

“We choose to go to the moon. We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one which we intend to win, and the others, too.” (President John F. Kennedy, September 12, 1962)

The Moon in Apollo's Shadow

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An important touchstone in the reportage that accompanied the fiftieth anniversary of the Apollo Moon Landing this year was President John F. Kennedy's 1962 speech at Rice University where he made the case for accelerating the Space program. Editorials, commentaries and essays featured the tag line: “we choose to go to the moon...and do other things, not because they are easy, but because they are hard” as a compact epithet for the spirit that animated the age. In the fifty years since, this logic has been turned on its head. Rather than the civilizational measuring rod posited by Kennedy, space flight has seemingly become accessible and almost routine.

Certainly, there has been no shortage of industrial prospectors forecasting the imminent arrival of asteroid mining initiatives for rare metals and elements. Similarly, there has also been a proliferation of space tourism companies working hard to generate a sustainable market and deep client base for zero gravity, suborbital flights. We are also weekly confronted with some new insight about a distant solar system or a breathtaking panorama from an alien landscape. Finally, over the past nineteen years, the International Space Station has become an almost cosmopolitan near-orbit hub of scientific activity and research collaborations, hosting over 233 visitors conducting 93-crewed missions (Kakaes 2019a, 8). This year's anniversary was not just a reminder of how long ago a human being last stepped on the moon but it also underscored the acceleration of space activity since.

Yet if orbital space has become congested, the Moon remains a more elusive target. Three separate landing attempts by robotic spacecraft took place this year and only one was successful. China's Chang'e-4 spacecraft successfully landed a rover on the far side of the Moon (Davenport 2019) but later in the year Beresheet, a private spacecraft owned by the Israeli firm SpaceIL, crashed onto the moon's surface on its landing attempt (Eglash 2019). Finally, in early September, the Indian

unmanned spacecraft Chandrayaan-2 began the country's first landing attempt after successfully orbiting the Moon for a number of weeks, but less than two miles from the Lunar surface the Indian space authority irretrievably lost contact with the lander. Had it been successful, India would have represented just one of four nation-states to successfully land on the Moon (the United States, Russia and China are the others) (Masih, 2019).

Notwithstanding their limited success, these developments are representative of a renewed effort to reach and explore the Moon. Indeed, China, the United States and India all plan to return humans to the lunar surface within the next two decades and the European Space Agency has announced plans for a "Moon Village" by mid-century (Mance and Kanematsu, 2019). The above developments also reflect a pronounced shift in the political economic bases of space travel and space exploration more broadly. During the heyday of the Apollo missions, manned-space flight and exploration was largely the purview of the main space-faring nations (the US and USSR) which could command massive techno-scientific bureaucracies (the Apollo program employed ca. 400,000 people) and dramatic budgets (Apollo's price tag was \$100 Billion, 25 percent more than the Manhattan Project) (Kakaes 2019b:8, Lafleur 2010).

However, although NASA continues to be the main coordinator for US space activities, it increasingly outsources significant portions of the design, construction and realization of its space projects to private companies. For example, in 2018, as part of its Commercial Lunar Payload Services Program (CLPS) NASA funded nine companies to develop and build spacecraft to get equipment and humans to the moon. Although a number of these companies enjoy economies of scale one would expect for such a feat (e.g. Lockheed Martin has a market value of \$96 billion and 100,000 employees), at least one of these companies is little more than a startup: Masten Space Systems, a small rocket company, barely has 15 employees (Gilliland 2019: 54).

Although it is not necessarily cheaper to get into orbit, the Moon now appears to be more accessible and easier to reach. In 2018, Japanese billionaire Yusaku Maezawa signed a contract with Elon Musk's Space X to be the first private customer to ride around the Moon in Space X's Big Falcon Rocket (BFR) sometime after 2023. Maezawa has launched a website and announced that he has bought "all the seats" on the rocket and plans to take other artists on board to turn the experience into an art project (Grush 2018). More recently, US President Donald Trump has announced a new accelerated schedule for a manned Lunar landing in 2024 (Morton 2019). How does all this activity shift the symbolic role the Moon has played since Kennedy's speech and the heyday of the Apollo program? How does the wider accessibility of space and the Moon, including for those nations that were non-space faring during the 1960s and 70s, shift the impasse over the legal status of the Moon and its resources?

This short essay briefly revisits some of the key issues and controversies associated with drafting the Outer Space Treaty (1967) and the Moon Agreement (1979). Drawing on Hannah Arendt's critique of the Space Age, I argue that both treaties were a concerted attempt to think through the effects and process of space exploration not from the standpoint of the scientist for whom reaching the Moon and exploring the cosmos represented another stage in the progress towards an abstract universal standpoint. Rather the treaties represented an attempt to read history into the future and to generate a radical normative break with historical patterns of colonialism and domination—a chance to inject equity and justice into the future of humankind.

