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The Outer Space Inside Us: Ordinary Language and the Care for the Extraterrestrial Commons

COMMONS IN SPACE
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ABSTRACT

This essay introduces two concepts for thinking about what earthlings have in common with outer space: terrestrial bias and the nightscape. The aim of these concepts, and this paper, is to explore ways in which shifts in our ordinary language can be used to bring home the importance of protecting the outer space commons, with a particular focus on the orbital commons. This focus on orbital space stems from the fact that it is orbital space that now needs to be protected and managed in light of the booming expansion of the private space industry, and from the fact that our ordinary ways of speaking about space as a common sometimes make us feel as if space is still disconnected from our everyday lives, but only something that will come to matter in some extraterrestrial future. Struggling at once to separate the orbital commons from discourses on space futurism, and to bring the orbital commons down to Earth, this paper aims to suggest new ways of talking about the orbital commons that can help us to see how and why it is already part of our common lives and daily existences, something that we wish to protect not for the future but because it is entangled with forms of life that we already care about, and passionately.

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To set foot on it
Even once
Is to corrupt it utterly...

It's a place like Siberia or Yellowstone
no longer form its real estate it's
a site for
whatever comes next
a raw material

—Jack Anderson, *Aesthetics of the Moon* (Dias, 1970, pp. 9,10)

1. HISTORY AND THE COMMON

What do we have in common with outer space?

This should be heard as a historical, political, and cultural question about the state of the global Space Age, not as metaphysical or cosmological question regarding whether life comes from stardust. It is a question being asked in an astrographically localized way: as bearing on those extraterrestrial zones which, thanks to the extension of our technosphere, we have meaningful and ongoing contact and impact (Tabas, 2023). It is being asked in this way because it is relations between us and what lies beyond the planet that are most pertinent to thinking about ongoing debates regarding the status of the extraterrestrial as a common. It is so asked because the project of becoming more accomplished extraterrestrial commoners in our New Space Age requires a new fluency with respect to the language of this emergent relation. For being good commoners matters as never before. Orbital space is being appropriated by space billionaires; is being junked by rushed attempts to stake claims on orbital territory; is becoming a site from which new forms of post-global information gathering and diffusion are becoming complicit in further exaggerating already problematic forms of economic inequity. But that is only the beginning: extractive projects are already aimed at the moon.

It seems safe to say that there was once a consensus: orbital space was a global common. That was the way space was talked about throughout the later twentieth century, with the notion of the global common inflecting the way in which things like bandwidth distribution were negotiated among international actors. Now the case is less clear. According to a 2020 executive order issued by the Trump White House: “Outer Space is a legally and physically unique domain of human activity, and the United States does not view it as a global commons” (2020). This statement was no aberration issued in by

political corruption: it is a symptom of changing American, and so also global, attitudes regarding the legal status of near space. Some legal theorists, particularly those located in Europe, continue to claim that outer space is still a *res communis* (Gangale, 2009; Svec, 2022). Yet others, registering the changing American stance (including that of the Obama-Biden administrations) and interpreting the law through a realist geopolitical lens, argue it is not (Hertzfeld et al., 2019; Patton, 2022; Tepper, 2019). Considering orbital space from an economic rather than a legal perspective, many consider space to be a common pool resource (Buck, 1988; Klinger, 2021; Rao et al., 2020). But some others allege that such a claim is misleading. Hertzfeld et al. (2019) note that common pool resources need to be delimited and collectively monitored, and that these criteria are either partially, or not at all, met off planet. Yet despite all these and other disagreements, pretty much everyone—even those driving the rapid acceleration of orbital development—thinks that the current trajectory of the orbital space economy, unsustainable, rapidly approaching what Commoner called a “tragedy of the commons” (2020), wherein the unregulated appropriation of common goods ends in a catastrophic loss of the resource base for all.

