6. The Claim of Reason in a Planetary Age: Martian Objects and Ordinary Language

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> Naming appears as a queer connection of a word with an object. — And you really get such a queer connection when the philosopher tries to bring out the relation between name and thing by staring at an object in front of him and repeating a name or even the word "this" innumerable times. For philosophical problems arise when language goes on holiday.[1]
>
> WITTGENSTEIN, *Philosophical Investigations*

> I take this evanescence and lubricity of all objects, which lets them slip through our fingers then when we clutch hardest, to be the most unhandsome part of our condition.[2]
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> RALPH WALDO EMERSON, *Essays & Lectures*

> Geology was called a descriptive science, and with its pitted outwash plains and drowned rivers, its hanging tributaries and starved coastlines, it was nothing if not descriptive. It was a fountain of metaphor — of isostatic adjustments and degraded channels, of angular unconformities and shifting divides, of rootless mountains and bitter lakes.[3]
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> JOHN MCPHEE, *Basin and Range*

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1. Ludwig Wittgenstein, *Philosophical Investigations*, ed. G. E. M. Anscombe (Malden, MA: Blackwell 2003), 24.
2. Ralph Waldo Emerson, *Essays & Lectures*, ed. Joel Porte (New York: Viking, 1983), 473.
3. John McPhee, *Basin and Range* (New York: Farrar, Straus, and Giroux, 1981), 25.

1) After Kuhn After Cavell

This essay is a creative inheritance destined for a volume celebrating the ongoing relevance of Thomas Kuhn and Stanley Cavell. But if it is inspired by, and converses with them, it is neither a reconstruction of their conversations nor a textual exegesis, but an attempt to reflect critically on the rationality of Earthlings in the Anthropocene while drawing orientation from Kuhn and Cavell. Arguably, such philosophical modernism is in spirit intensely Cavellian. Pursuing Emersonian self-reliance, this paper aims to make "philosophy yet another kind of problem for itself."[4] Therefore, this text is not Kuhnian. It couldn't be — Kuhn claimed that his "vocation" was to be a "historian of science," a member of the "American Historical, not the American Philosophical, Association."[5] But in its concern with science and history, and above all in its acceptance that our current historical context, the Anthropocene, cannot be thought outside of paradigmatic shifts within the history of science, notably the development of planetary science as a comparative and thus inter-planetary model for understanding our own terrestrial condition, what follows is Kuhnian.[6]

More concretely, this paper is about screened objects on Mars and their standing in ordinary language. It is about the scope and reach of everyday words in an age in which technoscience has enabled us to view worlds that are not our world. Our ordinary language is to an almost unsounded degree planetary. It is a deep expression of our terrestrial forms of life. As Cavell once put it: "whether or not there is a man in the moon, and whether or not there is life, or we put life, on the moon, it is analytically true that men do not inhabit the moon."[7] But if what we are inclined to call reason in ordinary language is the reason of Earthlings, that does not mean that we are

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4. Cavell, *Must We Mean What We Say?: A Book of Essays* (Cambridge and New York: Cambridge University Press, 1976), 74.
5. Thomas S. Kuhn, *The Essential Tension: Selected Studies in Scientific Tradition and Change* (Chicago, IL: The University of Chicago Press, 1977), 3. His posture on this point comes across slightly differently in his just-published posthumous work, though even there, where he more prominently presents himself as doing philosophy, he remains deeply wedded to history, writing that his concern is "primarily philosophical" but then immediately clarifying that what interests him in philosophy is "the nature of the historical process or the nature of human knowledge." Kuhn, *The Last Writings of Thomas S. Kuhn: Incommensurability in Science*, ed. Bojana Mladenović (Chicago, IL: The University of Chicago Press, 2022), 87.
6. The clearest articulation of the connection between our planetary age and the interplanetary dimension of Earth System Science is found in Dipesh Chakrabarty, *The Climate of History in a Planetary Age* (Chicago, IL: The University of Chicago Press, 2021).
7. Cavell, *The World Viewed: Reflections on the Ontology of Film* (New York: Viking Press, 1971), 105.

condemned to silence or blindness when confronted with objects on the Moon or Mars, nor that we can make no pretentions to universality within our expressive rationality. Only that these zones of univocity across planets are linguistically local: there is simply more of Earth in our language and in our thought than we might acknowledge before submitting the world in our words to critique.[8] Doing that, performing a critique of the place of the planet in our expressive reason, is what will occupy us in the following.

Returning to Cavell, this essay is about viewing Mars televisually. It emerges from a strange reading of *The World Viewed*. This discussion of Martian objects is about what happens when we screen a world. But Mars is not a Hollywood star. The screening of Mars is mostly done for planetary scientists. That world screened is not the world that Cavell meant when he wrote about movies. To classify and make sense of what is screened in terms of the geological history of Mars is a question for science, and yet thinking reflectively about the ethics of using everyday terrestrial words in this practice is a philosophical concern. It is in this space of tension between historical practices of making sense of the planetary system and making sense of the linguistic means by which we are making sense of that planet, and so are conditioning how we imagine and project our future selves with respect to that planet using our language, that ethical concerns with alterity arise. For Mars is a world viewed, but it is not our world viewed. When we view it, we project presence, we think that what is there exists in ontologically the same way as tables and chairs, and thus sometimes feel as if we can talk about being there as if that were equivalent to being here. But at what cost?

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8. One of the attractions of this particular and paradigmatic case is the ways in which it allows a defense and clarification of recognizably Cavellian and Kuhnian postures, in particular with respect to realism and the epistemic justifications of truth claims, that seem to stand outside of the norms of science and technology studies, film studies, and (to be honest) normative practice in the humanities and interpretative social sciences. So far as I can tell Cavell did not address these questions head-on, though his students, for example William Rothman and Toril Moi, have done an excellent job of tracing out the fault lines. Kuhn, on the other hand, wrote extensively against what he mostly called the strong program and the identification of his own work with the strong program, though it is not clear, given the direction but also the unfinished state of his last work, that he himself felt that he had found the right arguments to defend his posture. Though this is a war that will mostly here be waged only implicitly or in the footnotes, I would hope that readers will understand this text as illustrating a form of scholarly practice very much at odds with the current anti-realist norms. For helpful critiques of those norms within the humanities, see: William Rothman, Marian Keane, and Cavell, *Reading Cavell's The World Viewed: A Philosophical Perspective on Film* (Detroit, MI: Wayne State University Press, 2000); Toril Moi, *Revolution of the Ordinary: Literary Studies After Wittgenstein, Austin, and Cavell* (Chicago, IL: The University of Chicago Press, 2017).

2) Extraordinary Ordinary Language Philosophy

"Philosophical problems arise when language *goes on holiday*," when language *feiert*, celebrates, goes on vacation, ceases working.

It is easy to take Wittgenstein as saying philosophers ought to police extraordinary uses of language. From which it might follow that philosophical problems are nothing but "houses of cards," "plain nonsense," "bumps that the understanding has got by running up against the limits of language," and the "bewitchment of our understanding by means of our language." [9] Thus this observation about words going on holiday resonates with the quietism of the *Tractatus*, and Carnap's critique of Heidegger, with his reproach to metaphysicians that they build philosophical problems out of "meaningless terms" (*bedeutungslosen Wörter*), ordinarily (*gewöhnlich*) words taken in metaphorical senses.[10] The cure for philosophical problems would thus be silence or positivism.