Outer Space, Celestial Bodies and the Moon

The Outer Space Treaty (OST) was negotiated throughout 1966 in the Fifth Session of the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS). The technical work of reconciling the two initial drafts of the treaty produced by the US and the USSR with the suggestions and amendments proposed by other states took place in the Legal Subcommittee of COPUOS between July and September of that year. During its 21st session, the UN General Assembly adopted the final draft of the treaty and it entered into force in October 1967. The Outer Space Treaty juggled a series of countervailing imperatives and themes. On the one hand, it was written in the midst of the Cold War and the specter of a nuclear arms race between its two main parties. On the other, delegates took the novelty of their charge seriously and worked to erect a durable legal scaffolding for cosmic exploration; one that explicitly drew upon the accumulated experience of how such activities had unfolded on Earth.

The treaty forbids the militarization of outer space. It bans weapons testing and military bases, as well as outlaws the use and importation of nuclear or other weapons of mass destruction. It bans the erection of fortifications and requires that any permanent structures or installations on celestial surfaces be transparent and open to inspection (see for example OST 1967, Article XII). It draws some of its strongest language from two international treaties signed during this period, the Antarctica Treaty (1957) and the Nuclear Non-Proliferation Agreement (1967). The influence of these treaties is evident in a number of provisions, notably, on the ban on military activities and bases as well as the promotion of space as a zone of free exploration, scientific research and international cooperation (Twibell 1997).

More tenuous and controversial were the links that developing states sought to draw between contemporary global power asymmetries and past practices of exploration, appropriation and colonial domination. For example, in its proposals and negotiations, Mongolia directly

referenced the ongoing Vietnam War and the wider history of colonial expropriation while Brazil emphasized the fact that although the spacefaring powers loomed large over the treaty's drafting, the adopted text would also have to reflect the interests of not-yet-space faring powers. Indeed, the opening paragraph of Article I which states that space exploration would be carried out for the 'benefit of mankind' was understood by the United States as a concession to Brazil's stance and generated unease within the US Congress over whether this bound the US to new international commitments with respect to the developing world.¹

These concerns were also echoed in a draft of Article I submitted by the United Arab Republic (UAR) during the negotiations. Much like the version eventually adopted it begins by dubbing outer space as the "province of mankind" and affirms that the exploration and use of outer space is undertaken in the interests of all nations, regardless of their degree of economic or scientific development. Yet it also inserts an additional paragraph, which directly links the space exploration activities of developed states to those of emerging or developing states. It stipulates that exploring states pledge to "accord facilities and to provide possibilities to the non-space Powers" to facilitate their participation in space exploration with a view towards deriving practical benefits related to their "economic and social development" (COPUOS, 1966:6).

The gap between these more critical pronouncements and the depiction of Outer Space as *res nullius* (a category in international law which posits that a space is open to be claimed on a first come first served basis) was bridged through framing the entirety of space and the celestial bodies as "the province of mankind" whose exploration was pursued in the name of all and the erection of a ban on sovereign claims. States retained ownership of their equipment (e.g., installations and vehicles) and sovereignty over their personnel but, much as on the High Seas, interactions were structured along conditions of open access and mutual cooperation. This effectively precluded states from claiming or appropriating space and the celestial bodies as falling within their national sovereignty, much as colonizing forces have done in European history (Twibell 1997, 594). Thus, ultimately, despite the fact that the core provisions of OST drew upon the drafts submitted by the

¹ The text of Article I reads:

The exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind.

Outer space, including the moon and other celestial bodies, shall be free for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law, and there shall be free access to all areas of celestial bodies.

There shall be freedom of scientific investigation in outer space, including the moon and other celestial bodies, and States shall facilitate and encourage international co-operation in such investigation. (OST, 1957).

US and the USSR and reflected their dualistic worldview, throughout treaty negotiations and in the final draft the concerns of non-space faring states carried weight.

The drafting process for OST moved swiftly because many delegates worried that a moon landing was imminent and that the treaty would not be ratified in time. In contrast, the Moon treaty deliberations took place amidst ongoing lunar landings and although Apollo 11's return with soil and mineral samples gave the talks their initial impetus, deliberations eventually eclipsed the entire era of manned lunar exploration. The length of the process is linked to the fact that the Moon treaty significantly expands and radicalizes the normative framework of outer space ("province of mankind") developed in OST. For example, whereas the Outer space treaty placed an injunction on sovereign claims of ownership over the Moon and Celestial Bodies, the Moon treaty specifically extends this ban to private individuals and commercial enterprises—areas that had been widely understood as loopholes to the sovereign ban on ownership (Twibell 1997).