This text does not offer explicit arguments as to whether space ought to be legally, economically, or politically regarded as a common, nor does it propose alternative strategies for future space governance based on the idea of avoiding the Kessler effect. It is primarily concerned with culture, history, and values—with what Alexander Geppert (2018) has called *astroculture*, and even more narrowly with how we talk about space. Its objective is to slightly shift our perspective and discourse in ways that may influence these other discussions of the orbital commons. I introduce and develop two analytical concepts—terrestrial bias and the *nightscape*—to help effectuate this discursive shift. Yet these concepts only make sense as part of a larger re-articulation of the discourses around the extraterrestrial commons. One animating insight of this paper is that much of the lack of clarity around the commons status of outer space comes from difficulties associated with saying what we have in common with space, and that these stem from the pervasiveness of speculation and futurology within our discourses around outer space. If many of us speak a great deal about what we might come to have in common with space, and others tend to go on about what we ought not to have in common with space, fewer of us have sufficiently reflected on what we now, seventy years into the Space Age, have come to have in common with it. Yet it is this set of common relations that will enable us to best understand why it the extraterrestrial commons matters, not some

speculative and often incredibly utopian idea bearing on what space might be. As Silvia Federici put it, “you live the commons” (2019, p. loc. 1638). Common forms of life are not constituted by top-down decisions but rather emerge from ground-up practices and historical forms of life (Federici & Linebaugh, 2019; Mbembe, 2023; Scott, 2020). While these practices may include anticipatory dimensions and even be underwritten by theological beliefs, they are above all normative ways of being in and sharing an already existing common social world nourished by a shared set of resources. In this sense it is history, pragmatic adaptation to the challenges of living in common, that emerges into the practices and norms of commoning that make up and give character to a common. The same hermeneutic situation is available to us with respect to orbital space, and that is true even if we live on the ground, though that this is so may not seem obvious: the satellites are not there right in front of our faces. Nevertheless, it takes only a little bit of history to see that our lives here on Earth are deeply informed by extraterrestrial infrastructure in ways that themselves owe a debt to the fact that we did regard outer space as a common. Thanks to the idea that space belonged to all humankind as promoted by the OST (Outer Space Treaty), many space resources are open access (Borowitz, 2017). This data has come to structure and alter the ways in which we dwell on our home planet, informing us about the weather, the location of our vehicles, and the changes going on with the Earth System. As the human community has become informed by satellite data, the effective bounds to our habitat have stretched out into the solar system. There is, in short, no reason why we cannot understand our historical forms of life, everyday life as we live it on Earth in the Anthropocene, as a manifestation and product of a process of satellitization that itself was informed by seventy years of living with outer space that was largely regarded as a global common. Yet we do not tend to do this; indeed, we tend to feel that we will only have something in common with space, that we will only truly live with space as a commons, when we live off planet, in a space colony or on a terraformed Mars, propositions that many, it must be said in passing, regard with horror, as if any attempt to expand beyond the surface of the Earth could only end in catastrophe. These are reactions deeply informed by how western culture imagines and values its relationship to outer space, reactions that the two concepts introduced and developed in this paper—terrestrial bias and the nightscape—aim to help us critically interrogate. For the extraterrestrial commons is at once farther and closer to us than we are habitually inclined to imagine. To play with the title of Robert Vas Dias’1970 anthology of poetry interrogating the new human relationship to the extraterrestrial at the dawn of the post-planetary age,

since Sputnik, we have been “inside outer space” and outer space has been inside of us.

2. TERRESTRIAL BIAS

We show terrestrial bias when we get ahead of ourselves by exporting categories of terrestrial life out into space, but this paradoxically encourages us to only imagine the extraterrestrial as historical in the ordinary sense when being in space seems to be transparently identical with living on Earth. Acknowledging terrestrial bias reminds us that this belief in perfect translation between Earth and Space is not, and cannot be, a reasonable expectation, and sets us off in the direction of thinking in more modest ways about the meaning of commoning beyond the planet. Discerning terrestrial bias can pass through a close interrogation of our everyday, by paying attention to the small details of our everyday lives, via anthropologically informed comparisons between ways of being in orbital and terrestrial worlds, with a particular focus on the distance and proximity between commonplaces. To discern bias is not to argue against the possibility of there ever being a future in space, but rather to learn to practice epistemic humility when thinking speculatively about the future of the space commons.

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.
 —Emerson (1983)

Outer space is often figured as the remote, the distant, the futural. But in the Space Age this is not exactly right: if orbital space is not where we live most of our everyday lives, everyday life also implies connections to orbital space, and there are also places in space, namely aboard the ISS, where something like ordinary life goes on. Thanks to documents of various kinds, we can study that extraordinary ordinary, looking at the ordinary language practices in space environments and thinking about the ways in which they might differ from our own ways of performatively communicating with one another. The focus in the following is on the language associated with cooking, an activity that is as common as it is banal. Virtually everyone cooks, has cooked, or has seen cooking. We are not talking about *haute cuisine*: just dinner. In consequence, virtually everyone also knows how to talk about cooking. But not in the same way that astronaut Sara Magnus does when she writes about it in her astronaut

journals. When reading the following analyses, I suggest that readers ought to regard the ISS as an existing but extremely localized orbital common. They may reflect on the foundational importance of rituals such as breaking bread within the normative constitution of terrestrial communities. But above all they ought to consider how little, due to terrestrial biases implicit in our most ordinary language games and due to our current forms of life, most of us have in common with that common, regardless of what our science fiction-informed astrocultural heritage might incline us to believe.