But there are other readings of this phrase. Following Cavell, we could take what the tradition has ordinarily called philosophy, with its explorations into the epistemic concerns arising from "generic objects," which are improbable situations expressed in vacationing words, as missing out on the real depth of philosophical problems.[11] Leading (*führen*) words back from metaphysical to ordinary use (*alltagliche Verwendung*) would then not abolish philosophy and its problems, it would only rid it of its alienated avatars.[12] It would bring philosophy closer to "our lives."[13] Within the philosophy of philosophy, ordinary language philosophy thus appears as "second order philosophy," a gestalt shift within what we call doing philosophy, but one which finally follows the same aversive regularity that has always characterized philosophy.[14] But this new philosophy, in a way announced by Emerson, would indeed be re-oriented:

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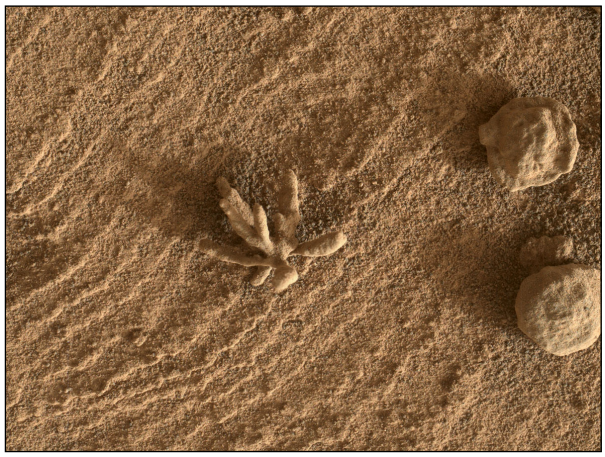
9. Wittgenstein, *Philosophical Investigations*, 52 and 54.
10. Rudolf Carnap, *Scheinprobleme in der Philosophie und andere metaphysikkritische Schriften*, ed. Thomas Mormann (Hamburg: Felix Meiner, 2004), 95.
11. For example, Cavell, *The Claim of Reason : Wittgenstein, Skepticism, Morality, and Tragedy* (Oxford and New York: Oxford University Press, 1999), 56 and 141.
12. Wittgenstein, *Philosophical Investigations*, 55.
13. Cavell, *Must We Mean What We Say?: A Book of Essays*, 167.
14. Wittgenstein, *Philosophical Investigations*, 53-54.

> I ask not for the great, the remote, the romantic; what is doing in Italy or Arabia; what is Greek art, or Provençal minstrelsy; I embrace the common, I explore and sit at the feet of the familiar, the low. Give me insight into to-day, and you may have the antique and future worlds. What would we really know the meaning of?[15]

Within the horizon of this turn towards the ordinary, another reading of language going on holiday becomes possible. What happens when ordinary language goes on what we would ordinarily call a holiday? What happens when a terrestrial language goes to another planet? What happens to language, to a philosophy rooted in what we ordinarily say and mean in one world or planet, whose words we have learned and taught in "certain contexts," and based on the expectation, and our expectation of others, to be able to project those words "into further contexts," when we find that we have strangely gotten ahead of ourselves in feeling that we have encompassed our world in our words, encountering a context which in its estrangement from the normal course of our historical experience prompts us to ask, with the skeptic, whether in this alien context we really do or ought to acknowledge that we have a right to say what would ordinarily say?[16]

Let us take our words on such a journey. This picture was taken on Feb. 24, 2022 by the Mars Curiosity Rover:



Nasa Curiosity Rover Photo.

15. Emerson, *Essays & Lectures*, 68.
16. Cavell, *Must We Mean What We Say?*, 52.

I take it that everyone, and not only professional students of Mars, sees things in this picture. I take it that this is only minimally a function of our gaze being theoretically enriched or informed by the special conceptual knowledge that Janet Vertesi calls "professional vision."[17] Which is not to say that there is nothing "theoretical," nothing tied to philosophy of mind in our being able to pick out that there are things in this photo rather than nothing. But it is to say, with the last Kuhn, but also with Tyler Burge, and with a great deal of work in the empirical psychology of vision, that discerning objects in an image (including this one) is something different from having explicit propositional knowledge about what is seen, is separable from the state of engaged conviction that Vertesi describes, using language borrowed from phenomenology, as "seeing as."[18] Accepting that we see something, and maybe don't see it as anything analogous to the items in our past experience, what are we inclined to say about what we see? Which words are warranted? What authorities, experiences, feelings, warrant that our ordinary criteria for wording this image, say if it wasn't an image of Mars, or was a fabrication, are applicable? How should we orient ourselves within the skeptical recital, when should we seek words to express doubts, to highlight self-awareness relative to the planetary impoverishment of our language, its terrestrial limits, its biases, its seductive ways of inducing misstatements based on se-

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17. Janet Vertesi, *Seeing Like a Rover: How Robots, Teams, and Images Craft Knowledge of Mars* (Chicago, IL: The University of Chicago Press, 2015), 205.

18. Ibid., 3069. Her usage of "seeing as" is derived from Merleau Ponty via Hans Radder, who she quotes as claiming: "Any observational process is always materially realized and conceptually interpreted right from the start." The issue with this claim, which entangles percepts with concepts, is that it risks over-intellectualizing perception and particularly its entanglement with language. The late Kuhn calls our ability to perceive something the "basic-object concept" suggesting that such perception is available to both "human infants and nonhuman animals," i.e. to beings that do not yet use language or do not necessarily have human linguistic concepts. The work of Tyler Burge has enormously enriched this direction in the late Kuhn by bringing the philosophical discussion on the psychology of perception into dialogue with the enormous empirical literature on human and non-human perceptual capacities. The point is not that perception is not in a certain manner of speaking theory-involving, but the ways in which it is so risks courting confusions when we align that theory with concepts and language. As Burge explains: "perceptual groupings and categorizations depend more on ways individuals are physically and functionally related to specific types of entities in the environment than on individuals' ability to describe or know something about what they perceive." One might in this context suppose that there is a degree of agreement in judgments with respect to the first forms of perception that is not reflected in later predicative judgments expressed in ordinary (or scientific) language bearing on the meaning or contents of these more primitive "first forms" of mind. To be fair, Vertesi's book, and I will return to this later, is concerned with the manipulation of alien data to produce images that produce events of perception, so her concern is not with the philosophy of mind, but rather the philosophy of robotic image capture. Kuhn, *The Last Writings of Thomas S. Kuhn*, 199; Hans Radder, *The World Observed, the World Conceived* (Pittsburgh, PA: University of Pittsburgh Press, 2006). Tyler Burge, *Origins of Objectivity* (Oxford and New York: Oxford University Press, 2010), 208. Burge, *Perception: First Form of Mind* (Oxford and New York: Oxford University Press, 2022).

ductive similarities, and when should we, despite it all, swallow our inclination to skepticism and acknowledge the claim that we can simply say what we ordinarily would? It may seem that all answers involve science or nihilism.

In one way these are metaphysical questions, but metaphysical in a way that has nothing to do with what we would ordinarily call metaphysics. They are metaphysical insofar as they involve going beyond what we would, in the terrestrial light of everyday language, be in the habit of calling *φύσις*: nature.[19] For if science is relevant to what we should say about Mars, most (but not all) of what we call nature and natural, say as nature it is evoked in Emerson's *Nature* as the "floods of life [that] stream around and through us," just is terrestrial nature.[20] Terrestrial nature is the one, the flowers and the forests and the fields, that poetry or *Dictung* brings to expression.[21] Terrestrial nature just was nature before Mars was screenable. In looking at the wording of that which lies beyond nature, extraordinary ordinary philosophy might seem merely a poetics of science fiction, an exploration of what poetry, as opposed natural science, might make from that world. But that may also be no catastrophe. Bringing philosophy close to literature and to science, particularly to poetry as understood by a Hölderlin-inspired Heidegger, who claimed that poets found "*Was bleibet*," call it a concern with what might remain, may not imply alienating it from itself, but rather remaining faithful to the spirit of philosophical inquiry voiced in the last line of *The Claim of Reason*: can "philosophy become literature and still know itself?"[22]

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19. Extraordinary ordinary situations involve encounters with realities that, from the point of view of the historically acquired resources of our ordinary language may seem to pose metaphysical questions, to the extent that these extraordinary contexts may present us with entities that have no existing place within the lexicons of physical objects contained in what we would ordinarily call nature. Thus, extraordinary ordinary language philosophy dialectically returns to metaphysics beyond the turn to the ordinary (as Martin Heidegger wrote in his *Einführung in die Metaphysik*, "*Philosophieren ist Fragen nach dem Ausser-ordentlichen*"). But here the extraordinary is only so on ordinary grounds, and so too the metaphysical is located within the physical and within the tensions of how we use language, resituated on the very threshold of ordinary experience and within our form of life and linguistic practices. If we were to go back to the roots of the term metaphysics, μετά, meaning beyond or after, and φύσις which approximately expresses "nature" in Greek (Heidegger glosses it as the "*das von sich aus Aufgehende*," something like the auto-emergent or auto-poetic), it seems clear enough that our ordinary languages, and the words for nature that articulate it, which is to say our understanding of what we would ordinarily call nature, or how things are, are terrestrial. So this metaphysics of the extraordinary ordinary, this focus on what we can do within ordinary language to confront that which seems to lie beyond the ordinary but is within what we would ordinarily call nature or the world, and not even as a speculation or a science fiction scenario but as what (I think we can agree) may be called ordinary reality, is different from what we normally call metaphysics. Heidegger, *Einführung in die Metaphysik* (Tübingen: Niemeyer, 1966), 10-11.
20. Emerson, *Essays & Lectures*, 7.
21. Angus Fletcher, *A New Theory for American Poetry: Democracy, the Environment, and the Future of Imagination* (Cambridge, MA: Harvard University Press, 2004).
22. Cavell, *The Claim of Reason*, 496.