This critical orientation is also evident in the proposals and drafts of delegates. For example, Argentina's proposal not only posited that "the benefits obtained from the use of the natural resources of the Moon...shall be made available to all peoples without discrimination of any kind (Article 4)," but it also stipulated that in the redistribution of those benefits there should be specific weight accorded to the "promotion of higher standards and conditions of economic and social progress and development" of developing countries (Article 5). This view was echoed in the proposals and suggestions of a number of non-space faring countries like India and Egypt.

Argentina's proposals neatly summarize two particularly contentious areas that shaped the core schisms (spacefaring vs non-spacefaring countries and developed vs developing nations) around which talks foundered. The first involved the expansion of the communal status of the Moon. Already in the Outer Space treaty, the use of the phrase "province of mankind" to identify the communal status of outer space and the celestial bodies had proved controversial. Although most nations supported it, the phrase had an undefined legal status, at once expressing "a state of affairs in the community of nations yet to be attained" while at the same time concealing the "largely uncovered and unsolved conflicts of interest" among the treaty's parties (Bueckling 1979, 20). In describing the Moon as the "common heritage of mankind," the delegates were clearly moving beyond contemporary categories and reaching for some notion of common ownership and obligation that would endure throughout the ages. The phrase was popular with a number of countries (e.g., Argentina, Brazil, Sweden, Turkey, Chile and Ecuador) but was opposed by the Soviet Union and the German Democratic Republic, as well as Australia and ultimately opposed by American business interests.

Although it was ultimately adopted, the consequences that flowed from the designation “common heritage of mankind” were difficult to resolve. In contrast to OST, which targeted the problems of sovereign appropriation and militarization through a ban on both, the Moon agreement focuses solely on the Moon and the use of its resources. If, reasoned representatives of the developing world, the exploration and exploitation of these natural resources is an activity pursued in the interests of all, then what mechanism might ensure that the benefits of such activity can be equitably shared?

This group’s push for a “New International Economic Order” was reflected in the Moon Treaty’s hostile treatment of not only national sovereignty (already forbidden by the 1967 Treaty) but also private property rights—with any for-profit exploitation of space resources to be undertaken only by a monopolistic international organization that would ensure that a share of the profits went to developing states (Reynolds 1992, 230).

The moon treaty envisaged a system directed by an international governing body that would oversee the extraction and exploitation of lunar resources when at some point in the future, that exploitation and extraction would become feasible (The Moon Agreement, Article XI section 7). Yet even this, relatively undefined, sketch of a system for drawing mutual benefit from the Moon’s resources foundered. Some commentators have explicitly linked the treaty’s failure to the fact that the Law of the Sea negotiations (happening more or less at the same time) were too vivid a representation of what such a convention might entail:

There one perceives a struggle for every square meter of the ocean floor in order to legalize an *exploitation system* and a progressive limitation of the open sea in favor of ever larger coastal zones of national sovereignty and larger economic zones under the motto, *The Land dominates the Sea!* (Bueckling 1979, 21)

Yet as much as this political and economic critique of geopolitical power asymmetries represented a stumbling block for the treaty, it was also its most distinctive feature. Not only did these countries argue that the current world economic order was the direct result of Western Exploitation but they also sought to enshrine within the Moon Treaty a set of equity principles to foreclose the possibility that the Moon’s resources would form the basis for future (and potentially more expansive) power inequalities. Much in the same manner as the Law of the Sea Convention treated the sea bed provisions as a vehicle for the redistribution of existent resource inequalities, the provisions of the Moon treaty (albeit without actually developing a framework) sought to compensate for economic imbalances and social advantage dating from the colonial era (Marko 1992, 321).

The unresolved schism between spacefaring and non-spacefaring, developed and developing, nations meant that despite it being the sole legal document that purports to regulate the exploratory, scientific and extractive activity that will take place on the Moon, the Moon

Agreement has had a mixed legacy. It has only been ratified by six countries and has not been signed by any of the major space powers (the US, Russia or China). Yet given that eleven other nations have acceded to it or become signatories, the treaty continues to exercise a shadowy presence on International Law: it does not bind the nations that have refused to sign it but is nonetheless valid international law.