Here is a sample of ordinary cooking language drawn from Magnus' journal:

You gather your tools and ingredients and set them out on the counter or table or whatever your work surface is. You mix things in the bowl, you pour liquids from one place to the other, you throw the dirty dishes in the sink and the food remnants in the trash. (2010)

We can look at this as illustrating what Wittgenstein called a “language game:” a way of using words consisting of “language and the activities into which it is woven” (2003, p. 57). On Earth, most of us can describe cooking, receive instructions about cooking, give cooking directions, and discuss what to cook. Maybe we don't master complicated cooking, but mostly we believe we could learn with the help of a book, a video, or a friend. We likely feel cooking instructions are translatable between languages. Cooking and its logics lie within what Robert Brandom has called our “space of reasons” (1998), the network of inferences that we collectively hold as constituting pragmatically valid descriptions of the world. Now consider this section, in which she attempts to describe cooking in orbit:

The corn likes to stick to everything, including the spoon, and the eggs are firm believers in entropy (they scatter everywhere!). I had to play with how to make the cut in the plastic package these foods came in before I was finally able to do this in a not-too-messy of a fashion. I got around the first issue, the food sticking to the spoon, by placing the spoon deep into the mixing “bowl” and using my hand from the outside to press each side of the plastic bag against the spoon, thus scraping off anything there. Then it is necessary to very slowly remove the spoon. To get the eggs to behave I mixed some of the sauce I was using, in the case of the crab salad, mayo, with the eggs while the eggs were still in their original package. This gave the eggs some

cohesiveness and they could be transferred as a lump into the mixing “bowl.”

This isn't quite the same game as the one in the previous passage. Sure, we can be tricked into thinking it is if we read uncarefully, just as we might be seduced into believing that the various space cookbooks deliver us the secrets of cooking in space. Yet when we look closer we see that what they really tell us is not how to cook in space, but how to make “food similar to what the astronauts would eat” (Bourland & Vogt, 2009), foods that have the same chemical composition as the foods eaten by astronauts. More broadly speaking, our grasp of cooking in space as a language game runs along the same lines—we are doing something similar to what astronauts call cooking, but it isn't quite the same. Notice the figures Magnus uses, the stress she places on things having minds of their own (“the eggs are firm believers”), as well as the emphasis she lays on certain of her words being improper, merely functional, approximations (“bowl”). Wittgenstein might have said that this game has a different grammar. We who know cooking on Earth don't fully know how to play this game, and that is precisely what these personifications indicate. We don't know how to make the moves, to give a practical account of what the eggs believe in and how that bears on how to handle them. We don't know how, or even really what, to tell others to cook in space, at least if cooking implies something more than simply adding water to a packet of freeze-dried food. Yet we find it hard to imagine that we do not know how to cook in space, that we cannot just read off instructions from a book as we would in other terrestrial contexts, even if we can, with a bit of reflection, be brought to see that simply following the *Out of this World Cookbook* (2023) in orbital space as we would in our home kitchen would mess the ISS.

It is arrogance to imagine that we can understand what could be common in an alien common without first learning how to become a commoner. One of the keys to successful commoning is, as Dewey (1997) said of democracy, education. Learning takes practice. Mirroring the grammatical weirdness of Magnus' text—its figurative employment of animated ingredients—won't help us to bake in space, or to give helpful instructions to someone else who is doing so. At most, we can imitate her to trick other ignorant earthlings into believing that is we what we are doing (I would suggest that talking like an SF author, rather than like an actual astronaut, may be more convincing if more fraudulent). That said, everyone who has spent time on the ISS probably learns to play this game, even if they don't specifically practice cooking. Stanley Cavell has argued that our ability to do things with words,

including giving cooking instructions, depends upon our sharing “routes of interest and feeling, modes of response, senses of humor and of significance and of fulfillment, of what is outrageous, of what is similar to what else, what a rebuke, what forgiveness, of when an utterance is an assertion, when an appeal, when an explanation—all the whirl of organism” (1976, p. 52). Less eloquently, we can do things with words because over the course of our common existence we have learned to share and acknowledge a common sense of our limits and vulnerabilities, a common attunement to how gravity weighs upon words in senses both interior and exterior. It is this domain of care as expressed in ordinary language games that constitutes the basis of what Sandra Laugier and Veena Das have called “ordinary ethics”, and which I would submit forms one of the ground-level competences for commoning (Das, 2020; Laugier, 2015). Our common language, understood as our common sense of what to say when, reflects this.