3) On Ordinary Estrangements and the Limits of Language

Extraordinary situations, contexts in which one acknowledges one does not know how to go on, or feels dissatisfied with the words at hand, are (in a sense) ordinary situations, and so performances for dealing with the alien exist in ordinary language.

We have all imagined and rehearsed encounters with alien "its." Works of what Lovecraft called supernatural horror are full of exempla:

> "God! If you could see what I am seeing!"
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> I could not answer. Speechless, I could only wait. Then came the frenzied tones again:
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> "Carter, it's terrible — monstrous — unbelievable!"
>
> This time my voice did not fail me, and I poured into the transmitter a flood of excited questions. Terrified, I continued to repeat, "Warren, what is it? What is it?"
>
> Once more came the voice of my friend, still hoarse with fear, and now apparently tinged with despair: "I can't tell you, Carter! It's too utterly beyond thought — I dare not tell you — no man could know it and live — Great God! I never dreamed of this!"[23]

But we are not always speechless or oath-full when we come face to face with alien facts. We spin variations in the subjective register associated with encountering sublime objects. In a less sublime (and less xenophobic) register, we have the excuses, the circumlocutions, and the forms of pidgin. These are in the language of the traveler. We say things like "Sorry but I don't know how to say" — or perhaps express divergences from the ordinary "We say this, however." We have a rich grammar of pointing and gesturing (but that is hard to talk about).

Aside from these strategies, our vocabulary, viewed historically, bears the marks of struggles to overcome the bewilderments afflicting travelers and settlers. The American English of every child with the least curiosity about their world is rich

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23. From H. P. Lovecraft's "The Statement of Randoph Carter," in *Necronomicon: The Best Weird Tales of H. P. Lovecraft* (London: Gollancz, 2008), 13.

with words gifted by first nations peoples. Raccoon comes from a Powhattan word, *arahkunem*, meaning “he who scratches with his hands,” while opossum comes from the Virginia Algonquian words **wa. p-*, meaning "white," and **-aʔθemw-*, meaning "dog, small animal." Obviously, these deep roots are alienated from most speakers, but to those who speak attentively, the strangeness of the phonemes betrays debts. The production of extraordinary ordinary language has historically been part of discovering the world, or of discovering worlds, though in terrestrial cases, these discoveries were rarely encounters with natures radically unknown to all humankind and to language as such, but rather, as in the case above, cases where one lexicon is enriched from another already existing one whose world is different, but in a far less extreme sense than the one that concerns us.

4) On Scientific Revolutions as Extraordinary Ordinary Contexts

Scientific language is possibly more fertile ground for studying language coined ex-nihilo and with respect to absolutely alien conditions, not least because modern science has so often been characterized by a movement away from what Husserl called the lifeworld (*Lebenswelt*) towards what Kuhn, in his late work, characterizes as “artificial” objects, entities that only exist for us because of technology, and so stand exterior to any historically pre-existing “natural” linguistic kinds.[24] Because of this, the history of science would amount to a treasure chest of extraordinary situations in which ordinary scientific language users encountered a novel situations and recorded these meetings by generating new ordinary scientific languages and kind terms. Kuhn, in *Structure,* explains revolutions in precisely this way, writing that in them, it is as if “the professional community had been suddenly transported to another planet where familiar objects are seen in a different light and are joined by unfamiliar ones as well.”[25] Wording alien objects on Mars thus falls within a historical norm that is reflective of what happens in periods of revolutionary scientific

24. Edmund Husserl, *Die Krisis der europäischen Wissenschaften und die transzendentale Phänomenologie: eine Einleitung in die phänomenologische Philosophie*, ed. Elisabeth Ströker (Hamburg: Felix Meiner Verlag, 2012), 238. Kuhn, *The Last Writings of Thomas S. Kuhn*, 20.
25. Kuhn, *The Structure of Scientific Revolutions*, ed. Ian Hacking (Chicago, IL: The University of Chicago Press, 2012), 111.

change, with the exception that scientific language as we usually think of it begins outside of everyday usage and ends outside of ordinary usage (albeit while borrowing figures and metaphors from ordinary language along the way), while in the specific case of Mars, technological artifice has brought something that was distant from everyday terrestrial experience within the range of ordinary words that may seem to apply in the ordinary way.[26] Which is to say that in the ordinary language of science, we have less inclination to suppose that ordinary language might apply, or when it applies, it does so only metaphorically and in light of grounding metaphors, presenting an analogy between an ordinary thing and some abstract and seemingly unnamable equivalent.

Most of the revolutions studied by Kuhn involve theory-caused shifts in the meaning of existing terms. Duck/rabbit-like, an existing word takes on a new aspect, with this new meaning encouraging the scientist and their peers to find and name other new and theoretically and observationally derived terms.[27] Lexically, these new terms are often exported from existing non-scientific lexicons (the term quark famously comes from Joyce's *Finnegans Wake*), or from paleonymic or patronymic naming procedures (the official Mars topological nomenclature as voted by the AAU is comprised of Latin terrain terms, while the Higgs boson is named after Peter Higgs).[28] Kuhn, as a historian, did not arrogate the right to dictate the use of words in

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26. Hans Blumenberg, *Paradigmen zu einer Metaphorologie*, ed. Anselm Haverkamp, Dirk Mende, and Mariele Nientied (Frankfurt am Main: Suhrkamp, 2013).

27. Kuhn explains this point by explaining how the discovery that Earth was a planet with the moon rotating around it inspired other scientists to discover other moons rotating around other planets, with these additional observations deriving from the increased attentiveness to the relationship between moons and planets that emerged as a result of the Copernican revolution.

28. It is important to emphasize the degree to which the basic logic guiding this process is epistemically contested terrain. Strong program thinkers would tend to suggest that this entire process occurs totally at the level of language and theory, with "reality" (however this is understood) playing no role. Kuhn opposed this reading of his work. He insisted that making theory choice depend only on collective judgment (agreement *in verbis*) without assuming some progressive improvement in the parsing of reality did indeed make scientific theory choice "a matter for mob psychology." Yet he also acknowledged the impossibility (or at least the extreme difficulty) of grounding science on reference rather than on linguistic practice. One of his strategies to avoid the slippage towards strong program constructionism was an insistence on the specialness of scientific language as opposed to ordinary language. He even insisted that students in science should be taught Whig history as opposed to historical history of science as a kind of "noble lie," meaning that he wanted to shield scientific practitioners from the knowledge that scientific language could function in ways alien to contemporary theories, and likewise to maximally separate scientific language practices from ordinary language practices. In practice, this attempt to cordon off the language of science from other ways of using words seems unlikely to succeed, not because Kuhn is not right about the general difference between ordinary words and the terms as they are employed in scientific languages, but because there is frequently a degree of promiscuity with

science, precisely opposing those who would justify doing so as illegitimately politicizing of science.[29] More staidly, Kuhn considered the practice of the historian of science to consist in documenting (against more idealizing narratives of a continuous Whig history of science), the linguistic variability marking extraordinary ordinary events (revolutions) as indexed by the existence of ruptures or anomalies within the ordinarily stable senses attributed to scientific words. Within the hermeneutic posture taken by the Kuhnian historian of science, these symptoms of linguistic rupture appear as homophonous but not quite homologous terms located within revolutionary texts. Grasping the "alienated" aspect of these terms, the historian embarks on an epistemic and ontological "reeducation" in the alien reference worlds of "older lexicons" which permits an inter-terrestrial voyage into a linguistic world from science's past.[30] Once alienated, the historian then engages in a textually mediated dialogue with the ghosts of past scientists. As Kuhn writes: "the past of science should be

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respect to the frontiers between both domains, such that terms like "carbon" which clearly belongs to the abstract language of science become profoundly loaded in ordinary language, just as (in particular) figures and metaphors from ordinary language can play roles in theory development within scientific language. One way of putting this is to suggest that while Kuhn is doubtless basically right that scientific theory choice follows rules that are different from the (call them mob rule) logics governing the development of ordinary languages, he (despite his critique of idealism in the history of science) is too idealistic about the separability of these two lexicons. That said, one interesting feature of Mars is that it is a case in which the gap between scientific and ordinary language is relatively clear: a-priori all scientific language already applies to Mars abstractly, while a-priori all ordinary, call it presence-level language doesn't, since all of that language, at least so far as natural kinds go, comes from our natural history on our planet, and so need not automatically apply to what we find on Mars. Kuhn, *The Essential Tension*, 88; Kuhn, *The Last Writings of Thomas S. Kuhn*.

