigm shifts, would not be possible without departing from the existing conventions. The painful separation from the paradigm which they felt intellectually committed to is a form of self-sacrifice, as required of an objective discourse aspiring for certainty.

What impedes progress has to be given up, what enables it has to be preserved. It is because Cavell looks at conventions as enabling that he presents the disruption of conventions in preservationist terms. When artistic conventions are modified — when there is a change — that change itself is enabled by these very conventions and by artists who seek to preserve the conventions. Thus, he writes, "it is because certain human beings crave the conservation of their art that they seek to discover how, under altered circumstances, paintings and pieces of music can still be made, and hence revolutionize their art beyond the recognition of many."<sup>53</sup> Here,

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51. Paul Feyerabend, *Against Method: Outline of an Anarchistic Theory* (London: Verso: 1993), 12.

52. Feyerabend, *Problems of Empiricism, Philosophical Papers* (Cambridge: Cambridge University Press, 1981), 45.

53. Cavell, *The Claim of Reason*, 121.

I'm reminded of the skeptic who does not obsess over certainty and objectivity, and hence resists giving up the "self" which is expressed as his/her conviction in the conventions — conviction not enough to be certain, but sufficient to generate agreement. Thus, I understand the Cavellian interpretation of artistic change as an extension of that which already exists, juxtaposing it with his views on skepticism. Skepticism, as previously stated, involves an epistemological gap where you cannot know for sure if you have understood the other correctly or if you have communicated yourself correctly. One person's utterances do not have anything in common with another person's utterances, if they mean different things. Still, they must agree *in language* or (in criteria in general) in order to be speaking at all. Hence, the utterances have something in common despite having no meaning in common. Cavell's interpretation of change as an extension of the already existing is an instance of finding something in common between the two articulations, where for the differences to be noticed, there should be something in common. For two things to be different, they should be sufficiently similar. A change counts as relevant only in its relationship to the previous paradigm. The change has to be from within. Thus, in changing the convention, the artist does not really depart from it. Cavell disregards pop, minimalism and conceptual art as irrelevant because they diverge from the tradition to the point that it no longer resembles the tradition, making it impossible to comprehend them as anything meaningful. Greenberg blankets them under "novelty art," rhetorically equating it with the low-grade commodities that were branded "new" for marketing purposes.<sup>54</sup> Only "reluctant revolutionaries" who in their later career were drawn back to the tradition they were modifying are considered as genuine innovators.<sup>55</sup> Greenberg too minimizes the sacrifice involved in an artistic progress when he discusses Cézanne who despite his impressionistic inclinations didn't fully give up the conventions. Greenberg writes, "It was almost precisely because of his greater reluctance to 'sacrifice' to innovation that Cézanne's newness turned out to be more lasting and also more radical than that of other post-Impressionists."<sup>56</sup> Even the act of changing the paradigm which, for Kuhn, is a relinquish-

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54. North, *Novelty*, 175.

55. See the debate with Greenberg in Thierry de Duve, *Clement Greenberg Between the Lines* (Paris: Dis Voir: 1996), 125.

56. Greenberg, "Conventions and Innovations," in *Homemade Esthetics: Observations on Art and Taste* (Oxford and New York: Oxford University Press, 1999), 54.



ment of the same, Greenberg calls an act of possessing. He says that in order to revolutionize a convention, one must “possess” it first.<sup>57</sup> Thus, the extent of change is re-articulated as an extent of possession; change is presented as fuller possession, downplaying the sense of abandonment.

Hence, there is continuity, rather than a loss of it. For Cavell, while the “relevant change” is always already a part of the tradition, for Kuhn, revolutionary change, is undeniably incommensurable with the conventions.<sup>58</sup> The result is a rupture, a discontinuity. There is no “entailment, inclusion, contradiction, disjunction” and the two paradigms are completely independent.<sup>59</sup> Science is re-articulated as a progressive but discontinuous discourse in post-positivist philosophy whereas each new tradition in art is a part of the old for Cavell. One recalls the age-old ambiguity surrounding the “new.” Since the “new” exists only in relation to the old, it always carries the past with it which makes novelty an ontological absurdity.<sup>60</sup> Novelty is a problematic concept for any system since novelty might disrupt the static fundamentals of that very system. According to the mechanical view of the world which holds that the world runs according to a set of natural laws, “the end is foreseeable in the beginning, the end is contained in the beginning.”<sup>61</sup> Novelty undermines this contribution of science. In fact, novelty is very disruptive to science, since science depends on the reproducibility of results and on the anticipation of results from a cause.

But Kuhn attaches “progress,” a very prized concept in science, to the “new” when he locates scientific progress in paradigm shifts as it brings a liberation from the old. Kuhn looks at the traditions as delaying the truly novel for a very long time. For novelty to be an actual ontological possibility, there must be a break with the tradition so that what comes after is unanticipated. Thus, Kuhn writes in an anti-teleological tone, “the entire process may have occurred, as we now suppose biological evolution did, without benefit of a set goal, a permanent fixed scientific truth, of whi-

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57. Ibid., 52.