Ordinary language games do not directly derive from a pre-existing ontological order of ordinary things, from what Wilfred Sellars called the “given” (1997). We might imagine the given as what Ruth Millikan has described as the “clumps and clumps within clumps” (2017, p. 32) that confront us within sensual experience, just stuff that does not in itself present us with sufficient differences to stake inferential claims and so to give explanations such as cooking instructions. Thus, it is not these clumps that are referred to by words, rather what she calls “unicepts”, forms of mind that are generated through lived practice. Unicepts are not articulated concepts but a pre-explicit and pragmatic manifold which serves as a background for our common linguistic practices, a support whose features emerge through interactions with the world and via discursive interactions with one another. Things themselves—the clumps—have no obligation to obey our ideas: “should the world change to produce new things that fall between clumps, or should a philosopher invent a new possible world in which things appear between clumps, precedent may no longer be able to determine correct usage” (Millikan, 2017, p. 32). Yet if the world can thus disobey, and does disobey when we change worlds, moving from Earth to orbital space, we, as speakers of a common language, remain to a greater degree constrained by normative grammars, by a need to conform to the past. Which means that when the clumps change, when we find ourselves in alternate phase space of physical possibilities such as we encounter in orbital space, we need to find new ways of using words that both conform to normal practice, and break with it. We need to learn a new language, and to help others to learn a new language.

It is in such metamorphic boundary zones in the emergence of new linguistic practices that we most

clearly encounter terrestrial bias. In practice, bias becomes manifest in cases in which our ways of correctly wording the world in one place misfire in another, leading us to the insight that while we were speaking correctly, we failed, due to bias, to fully appreciate the context sensitivity of communication (Miguens, 2020). This could be a learning experience, but when we are surrounded by others who are persisting in the same error, it sometimes is not.

We should regard ISS English (or Russian) as orbital languages, languages that emerge when speakers develop unicepts informed by the practice of orbital commoning. Orbital languages are alien to terrestrial languages not in the way that Russian is foreign to English, or that both are foreign to the any number of languages that Mary Robinette Kowal (2023) has rightly claimed ought to be spoken in space. They are foreign to the extent that they are not mastered without adult education by wholly competent speakers of terrestrial languages. There is no straight conceptual bridge leading from terrestrial language practices to ISS language games. Knowing why is not equivalent to knowing how to, and slippage on this point can often be employed as a justification for persisting with terrestrially biased practices. When confronted by alien conditions, we need to figure out what to do; a name for what we are doing to occupy, or rather more precisely, to re-occupy (“*umbesetzen*” in the language of Hans Blumenberg (1966)) the functional place of doing what we would ordinarily be saying. We may feel that we can do this using our knowledge, as on Earth we can often anticipate what we would say based on what we have said in the past. But it is valuable to also try to signal the difference, even if it undermines our feeling of authority and legitimacy when confronting the alien. For example, when astronauts arrived on the moon, they discovered that doing what we call walking was impossible. They, and we, know that this was because there is low G on the moon than on Earth. But knowing that did not teach them how to best get around. They tried what Eugene Cernan called the “kangaroo bounce” and the “ski” (1999, p. 436). But if we imagine that the stretch of possible ranges from Michael Jackson’s moonwalk to imitating walking on a trampoline (Buzz Aldrin described walking on the moon “not too far from a trampoline, but without the springiness and instability”), then we see that experience and past practice hardly narrow things down at all. How do we know, with our feet on the Earth, which moonwalking is not getting it right? What common terrestrial criteria can we cite that clearly count as articulating what getting it right on the moon would be, other than rank quantitative abstractions such as speed? As importantly, and given that we are talking about language and not about walking, about something intrinsically common, rather than our relationship to our individual relations to our embodiment,

how can we get right our words without conversing with others? Can we know apriori all the ways in which we might be misinterpreted? I would say that we can't, but we often feel that we can, and this is dangerous. One of the things that common experience does is narrow down the phase space of possible divergences. The British astronaut Tim Peake recounts how early on in his time aboard the ISS he caused a minor diplomatic incident, when, overconfidently believing he had “mastered the fine art of moving around in weightlessness” he “flew through the hatch from the lab to Node 1” with a ball full of M&M's in his hand, “clipping the top of the hatch,” and sending 150 of the candies, “now free of confinement” into the Russian segment (2020, p. 436). That is helpful, but only someone who had had a sense of the problem would really get what he is getting at, since only someone who had some sense of how overconfidence causes common problems within this uncommon environment and would have a sense of when and how to helpfully issue warnings before poor space walking manifests itself as an international confrontation.