29. Obviously, some version of this kind of politicization of science, and scientization of political discourse has been critical to the work of thinkers like Bruno Latour and his constructionist followers. As I have indicated in the note above, Kuhn is clearly right to resist this politicization, but he is doubtless himself too idealistic with respect to the boundaries and frontiers between science and politics. Performatively, the interest of the Martian objects case, and, let us say extraordinary ordinary language philosophy in general, is that it on the one hand remains true to Kuhn's intuition that scientific language is not necessarily political in scientific contexts while acknowledging that the boundaries between contexts and employments of science terms are porous, and that there is clearly a role for philosophy within the negotiations associated with the ethical and political implications of these shifting frontiers. In the following, for example, which deals with a language that may seem to belong exclusively to science, specifically Martian geomorphology, we will suggest that it is only in the case of certain infelicitous lexical choices by scientists, above all cases in which they employ ordinary language lexical items in a recognizably everyday sense that their science becomes political. Note that this is a far cry from claiming that all scientific theory choice and language is political, for that argument can only be arrived at thanks to a far more transcendental argument linking all truth claims to politics via empirically hard to cash, but also sophistically hard to disprove, claims regarding how they ideologically lend support to the hegemonic political order (i.e. capitalism). See Bruno Latour, *Les Microbes: guerre et paix, suivi de Irréductions* (Paris: La decouverte, 1984). Also, and with particular reference to capitalism and ideology, see Mark Fisher, *Capitalist Realism* (London: Zero, 2009).

30. Kuhn, *The Road Since Structure: Philosophical Essays, 1970-1993, with an Autobiographical Interview*, ed. James Conant and John Haugeland (Chicago, IL: The University of Chicago Press, 2000), 86.

approached as an alien culture, one that the historian strives first to enter and then to make accessible to others."[31]

Yet if the historian only learns and reports on how scientists used words, he does something philosophically different when writing history. Kuhn was not a "textbook" historian of science precisely because he invented a novel kind of historical language.[32] This was not the ahistorical language of the present, but a historically alienated writing. It derived from an exercise of expressive judgment (reflections on whether and how one means what one says) aimed at somehow squaring the circle of bringing out (on the one hand) the incommensurability of past scientific languages, *and* (on the other) of remaining scrutable to contemporary readers. With careful exegesis, one could make explicit how Kuhn goes about doing this, deriving from Kuhn's historiographical practices a Kuhnian extraordinary ordinary language philosophy or "theory of translation."[33] But I will not pursue that project. Translation matters less than invention here. On Mars there are no alien informants, and Kuhn's practice presupposes the existence of historically alien textual witnesses writing on a common planet. Likewise, Kuhn's animating concern was epistemic accuracy (whether that accuracy was found in natural science or historical hermeneutics), and this, to put it bluntly, might seem to need no philosophical justification. But what will matter most

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31. Kuhn, *Black-Body Theory and the Quantum Discontinuity, 1894-1912* (Chicago, IL: The University of Chicago Press, 1987), 368.

32. "History, if viewed as a repository for more than anecdote or chronology, could produce a decisive transformation in the image of science by which we are now possessed. That image has previously been drawn, even by scientists themselves, mainly from the study of finished scientific achievements as these are recorded in the classics and, more recently, in the textbooks from which each new scientific generation learns to practice its trade." Significantly enough, the late Kuhn consistently defended the pedagogical utility of textbook science writing, which he calls a "noble" lie is given that attempts at a properly historical history of science are "at best a slow and inefficient way" of teaching science and its norms. Kuhn, *The Structure of Scientific Revolutions*, 1. Kuhn, *The Last Writings of Thomas S. Kuhn*, 88.

33. To offer a bit of an example, Kuhn often mentions but does not use terms, as he illustrates in this passage, from *The Road Since Structure*, which bears on Quine's reflections on translation and translatability in *Word and Object*: "Why is translation, whether between theories or languages, so difficult? Because, as has often been remarked, languages cut up the world in different ways, and we have no access to a neural sublinguistic means of reporting. Quine points out that, though the linguist engaged in radical translation can readily discover that his native informant utters "Gavagai" because he has seen a rabbit, it is more difficult to discover how "Gavagai" should be translated. Should the linguist render it as "rabbit," "rabbit-kind," "rabbit-part," "rabbit-occurrence," or by some other phrase he may not even have thought to formulate? I extend the example by supposing that, in the community under examination, rabbits change color, length of hair, characteristic gait, and so on during the rainy season, and that their appearance then elicits the term "Bavagai." Should "Bavagai" be translated "wet rabbit," "shaggy rabbit," "limping rabbit," all of these together, or should the linguist conclude that the native community has not recognized that "Bavagai" and "Gavagai" refer to the same animal? [...] These examples suggest that a translation manual inevitably embodies a theory [...]. To me they also suggest that the class of translators includes both the historian of science and the scientist trying to com-

in what follows are the ethical and even the aesthetic dimensions of what we say, thus, we turn to Cavell.

5) The World Viewed or A World Viewed

We relate to Martian objects through screens, so Cavell's question "What happens to reality when it is projected and screened?" raises its head here.[34] But in shifting the context from Hollywood films to objects on Mars there is a shift in the grammar of the word "reality." When Cavell talks about reality, prompting resistance in his critics and sometimes embarrassment in his defenders, he is making a pitch for something that is hard to accept philosophically because of the narrow entanglement of skepticism and epistemology, but which is also hard to deny with respect to how we use the word "reality" in ordinary language.[35] Stated somewhat flatly, when Cavell says that film shows us reality, do we feel we don't understand him? More to the point: what else would we call it? Isn't that just how we use the word, "reality," for example, in the context of comparing a photo to a painting of a similar object? But if this is so, Mars forms an interesting case. Unlike on Earth, where we may be satisfied that we know the reality of ordinary things independently from their projections on screens and thus feel that we can identify realism in painting and reality in photos, we realistically lack criteria for judging the realism of what we see on Mars. With respect to the reality of Mars in the photo, our justification is heavily based on our faith in photography

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municate with a colleague who embraces a different theory." What Kuhn seems to be saying here is that writing the history of science implicitly demands producing a theory of translation which is, (in other words), an extraordinary ordinary language philosophy, but that this historian, insofar as they are doing the work of the historian (and not the work of the ordinary language philosopher) does this implicitly, without voicing justifications (as does the ordinary language philosopher in their very practice of doing philosophy, why we say what we say in the way that we say it). Historians just do it. (Kuhn, and I am supposing this expresses a judgment about himself derived from his multiple conversations with Cavell, explicitly claims that he wasn't good at doing it, saying that he lacks "the skills of an ordinary language philosopher.") Kuhn, *The Road Since Structure: Philosophical Essays, 1970-1993, with an Autobiographical Interview*, 165. The second citation is from Kuhn, *The Essential Tension: Selected Studies in Scientific Tradition and Change*, 336. See also W. V. Quine, *Word and Object* (Cambridge, MA: The MIT Press, 2013).

34. Cavell, *The World Viewed*, 38.

35. This point has been brought out marvelously by Markus Gabriel in his work on the place of skepticism within the "epistemic economy" of the theory of knowledge. Markus Gabriel, *An den Grenzen der Erkenntnistheorie : die notwendige Endlichkeit des objektiven Wissens als Lektion des Skeptizismus*, Originalausg. ed., Alber Philosophie (Freiburg: Alber, 2008).

itself, our belief in what Cavell calls its "automatism," and our belief, though wholly ungrounded in concrete experience, that Mars is like the Earth.

Martian things in photographs viewed on Earth, seem, by automatism, to have a familiar relationship with terrestrial things in photographs.[36] This seems true even if the things the photos show are alien, strange to us and our common terrestrial experience because they are products of Martian, and not terrestrial history. That means that what we see in images of Mars is not what we would, at least not ordinarily, call the natural world, but we also hesitate to say that what we see is neither really the world nor natural. Maybe we can say that we do not know where to place objects on Mars because we have not yet been present on Mars and so come to know, in practice, hypothetical reality as real. Are they within or without of our world? Maybe we want to say that what we see is real, but that we really don't know what we really are seeing. So, they are alien, but not completely, since they are, in another way, just ordinary things.