Universal Science and the Loss of Commonality

How might we interpret the significance of the Moon Treaty in the context of the renewed Moon race we find around us? How should we understand the normative and legal status of all this activity in the context of the Moon treaty's unresolved legacy? I would argue that an important resource in bridging the widening gap between the promise of the Moon treaty and the contemporary reality of space activity is available in Hannah Arendt's critique of the Space Age. In her prologue to the *Human Condition* and her 1963 article "The Conquest of Space and the Stature of Man," Arendt develops a powerful critique of the universal science that brought us *Sputnik* and ushered space flight into history.

According to Arendt, the human condition is grounded in our connection to nature and the world. We draw meaning and ascribe significance to historical and personal events because of this link: we are conditioned by what we experience around us. Our senses are the filter through which we understand the world but also the basis for a common reservoir of categories and symbols through which we explicate, interpret and assess human action and advancement. Yet from this view, techno-scientific progress (as the child of a skeptical scientific worldview that trusts only objective observation and measurement) works to expose the limits of our capacity for perception by questioning the very reliability of what we can understand through our senses. The scientist, according to Arendt, seeks to view the world, the universe and all natural phenomena (humans included) through the prism of universal laws.

For Arendt, the above is problematic on a number of levels. Yet the most relevant to her discussion of the Space age is that the urge to discover universal laws, which will allow humans to harness the raw forces and materials to *create* their reality rather than be *conditioned* by it, is to approach the Earth and humanity from a fundamentally alien point of view. It is a place outside the human condition (what she calls the Archimedean point²) and hence, outside of the zone of intelligibility:

² This refers to Archimedes' boast that he could move the Earth off its axis if he was given a long enough lever and the choice of standing anywhere in the universe. Arendt uses the idea to convey the self-defeating

...[T]he truths of the modern scientific world view, though they can be demonstrated in mathematical formulas and proved technologically, will no longer lend themselves to normal expression in speech and thought...it could be that we who are earth-bound creatures and have begun to act as though we were dwellers of the universe, will forever be unable to understand, that is, to think and speak about the things which nevertheless we are able to do (1958, 3).

Meaningful activity—the basis for a moral, ethical, and political life—flows from communication between individuals about what they are doing. Yet this form of interpretation seems outside the scope of a science which inhabits “a world where speech has lost its power” (1958, 4). Thus according to Arendt we are in the paradoxical situation where scientific achievements (the atom bomb, the Moon landing, quantum computation) routinely carry ever more dramatic political consequences even as the overall trajectory of science increasingly moves beyond the interrogation of our political and normative categories.

In her essay on space exploration, she wonders how the “layman” and the scientist might debate the meaning or rationale behind the conquest of space. How would the two debate the “why” of space travel, given that they are imprisoned within modes of perception and systems of representation that are foreign to one another? It is clear that the importance of this question moves beyond the experimental method or its skepticism over whether one’s senses actually provide a reliable representation of the world, to the basis of our human commonality. It is certainly noteworthy that Arendt adopts the term “conquest” (a word akin to “mastery”) to describe the space age rather than a more neutral term like “exploration”; the conquest of space by science has a colonizing logic. As Patrick Deneen (2007, 59) argues, it threatens the very notion of a “common” and thereby, “undermine[s] the very idea of equality, and hence, the very ideal of a single humanity.”

The significance of Arendt’s critique is directly applicable to questions posed by the Moon treaty and the contemporary race to the Moon. Arendt in her critique of techno-science and its extensive developments worried that what was lost within the progressive, universal laws of history (as embodied by scientific discovery and progress) was the political language to describe unfolding events, give them meaning and situate them within human categories of ethics and justice. If we understand the Moon Agreement and its failure in this way, as an effort to think through the ethical and legal consequences (as well as give voice to questions of equity and justice) of acting in and exploring outer space, then we are left with her diagnosis of what happens when such efforts fail.

If it should turn out to be true that knowledge (in the modern sense of know-how) and thought have parted company for good, then we would indeed become the helpless slaves,

standpoint of modern science: the drive to understand nature and the given world objectively from a point outside Earth as might be done by her creator (Arendt, 1963).

not so much of our machines as of our know-how, thoughtless creatures at the mercy of every gadget which is technically possible, no matter how murderous it is (Arendt, 1958, 3).

In other words, an explanation of “why” we are going to the Moon or “what” we are doing there, is now divorced from the actual process of going there. Going to the Moon has achieved a curious alchemy, already intimated in Kennedy’s speech, the Moon stands for both the *means* to achieve something greater (which remains undefined) and the *end* which one wants to achieve. It collapses both categories into a larger historical trajectory of teleological progress within which the Moon itself is neither articulated nor conceptualized as inherently meaningful.

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PRE-PRINT DRAFT

DO NOT CITE WITHOUT AUTHOR'S PERMISSION

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