ISS language games amount to an alternative grammatical paradigm, alternative, that is, to the paradigms even hypothetically shared by all terrestrial languages. The term paradigm comes from Thomas Kuhn. He used it to describe changes in the language of the sciences. In science, a paradigm shift occurs when scientists begin relating words to natural kinds differently, taking this new way of using words in a way equivalent to an “accepted judicial decision in the common law” (2012, p. 23). In practice, that means we talk differently, that with the Copernican revolution, the commonsense meaning of planet becomes heliocentric rather than geocentric. Paradigm shifts generate incommensurabilities: breakdowns in communication resulting from “different cognitive commitments” producing inferential truth claims that are “suitable for different worlds” (Kuhn, 1977, p. 243). Such incommensurability is present between ISS English and terrestrial English, but the gap between paradigms is not conceptual, but historical and praxeological. It is not theoretical commitments that make the differences but differences in education against a background in which things clump in alien ways. On Earth and in orbit the same words in the same order won't have the same perlocutionary effects.

Before moving on to the nightscape let us take stock. Nothing that I have said offers a transcendental justification for what Tony Milligan (2022) has called ground bias: the skeptical claim that we cannot say anything meaningful about the extraterrestrial. Quite to the contrary. Numerous language games are little affected by going extraplanetary. My analyses pose no problem for planetary scientists, regardless of their reliance on analogies and abductive

reasoning (Baker, 2014). I also believe that a sense of how to give directions to people operating in space could perfectly well be cultivated via long virtual encounters with people in orbit. They likewise have no bearing on whether formal commons models of the sort developed by Ostrom (2015) can be applied to the sustainable use of orbital resources (Weeden & Chow, 2012). Nor does everything that might be said in space differ from what might be said on Earth. In fact, what Asimov once called “planetary chauvinism” (Combs, 2004) doubtless derives from the fact that the horizons of relationality common to planetary bodies are in certain strong senses analogous: our terrestrial language finds more traction on planets than it does in orbital or deep space. In this vein, it is striking to note that the interviewees in Harrison and Bednar's (2020) *For All Humankind*, a series of testimonials regarding the experience of the moon landing conducted with people from around the globe, continually find memorable the phrase “the Eagle has landed”. Why did these words cut into memory across languages, classes, and cultures? I would argue that it is because landing is a terrestrial experience that we share, and which can be shared across terrestrial bodies: we have all landed, whether we are talking about leaping down steps or landing in an airline. What strikes me as vital about the notion of terrestrial bias is that it precisely isn't a transcendental notion but is rather an analytic concept appropriate for local use, which is precisely what we need to counter the belief that what we need to know to be good commoners is just the same everywhere, on earth, in space, or on an earth that is inside an extraterrestrial technosphere as opposed to an earth that is just in space.

3. THE NIGHTSCAPE

The nightscape refers to the aesthetic manifold experienced when we regard the starry skies above, or rather (to update and historicize this experience) the satellite-speckled-and-distorted bowl of the nocturnal heavens. For most of human history the nightscape was all that we had in common with outer space. Compared to the nightscape, the surface of the Moon or Mars is truly out there, requiring technology such as telescopes, rockets, and rovers, while we experience the nightscape merely by looking up on a clear dark night. If we are to ask ourselves what is most visibly and immediately being modified for most earthlings by the current wave of space expansionism, it is the nightscape. For even now we can see lines of Space X and other satellites brilliant in the sky, even now we can see the ISS passing overhead. In attending to the nightscape and its surrounding astroculture, we can discover how our inherited values and categories incline us to keep the orbital commons at a distance, while at the same

time embracing a concept that reminds us of the value that we have long vested in our communion with the nightscape as the face of the extraterrestrial, an aesthetic experience that we have held as a common value throughout time and presumably around the globe.