58. Cavell, *Must We Mean What We Say?* 253.

59. Struan Jacobs, “Michael Polanyi and Thomas Kuhn: Priority and Credit,” 30, <http://polanyisociety.org/TAD%20WEB%20ARCHIVE/TAD33-2/TAD33-2-fnl-pg25-36-pdf.pdf>.

60. North, *Novelty*, 17.

61. Richard Boyle, *Natural Novelty: The Newness Manifest in Existence* (Lanham, MD: University Press of America, 2016), 23.

ch each stage in the development of scientific knowledge is a better exemplar.”<sup>62</sup> Cavell takes the exactly opposite perspective on novelty. He articulates a version of novelty that might kill novelty, since, for him, traditions determine and enable novelty. Even in the abstract sense, novelty makes sense only in relation to a past that didn’t contain it. Cavell focuses on that invisible and inextricable link between the old and the new when he writes, “the modernist is incomprehensible apart from his questioning of specific traditions, the traditions that have produced him. The modernizer is merely blind to the power of tradition, mocking his chains.”<sup>63</sup> The modernizer is not a threat to artistic essence for the conventions that construct the essence is not entirely sacrificed. There is no conflict between the old and the new; nor is there any loss incurred by a sacrifice of one’s convictions in conventions since the same conventions beget innovations. This resonates with a humanized epistemology that does not demand a relinquishment of the subjective, manifested even in the form of strongly held beliefs, to ensure objectivity.

### **3. Concluding Thoughts:**

#### **Kuhn and Cavell’s Comments on “Science and Art”**

In this paper, I have attempted to decipher Cavell’s philosophy of artistic progress by exploring its intersections with his speculations on skepticism and knowledge, and I have compared this philosophy with Kuhn’s ideas on scientific revolution. Cavell can construe a version of innovation that does not really part from conventions or does not require losing one’s conviction in conventions. I read this articulation of innovation in terms of preservation of traditions as comparable with his philosophy of skepticism. Cavell’s exposition of skepticism prepares us to settle for the perpetual condition of uncertainty in the knowability of anything. It would then re-think the aspirations for objectivity and the need to sacrifice the subjective, expressed here as one’s personal convictions in conventions. Thus, the preservational undertones of Cavell’s account of artistic innovation, are, for me, a corollaries of his views on a humanized

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62. Kuhn, *The Structure of Scientific Revolutions*, 172-73.

63. Cavell, *The World Viewed: Reflections on the Ontology of Films*, enlarged ed. (Cambridge, MA: Harvard University Press, 1979), 15.

epistemology. But why would I read Cavell's philosophy of the arts in terms of his views on epistemology? I am inspired to attempt this juxtaposition by Cavell's own bringing together of the two discourses of arts and sciences in his thoughts on the asymmetry in their relationship. Addressing the "inner loss" of the scientific discipline where young scientists go remote from the body of work that exerts its own inspiration, Cavell suggests that instead of introducing science students to art, they should engage in science as art and that they should "in short, become artists, to care whether their art is going to survive."<sup>64</sup>

Preservation is characteristic of arts, which is fundamentally creative in spirit, since art embodies the human wish to leave behind some remnants and hence beat the process of having to finally give up. Through art, life surpasses death. As Greenberg put it, "Art, is among other things, continuity."<sup>65</sup> Of life. Kuhn realizes this aspect about the art domain and notes that artistic outputs of a previous era remain vital parts of the contemporary artistic scene despite the altered sensibility.<sup>66</sup> For Kuhn, the differences between science and art become the most pronounced in the relevance the past traditions hold in the artistic sensibilities of the era that succeeds it. He points out that archival structures like museum would be important for art, but not so much for science, in formulating public taste or inspiring novices to the field.<sup>67</sup> This resonates with the Cavellian version of innovation that arise in arts while keeping the bond with the past intact. Kuhn observes that the scientist's goal is to find the best solution to a problem, hence the trajectory followed in its discovery and the account of idiosyncrasies of the scientists are an unnecessary liability for science.<sup>68</sup> He also points out that within the same tradition of styles, earlier sketches of a work of art would lead to its fuller appreciation by enabling the derivations of different meanings from the work's past shapes. Commenting on the impossibility of such an appreciation in science, he concludes rather affirmatively that "unlike art, science destroys its past."<sup>69</sup> However, Cavell understands this preservational aspect to be common to both science and art, as he writes,

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64. Cavell, "Observations on Art and Science," *Daedalus* 115, no. 3 (1986): 174.

65. Greenberg, "Modernist Painting," 10.

66. Kuhn, "[ The New Reality in Art and Science]: Comment," *Comparative Studies in Society and History* 11, no. 4 (1969): 407.

67. *Ibid.*

68. *Ibid.*, 408.

69. *Ibid.*, 407.

“the wish to make something, to *counter destructiveness*, to leave the world marginally better than you found it, to mend it, is at the heart of both the arts and the sciences.”<sup>70</sup> Thus, while Kuhn detaches and gives up traditions, Cavell possesses, preserves and sometimes obsesses about them.

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70. Cavell, “Observations on Art and Science,” 174.