But more proximately, objects in images of Mars pose ontological questions that are also questions of grammar. Of movies, Cavell writes: "Photography maintains the presentness of the world by accepting our absence from it. The reality in a photograph is present to me while I am not present to it; and a world I know, and see, but to which I am nevertheless not present (through no fault of my subjectivity), is a world past."[37] Much of this fits when it is Mars that is viewed, but in the case of Mars presentness is not maintained but somehow discovered or affectively created through the photo, generated as a future promise via our belief in the reality of the pasts present in the photo by automatism, a presentness that is factually, at least for Earthlings, a fiction, for we have

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36. I take this to hold true even and despite the fact that we can know, thanks to the work of Vertesi, that images such as this one have been digitally manipulated so as to make the data render something visible. This is so to the extent that I also know that images on Earth can be digitally manipulated, or that the development and processing of images can in normal cases count as such manipulation. Thus, even if I know that the image is a product of processing, I feel inclined to doubt that this processing is deeply disanalogous from what occurs ordinarily with photographs, and likewise disinclined to believe that the manipulations of the scientists amount to something akin to the efforts, on the part of Earthlings, to dupe us into believing what is not. Put otherwise, even in full knowledge that photographs are constructed, I am not inclined to believe that we are in a Reality + type scenario with respect to these photos, even if (as a point of fact) I couldn't tell from the images whether they were not (for example) the result of Martians hacking the image to make us Earthlings think that Mars was a dead planet so as to keep us distant. Put somewhat otherwise, the evidence that she offers regarding the institutional construction of the image precisely offers up, within the overall epistemic economy bearing on the interpretation of these images, justifications for believing that what one thinks one sees — Mars — is, within the horizons of ordinary epistemic uncertainty, what one sees. On the idea of a Reality + scenario, see the David John Chalmers, *Reality+: Virtual Worlds and the Problems of Philosophy* (New York: W. W. Norton, 2022).
37. Cavell, *The World Viewed*, 45.

never, in fact, been present on Mars. But somehow, and thanks to our ordinary sense of the relation between presence and photos that constitutes something of the essence of their reality for us, we find it almost impossible to deny that Mars viewed is anything but reality, or at least a reality, viewed. Nevertheless, rather than seeing, as with film, a world past, we seem more inclined to imagine and describe what we see on Mars (even if it is, as is automatically the case in all photos, a world past) a future world, maybe our future world, at least insofar as we are speaking about it in ordinary language. That is perhaps a concession to the fact that the presence glimpsed on Mars in photos is precisely a projection of telepresence, a technological avatar of our being there. Which means that when we express the judgement that the photo of Mars shows reality, and reality in the normal sense, we are not saying the same thing as saying that a photo of our world shows reality. If anything, our claim about the reality in the Martian photo expresses our faith in the effectiveness of what we might call realist magic of photography: our belief in the reality of technology's capacity to automatically capture reality.

We acknowledge that things are present on Mars, but we know that this is an analogy, but one that seems to resonate with the ways in which we use the words real and really. This a question of grammar, a question of where we stand relative to what we are ready to call reality within an ordinary discourse that makes everyday sense which differentiates Cavell's world viewed from the Martian world viewed, and ought to be taken as orienting the claims being made in the sections that follow.

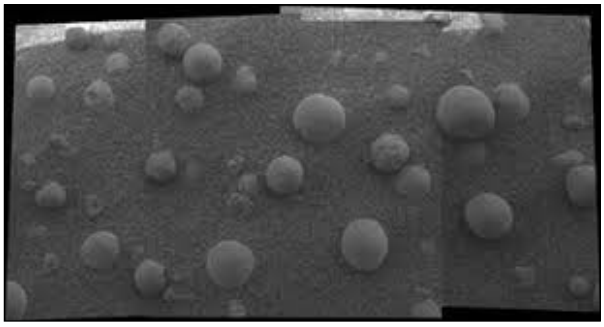
6) *On Words and Things on Mars*

It may seem that our best bet for naming Martian objects and articulating Martian reality are the procedures of natural science. Describing Mars is the job of planetary geomorphologists. Victor Baker, perhaps the most philosophically inclined of them all, describes his work as a "reality-dominated" as opposed to "theory-dominated" science.[38] It moves not from concrete to abstract, but employs the abstract to make sense of the concrete, with the concrete here referring to the reality screened. To this

38. Victor Baker, "Extraterrestrial Geomorphology: Science and Philosophy of Earthlike Planetary Landscapes," *Geomorphology* 7 (1993): 21.

extent, we could understand Martian geomorphology as the historical science of naming remotely sensed things on Mars via science-driven explanations of how these things came into being over the course the planet's history. Yet even if Martian geomorphologists and experimental science employing Mars analogues offer special insight into naming, there is still space for philosophy, for the question of which word to choose, and the mere question as to whether there is a question, which is also a question regarding the inevitable degree to which we ourselves as Earthlings are the problem and the source of our skepticism, attests to the truth of skepticism.

In extremis, science does not resolve borderline cases so much as discover them.[39] Yet before passing to a challenging case, let us consider a few normal cases.



Nasa Opportunity Rover Photo.

Take the round things in this picture from the Mars Opportunity rover. The rover has many sensors other than an optical camera, and their data offers insight. From abstract analyses, scientists know that in their chemical composition is not absolutely alien.[40] They are made of hematite. We might wonder if a terrestrial equivalent exists.

39. It may seem that the choice of the specific lexical terms and their origins makes no difference. For example, we might imagine that the sense of the word comes from their function within the sentences, much as it may seem—following an argument made by Gustafsson, that the actual material of chess pieces matters not for playing the game of chess (that it would be the same game, for example, if it were played with other than standard pieces). However, this seems at most partly true, not so much with respect to the playing of the game (in this case science) but with respect to the interpretation of the game (here moving back to chess). For example, given that the characters in chess are political figures, we are inclined to call it a strategy game. But if the queen was a rat, and the pawns were diseases, perhaps we would say that is a game about how the devil, or at least badness, uses cleverness to destroy the world. The difference is not nothing. Martin Gustafsson, "Wittgenstein on Using Language and Playing Chess: The Breakdown of an Analogy and Its Consequences" in Sofia Miguens, *The Logical Alien: Conant and his Critics* (Cambridge, MA: Harvard University Press, 2020).

40. The sensors included on Opportunity include: 1. Panoramic Mast Assembly a. panoramic cameras (Pancam) b. navigation cameras (Navcam) c. miniature thermal emission spectrometer (Mini-TES) 2. Mössbauer spectrometer (MB) 3. alpha particle x-ray spectrometer (APXS) 4. magnets (to collect dust particles) 5. microscopic imager (MI) 6. rock abrasion tool (RAT). Data from Asif A. Siddiqi, *Deep Space Chronicle: A Chronology of Deep Space and Planetary Probes, 1958-2000* (Washington, DC: NASA, 2002), 125.

In the language of the literature, it doesn't: they are called "Martian blueberries" (sometimes with, sometimes without the scare quotes). This expresses some aspect of what we are inclined to say. They look like blueberries, and (at the same time), they are not what we would ordinarily call blueberries. Ironically, the familiar word keeps the object alien while allowing us to speak about it. Now consider the implications of calling them marbles. Now in a certain sense marble could fit. But it would also generate confusions: marble already exists as a semi-technical term for certain terrestrial things. Below are moqui marbles, round hematite balls found in the Utah desert:

Moki Hill – HITTR, Grand Staircase.

If blueberries were "marbles," that would articulate a strong analogy inducing an expectation that there exist "marbling" processes on both Earth and Mars. But "blueberries" holds in abeyance this grammatically elicited process. When we speak of blueberries, and to quote Cavell: "the paths of action, the paths of words, are blocked," or rather, they are opened and shut at simultaneously.[41] Thus, our hematite spheres remain alien until more data can be acquired and or new words imagined. That is not a tragedy. Should we wish to unblock marbling as a multi-planetary phenomenon, we could do more research.

Sometimes that will liberate our desire to project our words into other worlds, and so dispel skepticism, other times it won't, and skepticism towards our own expressive capacities will have proven an epistemic virtue. One question debated among the first generation of geomorphologists was whether there were "canyons" on Mars.

41. Cavell, *The Claim of Reason*, 125.

Many assumed that there were, because they saw familiar shapes in the images from the Mariner and Viking missions. However, as Robert Sharp argued in a 1973 article, those features could be "closed depressions" or "fretted troughs." Even if they looked like "the deeply dissected high plateaus of the western United States" there was no evidence that they "compose a normally integrated trunk and tributary system" nor that they owed their genesis to "running water."[42] Sharp was wrong: there was once abundant liquid water on Mars, so scientists now speak of there being canyons. But he was right to provisionally seek out ways of alienating that world, for in the absence of cultivated alienation whole lines of questioning are closed.