The nightscape is a counter-concept to terrestrial bias, not only because its critical clout bears on different thinkers, planet-centered anti-space expansionist ecologists as opposed to cosmic colonization-obsessed astrofuturists, but also because my aim is to show here not that we have less in common with space than we might typically imagine, but rather that we have more. Yet if this section is about the nightscape, it is also deeply concerned with the fear of the alien, and how this fear keeps us from appreciating our entanglement with the extraterrestrial. Furthermore, our concern is not merely the fascination exerted by the nightscape, but rather how theological preoccupations bleed into the specific grammar of how we figure the night. Thus, discussions of the nightscape are entangled in the modern project of disenchantment, secularization, and modernization. For we cannot long discuss the nightscape without accounting for the persistent hold of religious ideas even on contemporary astroculture (Rubenstein, 2022), ideas that need to be interrogated and reframed within the context of our Space Age, in such a spirit so as to avoid the pretense being capable of secularizing the unsecularizable infinitudes of the cosmos, but also remaining committed to rendering more worldly, more present within the secular and common sphere, the novel fact that the edge of the modern world is expanding in ways that alter various features of our common lived experience here on planet Earth.

Our inherited relationship to the nightscape in the anglophone world is packed with paradox: we experience it as intimate and near, while simultaneously holding it at a distance, and so framing it as an uncommon or alien element within our common lives. This is on full display in the following lines from Keat's sonnet *Bright Star*:

*Bright Star, would I were steadfast as thou art
– Not in lone splendor hung aloft the night
And watching, with eternal lids apart,
Like nature's patient, sleepless Eremite...*

The poet is addressing his words to Polaris (the bright star), he is speaking to her, and of course to her companions hung aloft the night as if they were intimates, confidants. Yet he is also opposing the star, and in particular its historicity, to the fragile existence of himself and his beloved. The star is eternal, patient, ahistorical, while he is traversed with the finitude and mortal passions that are characteristic of the terrestrial realm (as is of course implicitly true of his

beloved, to whom this poem is addressed in a well-worn call to *carpe diem*). The nightscape is thus configured as both intimate and distant; at once a confidant and a pure being utterly alien to the worldliness and cares of the historical world. Now all of this would be anodyne if the nightscape were in fact ahistorical, beyond history, beyond the common world. But massive commercial satellite constellations, tiny as they are compared to the totality of the cosmos, anodyne as they are with respect to the stars and planets themselves, are blocking our view of the stars from the Earth (Falchi et al., 2023). They are a particular bother for astronomers, but under certain conditions we can see them with naked eyes, and even when we can't, they alter the way that the light from deeper space reaches us, altering our naked-eye and telescope-assisted experience of the planets and the constellations. They, or detritus from their launches, are generating ever-increasing amounts of space junk. This orbital matter is turning our starry heaven tree fuzzy by reflecting and diffusing incoming light (to say nothing about incoming cosmic radiowaves).

Historical development within the visible nightscape is robbing us of our polestars. This defacement of the nightscape is a loss, not only a loss for the present pleasures of midsummer nights, but also for our understanding of the significance of the vast horde of cultural treasures, nocturnes, moonlight sonatas, starry nights and so on, inspired by the inspiring and edifying aesthetic experience of the heavens. For how can we resonate with the wonder inspired by the bright star in Keats if we ourselves have never had such an experience? But then again, how can we care for the nightscape as a fleeting historical thing if so many of the objects that we value precisely inform us that it lies beyond history?

One proposition is to develop historical perspective on why it was in the first place that we imagined space as so distant, so untouchable. Such an effort proves to be even more rewarding because our inherited relationship with the alien is informed not only by ideas about time and eternity, but also by specifically religious tropes regarding the pure and the impure, the sacred and the profane, the ordered and the disordered. Stated more generally, the west has a whole cosmos of inherited reasons why we ought not to admit the extraterrestrial into our commons, a whole suite of reasons suggesting that we ought to fear punishment or tumult if we do allow ourselves to bring the nightscape down within the historical sphere. One way of getting a sense of this rich tradition is via a brief consideration of some lines from the cosmic horror of H.P. Lovecraft:

It had acted quite unbelievably in that well-ordered laboratory; doing nothing at all and showing no occluded gases when heated on charcoal, being

wholly negative in the borax bead, and soon proving itself absolutely non-volatile at any producible temperature, including that of the oxy-hydrogen blowpipe. On an anvil it appeared highly malleable, and in the dark its luminosity was very marked. Stubbornly refusing to grow cool, it soon had the college in a state of real excitement; and when upon heating before the spectroscope it displayed shining bands unlike any known colours of the normal spectrum there was much breathless talk of new elements, bizarre optical properties, and other things which puzzled men of science are wont to say when faced by the unknown (Lovecraft, 2008, pp. 170–171).

These lines describe a meteorite, an alien object that has landed in what was previously a pure and pastoral New England village. Over the course of the tale, a weird color emanating from the meteorite will permeate the entire area, contaminating it and introducing both vital and psychological disorder within that previously charming place. This disorder finds itself expressed via a deformation of the normal grammar of object descriptions. Thus, the *stubborn refusal to grow cool*, which is tropically akin to Magnus' corn that *likes to stick to everything*, conveys a dark foreboding rather than the curiosity which might accompany a novel experience. Both illustrate how seemingly ordinary things placed in extraordinary contexts can produce verbal performances which confound our ordinary ways of speaking. Yet where Magnus' uses these figures to deform language to confront a novel common, Lovecraft's deformations of language imagine such a confrontation and then channel those resources in such a way as to ultimately reinforce our fear in the alien as a source of unnatural or extraterrestrial disorder, suggesting as it were, that we would be better to leave such things as asteroids, entities imprinted with the mark of the alien, at a distance, and even to drive out all that is alien for fear that it contaminate us.

Lovecraft's linguistic procedure would not work if the fear of encountering the alien was not latent, buried within many of our ways of speaking about the world. A full archaeological unearthing of this fear of the alien would take us well beyond the scope of this essay, so a few references will need to suffice. As Cheng (1997) has pointed out, the Romans considered the heavens not a *res communis* but rather a *res nullius*, which is not to say that they thought that it belonged to no one. They held the heavens to be already occupied: by the Gods. Seen in this light, the idea of making commons with the extraterrestrial is a sacred crime, a Promethean theft. With the coming of Christianity, the nightscape could seem to have been restituted to

humankind as a common good. As the early modern natural lawyer Jean Domat wrote: "the heavens, the stars, the light, the air, and the sea are goods so common to all of human society that no one could appropriate them, nor deprive them to others" (1713, p. 16). Yet if Domat is claiming that the stars are common to all, he is also predicating this on the idea that their availability is a product of natural law, of a divine dispensation in which some things can be appropriated, and others are naturally unavailable, and the stars are precisely and structurally given as being beyond any human capacity for appropriation. This ceding of the nightscape to the common does not thus bring the stars into history, undermining the possibility for work such as Lovecraft's, it naturalizes and theologizes the ground of their being ahistorical, by stipulating a certain order of things as naturally given, with violations of this order being punishable not based on the caprices of the Olympian gods, but with the cold certainty of a divine judgment. In this way, the very idea of enjoying the stars as anything other than distant objects of disinterested aesthetic contemplation becomes a form of sacrilege. What is outside ought to, by cosmological fiat, remain pure, untouchable. It should be seen as embodying a "purposeless purposiveness" (the term is Kant's), occupying a status inside and outside of our common concerns, rather like the moral law which Kant famously compared to the nightscape:

Two things fill the mind with ever new and increasing admiration and reverence, the more often and more steadily one reflects on them: the starry heavens above me and the moral law within me. I do not need to search for them and merely conjecture them as though they were veiled in obscurity or in the transcendent region beyond my horizon; I see them before me and connect them immediately with the consciousness of my existence (1996, p. 269).

As a rank generalization, then, the stars are what is most common but also what is least common, they are immediate and untouchable, sacred. To mingle with them, and that would also be to accept that they are historically part of our common, appears a punishable abomination.

Such ideas are hardly universal. First nations people have a very different sense of their proximity with the stars. The Ashinaabe poet Gordon Henry Jr. writes of the "grasp of stars," (Harjo et al., 2020, p. 75) configuring the stars not as a thing to be grasped, or as lying out of our grasp—but rather as beings doing the grasping, as beings pulling us up into communion. Similarly, Nomtipom Wintu poet Frank Lapena writes of "stars dancing across the universe and singing, singing, singing" (Harjo et al., 2020, p. 276), replacing

the coldness and distance of the stars with a vibrant and moving form of rhythmic spirit animating common life. An interesting confirmation of the relevance of these cultural differences for commoning with orbital space is the fact that first nations peoples have been among the most vocal in the defense of the nightscape (Carroll & Neilson, 2022). Yet it would probably be excessive to claim, as have some, that we must undergo a cosmological transformation to merely grapple with the problem of acknowledging our proximity, debt, and value of our menaced environments (Gosselin, 2022). All we must do is follow the path set for us by the thinkers of the Enlightenment, learning how to wean ourselves away from our self-incurred immaturity, by thinking more clearly about the kinds of relations that we now have, and the kinds of relations that we do not yet have, with the extraterrestrial.