Our examples stand inside scientific practice, as if the only thing that matters with respect how we use our words is the cultivation of epistemic virtues such as curiosity and skepticism. Yet not all word choices only bear on scientific practice. Some bear on the future of humanity and the planet. Deciding whether there is "soil" on Mars is one such case.

7) *Soil or Regolith?*

When looking at the previous images many may fancy having seen soil. This is a proof, in a way, that soil belongs to the lexicon of everyday language. The alternative term, regolith, is neither ordinary nor richly invested in cultural practice. People use soil all the time, and more to the point, soil is a word that plays a deep role in how we imagine the world and the nature of nature. We use soil, in a general way, to express what the ground is. But in this way soil often plays a grounding role in how we imagine the structure of the historical logic of nature. In Walt Whitman's poem, "Song of Myself," soil articulates metonymically the matrix from which the entelechy of life itself springs:

> I celebrate myself, and sing myself,
> And what I assume you shall assume
> For every atom belonging to me as good belongs to you.
> I loafe and invite my soul,
> I lean and loafe at my ease observing a spear of summer grass.

42. Robert Sharp, "Mars: Troughed Terrain," *Journal of Geophysical Research* 78, no. 20 (1973): 4063.

> My tongue, every atom of my blood, form'd from this soil, this air,
> Born here of parents born here from parents the same, and their parents the same,
> I, now thirty-seven years old in perfect health begin,
> Hoping to cease not till death.
> Creeds and schools in abeyance,
> Retiring back a while sufficed at what they are, but never forgotten,
> I harbor for good or bad, I permit to speak at every hazard,
> Nature without check with original energy.[43]

Soil here is the fount and foundation of American being, that from which springs, poetically, the nation, since Whitman, in these lines, is finding and founding the republic in verse, composing that democratic hymn for and from the American land: *Leaves of Grass*. We use soil, also ordinarily, to speak about things that are soiled, things that are ruined. Elsewhere in *Leaves*, this double sense of soil is spun into a kind of metaphysical paradox making the word encompass the mystery of terrestrial life itself, such that the sense of soil involves an entity that brings contraries together within a paradoxical composting union:

> Now I am terrified at the Earth, it is that calm and patient,
> It grows such sweet things out of such corruptions,
> It turns harmless and stainless on its axis, with such endless successions of diseas'd corpses,
> It distills such exquisite winds out of such infused fetor,
> It renews with such unwitting looks its prodigal, annual, sumptuous crops,
> It gives such divine materials to men, and accepts such leavings from them at last.[44]

To speak like an astrobiologist, soil in Whitman is the ordinary language answer to the Fermi paradox's question regarding why we are alone in our solar system: on Earth alone there is soil, elsewhere there is mere regolith. I invoke Whitman here not because

43. Walt Whitman, *Leaves of Grass, and Selected Prose* (New York: Modern Library, 1950), 18.
44. Ibid., 221.

we all use soil as he does, only to suggest that there is more culture and Earth built into soil than we might imagine. That said, my reference to Whitman is not totally arbitrary. As Jed Rasula's fine study *This Compost* shows, Whitman's soil fertilized a rich crop of subsequent American poetry, such that the modernist poetic idiom of the United States might be said, with little exaggeration, to bloom from recompositions and decompositions of Whitman's discovery of the poetic power of American soil.[45] In sum, for earthlings, and for American earthlings in particular, soil is not just any word.[46]

Thus, to say that there is soil on Mars, and to say so as a scientist, is to say that others can project, with all the epistemic confidence encouraged by science, this ordinary but grounding word, out beyond our soil, out into space, out into the terrain of the future. If the scientific data showed that Martian surface matter just was identical to terrestrial surface matter, there would obviously be soil on Mars, and so there would be no space for philosophy. But therein lies the rub. Terrestrial soil and Martian regolith are not chemically identical. Saying that there is soil on Mars not like saying there is hematite. Until 2017 there were institutional conventions which forbid anyone from claiming that there was soil on Mars. Soil, according to the SSSA (Soil Science Society of America) Glossary of Soil Science Terms, was defined as follows: "The unconsolidated mineral or organic material on the immediate surface *of the earth* that serves as a natural medium for the growth of *land plants*."[47] But now, thanks to lobbying by planetary scientists, it reads: "The layer(s) of generally loose mineral and/or organic material that are affected by physical, chemical, and/or biological processes at or near the planetary surface and usually hold liquids, gases, and biota and support plants."[48] This redefinition of soil did not result from a new discovery or confirmation: only from a desire

45. Jed Rasula, *This Compost: Ecological Imperatives in American Poetry* (Athens, GA: The University of Georgia Press, 2012).
46. This claim can of course be extended to nearly every culture, though in raising the question of the soil, and in claiming it as universal, it would seem immediately to demand that we attend to differences and incommensurabilities, the senses in which *sol*, or *terre*, or *boden*, or *Erde* or even just ground are or are not soil, and that is only to speak of the words used in the languages in which I myself most frequently sojourn.
47. The full definition reads as follows: (i) The unconsolidated mineral or organic material on the immediate surface of the earth that serves as a natural medium for the growth of land plants; (ii) The unconsolidated mineral or organic matter on the surface of the earth that has been subjected to and shows effects of genetic and environmental factors of: climate (including water and temperature effects) and macro- and microorganisms, conditioned by relief, acting on parent material over a period of time. A product-soil differs from the material from which it is derived in many physical, chemical, biological, and morphological properties and characteristics. See Harold van Es, "A New Definition of Soil," *CSA News* 62, no. 20 (2017).
48. Ibid.

to institutionalize and so justify the practice of projecting that ordinary terrestrial word into alien contexts. As J. F. Bell et al. explained in a paper published in in *The Journal of Geophysical Research*, the term typically being used to talk about what they were petitioning to call soil was "regolith," but as they were inclined to use it, regolith seemed to refer to "the thick, jumbled-up layer of rocks and debris created on an ancient planetary surface like the Moon or Mars," but didn't seem to properly describe the "fine-grained, porous, uppermost layers" of the Martian surface, while they felt that soil did.[49] In other words, what they felt was the right word wasn't available. But rather than coin a new one, as Bell explains elsewhere (in a popular history of the discovery of Mars written with William Sheehan), they simply wanted to employ "plain old 'soil'" as opposed to some monstrous term like "fine-grain regolith," judging the latter "too cumbersome" and too "jargonistic."[50] This is a kind of ordinary language argument, but one that rather than wrangling with the salutary skepticism that is raised by monstrous terms, seeks to repress it, and so to treat the extraordinary as a mere extension of the ordinary by fiat. In doing this, Bell et al. fail to acknowledge the weight of moral responsibility implicit in making claims "to be speaking with a universal voice."[51] In the stead of a way of wording that retains fidelity to the alien and so throws us back upon our faculties, our limits, and so also alerts us to our responsibilities towards others whose alterity we acknowledge, we find, in the transportation of the ordinary word "soil" onto that alien world, a failure to wrangle seriously with the consequences of setting conventional precedents with respect to what we say, all pitched, so it seems, in the name of convenience.

8) *Soiling Astrofuturist Dreams*

But is convenience all that is at stake? In saying there is just plain old soil on Mars, we also affirm we don't need education. We eliminate the fear and even the respect

49. J. Bell et al., "Mineralogic and compositional properties of Martian soil and dust: Results from Mars Pathfinder," *Journal of Geophysical Research, v. 105, 1721-1755* 105 (2000): 1722, https://doi.org/10.1029/1999JE001060.
50. William Sheehan and Jim Bell, *Discovering Mars: A History of Observation and Exploration of the Red Planet* (Tucson: University of Arizona Press, 2021), 322.
51. Cavell, *Conditions Handsome and Unhandsome: The Constitution of Emersonian Perfectionism* (Chicago, IL: The University of Chicago Press, 1990), 118.

for the alien that is so manifestly present in horror fiction writing such as the passage from Lovecraft that I have cited above. In such writing the initial impetus comes from the acknowledgement of the truth of skepticism, the recognition of the insufficiency of our criteria, what Lovecraft once described as "the inability of the human mind to correlate all its contents."[52] But science (or rather shallow scientism), often arises out of a refusal of skepticism and the cognitive and localizing limits that it brings to light, and one way in which it does this is by repressing all trace of the alterity of the alien by translating it and metaphysically naturalizing it into the everyday language of Earth. What this does in turn is breed space colonization fantasies. But these are dangerous fantasies predicated on a lack of respect for the difference of the Martian biosphere, a lack of care towards that wild planet, and a lack of attention to the tight webs of debt and dependency entangling our human forms of life and imagination with the fertile soil of our home planet.