As an aesthetic category, the kind of environmental awareness that emerges from the nightscape continues to imply a distance between subject and object that is alien to some other cultures and is rejected as dualistic by many ecological thinkers (Morizot, 2023). But what I am after here is no revolution or replacement with one set of categories, but a pragmatic historicization of our tropes, a recontextualized and thus novel attention to the way in which space history has given birth to new sets of relations, new ways of using language that make clear our entanglement with spheres beyond the terrestrial. With respect to the nightscape, doing this implies accepting a shift in how we evoke the stars, based on the acknowledgment that the nightscape is deeply intimate to us and our culture, and that we have nothing to fear from admitting the alien into this intimacy, no reason to believe, based on historical experience, that feeling ourselves entangled with the alien will bring down a punishment upon our heads, a plague or a pest. I would argue that history even runs in exactly the contrary direction. If we fail to acknowledge that the extraterrestrial is already there in our common imaginaries, if we obey the impulse to flee the efforts to make sense of what we do and do not have in common with it, we run the risk of allowing the space billionaires to expropriate what once belonged to us all, and likewise run the risk of having near space junked beyond recognition, all because we thought, wrongly, that the extraterrestrial was more alien, and farther in the future, than it was.

4. ASTROCULTURE IN EVOLUTION

I hope to have shown terrestrial bias and the nightscape are useful concepts for helping us to think more historically

and critically about our distance and proximity to the extraterrestrial. Much work remains to be done to reform astroculture to cope with the new social, political, and economic exigencies of the New Space Age. Other concepts are needed, other attempts to engineer more appropriate ways of appreciating the value of outer space for our common modes of existence. Paradoxically, astronomers, scientists who spend their entire lives staring at the skies and who are the most harmed by the recent mega-constellations in LEO, are among those who are the least capable of employing the notion of the nightscape, since they have always been interested not in the aesthetic experience of the stars as seen by a terrestrial observer, but precisely and persistently in the things themselves, the planets and places that really lie beyond our common cultural inheritance. This means that it is unfortunately all too easy for them to indulge their interest in the profoundly alien by moving their means of observation out beyond what for we terrestrials counts as the nightscape. The astonishing findings of the Webb, Hubble, and other space telescopes evidence this fact. I have here evoked, but done little to break down, our sense of distance and fear of the alien. Ruthanna Emrys' novel, *A Half-Built Garden* (2022), a tale about an encounter with alien invaders that are at once weird and slightly terrifying, but also, and importantly, not necessarily so much worse than we ourselves, might be a starting point for analysts looking at how Lovecraftian tropes, and so also the whole tradition of tropes underwriting cosmic horror, can be therapeutically deconstructed and reconstructed from the inside of the culture of letters. Yet in reminding us of the scope of what might be done to trace the contours of our emergent common sense of being within the cosmotechnical order of the New Space Age, I do not want to understate what has been accomplished here. Our judgment regarding the value of the new and proliferating satellite constellations and moon resource exploitation missions depends greatly on whether we attend to the nightscape and value it, for on this hangs part of our judgment about whether these satellites bring us together by expanding network connections to new locations around the globe, or in fact tear us apart by stealing something that we have enjoyed all along.


My aim here has never been the elaboration of a theory of what we have in common with outer space but only a modest effort at border work on obstacles standing in the way of a broadening of the acknowledgment that a hermeneutic account of our historical entanglement with the extraterrestrial is possible. Overall, I would suggest that grasping what we have in common with space must be an ongoing labor on and within astroculture, and that

this effort ought to not only limit itself to representations, but also to forms and discursive practices. To put it figuratively, we must learn to cognitively tread a thin line between overstating and understating our entanglements with the alien, between ceding to terrestrial bias and succumbing to the unjustified fears of the alien which keep the nightscape distant. We must learn to be at home in our everyday words and ways of inferentially addressing the world, not so much by conquering space, but by attending to the ways in which outer space is already inside us. But to do this, we might confront the uncanny fact that now, seventy years into the Space Age, our planet is surrounded by a thin beach head of technosphere that it is our task to imagine, to learn to live with, to protect and cherish in common.

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The author has no competing interests to declare.

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