Consider with critical intent how Martian soil functions in the thinking of Robert Zubrin, the president and founder of the Mars Society. Zubrin's *Case for Mars* is a vitalist pitch for settling space. He sees the need for a Martian settlement in terms of Frederick Jackson Turner's frontier thesis.[53] More specifically, he follows Turner in believing that the growth of America "resulted primarily from the great frontier," and he asserts that the closure of their frontier has generated an existential crisis for American identity, a crisis that can only be averted if the frontier is opened again, starting with Mars.[54] For "without a frontier from which to breathe new life, the spirit that gave rise to the progressive humanistic culture that America has represented for the past two centuries is fading."[55] But re-rooting the frontier spirit on Mars requires vigorous soil, or at least something that has the paradoxical properties of making life spring from death that Whitman associates with the American ground. Yet if we do know anything thing about Martian regolith it is that it appears biologically dead. Nevertheless, for Zubrin, who rigorously applies the paradoxical speculative logic of soil with its (to quote Eliot's *Wasteland*) quality of breeding "Lilacs out of the dead land" and growing life "Out of this stony rubbish," this apparent deadness must hide a double potency: "on the

52. Lovecraft, *Necronomicon*, 201.
53. Frederick Jackson Turner, *The Frontier in American History* (Norwalk, CT: Easton Press, 1989).
54. Robert Zubrin, *The Case for Mars: The Plan to Settle the Red Planet and Why We Must* (New York: Free Press, 2011), 324.
55. Ibid., 325.

basis of what we know now, Martian soil is likely to prove an excellent medium for crop growth, considerably better than most land on Earth, in fact."[56] Is this accurate? Must we acknowledge this is what we too would say? As an expression of terrestrial faith in the vitalist world building power of the word soil it is totally on pitch. But are these statements right about Mars or only about the planet in our language, only expressions giving witness to what we learned when we learned the world "soil"?

One response is to say that we don't know, and won't, until we go. Another is to say that we have reasons for doubt. No, more strongly: science may well claim that the logic of terrestrial soil is inverted with respect to the surface matter on Mars. Most Martian surface regolith is, as Simon Morden has pointed out, "contaminated with chlorine-rich compounds called perchlorates at a level that is lethal to humans."[57] If this is right, then Martian regolith would need to be artificially de-soiled before even having a hope of becoming soil, which would make it have exactly the opposite essence compared to terrestrial soil, which soils naturally, and brings life forth from soil. This alternate logic, call it (Martian "soil" = –("soil")) might actually better reflect what we know about the historical telos or, to employ astrophysicist Adam Frank's term, "the fate" of Mars.[58] It would explain its trajectory from the Noachian to the Hesperian to the Amazonian, from a planet that had surface water and possibly life to one that by and large seems to no longer host it or be capable of hosting it. That is not to be taken as a scientific claim about Mars, but one bearing only on language, it is an application of the aversive, dialectical reasoning rooted in skepticism as a guide to thinking about the ethics of what we might say.

Talk of Martian soil seems to consistently breed monsters. It promotes blind astrofuturist optimism, an epistemic stance might be better replaced by one of humility or even the cultivated estrangement that emerges when passing one's time reflecting on the screening of reality. Let us look now at Andy Weir's book (and the film) *The Martian*. Both have been celebrated, for example by the literary critic Michael Gormley, for a "well-researched approach to Mars missions" and the "realistic, hy-

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56. T. S. Eliot, *Collected Poems, 1909-1962* (Franklin Center, PA: Franklin Library, 1976), 53. Zubrin, *The Case for Mars*, 212.
57. Simon Morden, *The Red Planet: A Natural History of Mars* (London: Eliot and Thompson, 2021), 204. The same point is made in Sylvia Ekström and Javier G. Nombela, *Nous ne vivrons pas sur Mars, ni ailleus* (Lausanne: Editions Favre, 2020), 137.
58. Adam Frank, *Light of the Stars: Alien Worlds and the Fate of the Earth* (New York: W. W. Norton & Company, 2018).

pothetical status" of the narrative.[59] For Earthlings enthusiastic about the virtues of Martian soil, *The Martian* is thus a work of realism, a valid projection and screening of a possible state of being present on Mars. Yet this belief rests on the shaky logic of Martian soil. Consider the ex-alienating work done by soil in this key passage, an explanation of how Watney, Weir's hero, "colonizes" Mars by soiling its soil, thus making life bloom on that stony ground:

> Once I get some Martian soil in here, I can mix in the shit and spread it out. Then I can sprinkle the Earth soil on top. You might not think that would be an important step, but it is. There are dozens of species of bacteria living in Earth soil, and they're critical to plant growth. They'll spread out and breed like … well, like a bacterial infection. People have been using human waste as fertilizer for centuries. It's even got a pleasant name: "night soil." Normally, it's not an ideal way to grow crops, because it spreads disease: Human waste has pathogens in it that, you guessed it, infect humans. But it's not a problem for me. The only pathogens in this waste are the ones I already have. Within a week, the Martian soil will be ready for plants to germinate in. But I won't plant yet. I'll bring in more lifeless soil from outside and spread some of the live soil over it. It'll "infect" the new soil and I'll have double what I started with. After another week, I'll double it again. And so on. Of course, all the while, I'll be adding all new manure to the effort.[60]

Weir gets Whitman's (or America's) usage of "soil" right. Which presumably means that these words feel right to us, even if the Martian regolith as seen by science can't support the narrative's weight. Which implies that Weir's realism derives from our planet and is indebted to our own narrow experience. Rather than reading this passage as suggesting that that re-rooting our future on Mars is a realistic proposition, we ought to read it as precisely demonstrating the deep terrestriality of our language and so also the Earth's profound claims upon what we are inclined to imagine as reasonable or realistic.

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59. Michael Gormley, *The End of the Anthropocene: Ecocriticism, the Universal Ecosystem, and the Astropocene* (Lanham, MD: Lexington Books, 2021), 71.
60. Andy Weir, *The Martian* (New York: Broadway Books, 2016), 14.

In *The Claim of Reason*, Cavell remarked that "psychophobia" can mean "both 'fear of one's inner life' and 'fear of ghosts,'" explaining that "it can motivate intellectuality as well as anti-intellectuality." He goes on to clarify that "philosophy can be the fruit, or work in the root, of either."[61] Shifting the language here a bit, we can say that philosophy can be motivated not only by ghosts but also aliens, and that philosophy explores the fear of encountering the planetarity of the self when confronting the alien. Accepting that there is soil on Mars conceals the alien, and in so doing denies skepticism and philosophy. The inclination towards skepticism is not to be understood as claiming Mars is unapproachable by the intellect, but rather as acknowledging that "the limitation of certainty" can also be seen as a kind of "knowledge."[62] Self-limitation matters here, because Mars on screen seems so available, so banal and present, that we may need to make poetical or philosophical efforts to remind ourselves that it is alien. Clark Ashton Smith, in a stellar example of weird place writing, described a pastoral scene in which a bizarre and literally metaphysical doubling of the ordinary objects in their presence becomes manifest, summoning up before his narrator's eyes a landscape that is a "wraith-like projection of itself, the actual landscape leered with the same infernal and vampirish air which it had worn by day. But it seemed now that the place was no longer still—that it seethed with a malignant secret life."[63] Such writing opens the alien in the familiar, just as becoming aware of the screen, and our words as screen, helps us to see Mars with a haunting kind of doubleness. But then again what is needed for wording Mars is *not* what is being done here. Ashton Smith's alienation bears on what is indeed familiar, while we are not trying to render Mars alien as to keep it at its proper distance, given that the seeming reality of Mars is, for all intents and purposes, far less apparently horrifying than could have been imagined. Thus, wordings of that world need not embrace the language of dark fantasy, but they should in strategic cases heighten our sense of alienation. How to bring this about, and what this might provoke, are in Cavell's words "philosophical investigations of the fact that we are earthlings."[64]

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61. Cavell, *The Claim of Reason*, 21.
62. Ibid., 86.
63. Clark Ashton Smith, *The Dark Eidolon and other fantasies*, ed. S. T. Joshi (New York: Penguin Books, 2014), 165.
64. Cavell, *The Claim of Reason*, 32.

9) *Les Fleurs de Mars*

"A statue, a stone, is something whose existence is fundamentally open to the ocular proof. A human being is not. The two bodies lying together form an emblem of this fact, the truth of skepticism."[65] One could say that everything in the preceding runs contrary to the first part of Cavell's claim, at least to the extent that seeing screened stones on Mars may not necessarily justify the rightness of our inclinations to say what we would ordinarily say they are. Thus, and for this reason, Martian stones can become emblems of the truth of skepticism, of the fragile but also rich relationship between human reasoning in ordinary language and our limited but not lacking capacity to make and acknowledge judgments about alien worlds.

Let us embellish our stony emblem. The unnamed thing we glimpsed at the beginning of this essay is called a "Martian flower" by scientists. That figure is felicitous, a fine antidote to Martian "soil." As the planetary scientist William Hartman once wrote, the first images of Mars nearly convinced researchers that a world that once was believed to be "teeming with life from pole to pole" was possibly a "geologically dead planet," while subsequent images revealed that this was not a place in which "nothing ever happens" but rather one teeming with lithic history.[66] Against this background of the happening of history without evidence of biological life the very idea that Mars brings forth flowers of stone has a kind of poetic justice. Consider that the flower has long been a figure for rhetorical flourishes in our terrestrial tongues, for example in L'Infortune's *Le Jardin de Plaisance et fleur de rhétorique* (Paris, 1500), or in this line from Voiture, an explanation of precisely how to use verbal flowers in the art of seduction: "*j'employerais pour l'une d'elles, toutes les fleurs et toutes les graces de la rhétorique; et luy escrirais dés cette heure une lettre d'amour, si galante, qu'elle serait disposée, de m'escouter à mon retour*."[67] The fact that the Martian flower is at once a figure and *le mot juste* brings emblematic satisfaction: it paradigmatically reflects a proper way of speaking of the alien, figuring our desire relative to the alien as fostering potentially self-deceptive language, and even offering

65. Ibid., 496.
66. William K. Hartmann, *A Traveler's Guide to Mars* (New York: Workman 2003), 1 and 23.
67. Vincent Voiture, *Lettres* (1648), quoted in Danielle Bouverot, "La rhétorique à travers les siècles chez les écrivains de FRANTEXT," *Verbum* XVI (1993): 9.

indices with respect to how we might want to orient our judgment towards Martian objects as Earthlings: with a gaze that is aesthetic, disinterested, curious. With respect to this point, let us note that Kant, writing of terrestrial flowers in his *Critique of the Power of Judgment*, claimed that to the cultivated judge they are "are free natural beauties" appreciated for themselves and not for what they might contribute to knowledge or utility:

> Hardly anyone other than the botanist knows what sort of thing a flower is supposed to be; and even the botanist, who recognizes in it the reproductive organ of the plant, pays no attention to this natural end if he judges the flower by means of taste. Thus, this judgment is not grounded on any kind of perfection, any internal purposiveness to which the composition of the manifold is related.[68]

The term Martian flower, then, seen as a verbal projection of what we as terrestrials ordinarily call flowers onto the alien surface, can be said to orient us away from a teleological relationship to the objects on the planet in which all is valued for its availability to settlement or economic exploitation towards an attunement that is contemplative and appreciative, saying more and less than it appears to say. Martian flowers are a wonder and a beauty, and not just because we are able to see them on Mars viewed, but also for what they reveal to us about ourselves as Earthlings and the planetarity of our language, starting with the debt, the soil, we owe to the planet for how and what we imagine to be the meaning of life.

10) *Astroculture for Growingups*

There is a much-quoted phrase from the Russian rocket scientist Konstantin Tsiolkovsky: "Earth is the cradle of humanity, but one cannot live in a cradle forever."[69] To

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68. Immanuel Kant, *Critique of the Power of Judgment*, trans. Paul Guyer (Cambridge and New York: Cambridge University Press, 2000), 114.
69. Quoted in Dave Williams and Elizabeth Howell, *Why am I Taller?: What Happens to an Astronaut's Body in Space* (Toronto: ECW, 2002).

space colonization enthusiasts the above may seem to run contrary to this prediction. But that is to misread me. I am making no predictions about any possible future on Mars, nor am I claiming that Mars is ghoul haunted and ought ever to be described as such. My claim is that part of growing up into an age in which we can understand ourselves in terms of what lies beyond the planet is discovering how to deal with the new worlds on our screens, and part of this involves also thinking about the degree to which we ourselves, and our languages and the lines of argument that they elicit, are not universal but planetary.

This essay is only fragment from what would be a critique of planetary reason. But I doubt that one could do more than make local headway on a broader critique at present. The "of" here joining "critique" and "planetary" needs to be understood as articulating what Hans Blumenberg called the "subtle paradox" of the subjective and the objective genitive, the fact that at present, any critique that we might make of the planetarity of our reason as it is expressed in ordinary language is carried out within and by that same and ambiguously limited planetary reason and language.[70] For Earthlings on Earth there is no escaping the occasional planetary provincialism of our ordinary language, there is at best a carefully reflected acknowledgement of this fact and a careful practice of probing the limits of our projective capacities. Planetizing our reason, becoming aware of the degree to which our own senses of what makes sense keep us from appreciating alien worlds and even our own planet, amounts to finding ways of cultivating our distance from alien worlds even as we come closer and closer to being present on at least some of them.

Writing when he did, not in the age of Space 2.0 but in the post-Apollo moment, Cavell lacked a sense of the urgency of self-alienation. "The fact that we are in a given place on Earth is as utterly contingent as the fact that we are on Earth. The fact that we are in one place at any given time is as necessary as the fact that, once on Earth, we are until the end earthling."[71] But the question arises as to whether in an age when Mars is screened, we can feel content to think we understand the meaning of being an Earthling without a deep engagement with what is not of the Earth. More to the point, it is increasingly clear that achieving an understanding of what it means

70. Hans Blumenberg, *Phänomenologische Schriften 1981-1988*, ed. Nicola Zambon (Berlin: Suhrkamp, 2018), 15.
71. Cavell, *The World Viewed*, 180.

to be on the Earth, and to be an Earthling, matters politically and ethically. Insofar as we live in the Anthropocene, in what Dipesh Chakrabarty has described as our planetary age, our understanding of our own planet and its plight is deeply entangled with our understanding of other planets and other planetary systems, with grasping the differences and similarities between the planetary telos that fostered our soil that which yielded Martian regolith. In light of the weight of this planetary comparative on our understanding of ourselves as historical subjects, we now see the future of life on this planet as menaced, and so some are dreaming, and acting on the dream, of becoming multi-planetary. By 2030 astronauts will have returned to the moon, this time with plans to build a permanent base. Space entrepreneurs such as Elon Musk claim we will be landing on Mars by 2050. Expressing their appreciation for the value of these projects, William MacAskill and other Long-Termist philosophers argue we are morally obligated to invest in colonizing Mars and the solar system.[72] This is serious talk, it bears on how we inhabit the Earth and how we act relative to other earthlings. But as talk, as moral philosophy expressed in ordinary language, it ought to be evaluated via a critical account of the planetarity of that same ordinary language.

Whether we will be earthlings to the end remains an enigma, but we can now, by exploring the projections of ordinary language into alien contexts, identify bewitchments cast on our thinking by the terrestrial bias of language as it encounters alien worlds. Carrying out this critique, discovering the ways in which our expansion beyond the limits of the Earth can throw us back on our criteria and so demand that we grow and cultivate ourselves and our language in its planetary and extra-planetary dimensions, coming to know where it is universal, where it as terrestrial, and also where it requires reformulation into a sometimes alienating tongue, can help to orient us towards not only possible futures but towards a keener awareness of our limits and dependencies, our debts and oversights, our reality as simultaneously self-reliant and other-enwhirled. This extraordinary ordinary task seems to fit perfectly within philosophy, or as Cavell called it: "the education of grownups."[73] Or perhaps better, the education of growing ups, for if we have, at least with respect to the horizon across which we can felicitously or infelicitously project our ordinary words, left our

72. William MacAskill, *What We Owe the Future* (New York: Hachette, 2022).
73. Cavell, *The Claim of Reason*, 125.

cradle behind, we have not achieved maturity, but only found ourselves within a new circle, a new and enigmatic occasion for posing a question asked by Emerson and taken up by Nietzsche and Cavell: "Where do we find ourselves?"[74]

74. Emerson, *Essays & Lectures*, 342.