

Beautiful Craterfront Property for Sale!

A Thought Experiment on the Justifications for Private Property in the Moon

P.T. Babie*

ABSTRACT

This article engages in a brief thought experiment. It assumes that private property can be applied to ownership of the Moon. It assumes that there is a nation with a legal system that can enforce that property. Assuming all of that, it asks: Why should my rights prevail over any others? In any system of law the content of private property—the bundle of rights of use, exclusion, and alienability—is only one half of what a system of property creates. The other half asks “why”—why is it just that I should have private property in that resource while others do not? What a nation creating private property in the Moon would need to do, then, is justify its existence. The primary focus of this article, therefore, concerns ownership—private property—in the Moon from the perspective not of possibility, but of justification. For, in the final analysis, there is little doubt that a regime of private property can and very likely will be established in the Moon. But can it be justified? That is the question that must be asked, and which this article explores.

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* Bonython Chair in Law and Professor of Law, Adelaide Law School, The University of Adelaide.

I. INTRODUCTION

Little doubt surrounds the conviction that humanity will soon colonise and therefore be spending a great deal of time in space, on the Moon, and possibly even on Mars.¹ What is the reason for inhabiting and controlling these new territories? Well, it seems that a lot of it has to do with exploiting the resources to be found there, which can be used for various purposes on Earth.² A C Grayling writes:

[T]he ambition to undertake mining operations on the moon was already advanced by the end of the first decade of the twenty-first century. Lunar probes had established that the moon contains many common minerals, including basalt, iron, quartz, and silicon, and the strong possibility that there are ores (minable deposits) of what geologists call ‘incompatible lithophilic elements’: chlorine, lithium, beryllium, zirconium, uranium, thorium, and the rare earths. Moreover, there are significant quantities of water ice at the moon’s poles, the importance of which is that oxygen and hydrogen, the constituents of water (H₂O), can easily be separated to provide rocket propellant.³

1. See, e.g., *Why space is about to enter its nuclear age: Faster, higher, stronger*, THE ECONOMIST, February 1, 2022, PROQUEST, <https://perma.cc/3UA5-5DW6>; Babbage, *Everyone’s going to the moon—a new space race*, THE ECONOMIST (January 4, 2022); *In 2022 a Moonrush will begin in earnest*, THE ECONOMIST, January 1, 2022, GALE, <https://perma.cc/W3AL-WWCL>; *Several ambitious space missions will blast off in 2022: The World Ahead 2022*, THE ECONOMIST, November 8, 2021, PROQUEST, <https://perma.cc/T9X2-P75J>; *How to prevent conflict on the way to Mars*, THE ECONOMIST, December 18, 2021, LIONSEARCH, <https://perma.cc/UL2F-V7JC>.

2. See Theodore Schleifer, *Could Mars Be Elon Musk’s Next Business Venture?*, THE NEW YORK TIMES, April 25, 2025, LIONSEARCH, <https://perma.cc/QUQ9-TJNQ>; A. C. GRAYLING, WHO OWNS THE MOON?: IN DEFENCE OF HUMANITY’S COMMON INTERESTS IN SPACE (2024); KELLY & ZACH WEINERSMITH, A CITY ON MARS: CAN WE SETTLE SPACE, SHOULD WE SETTLE SPACE, AND HAVE WE REALLY THOUGHT THIS THROUGH? (2024).

3. GRAYLING, *supra* note 2, at 1.

There is certainly much to be exploited with the corresponding potential for great profit. The value of those resources could be astronomical.⁴ All of this is nothing new; indeed, it has been known for some time.⁵

But in all of this hype about our imminent colonisation, and our rush to exploit and so profit from the off-Earth resources available, perhaps we ought to step back and contemplate some questions that no one seems to be asking, questions that can be subsumed under one banner, as Grayling puts it: “how exporting our too-common human bad behaviour to [space and other planetary bodies] might harm us back on earth”?⁶ And this matters, for

if there is not a much wider public debate about the matter, what happens in space will be decided by a few only (the governments of the space-active states, multinational corporations, mavericks like Elon Musk), and in their own interests—political and commercial interests, far from invariably the same as the interests of humanity and nature.⁷

In this article, I want to ask just one of the many questions that we might ask, and it begins with this: Is it possible for individuals or corporations to hold private property, to own, bits of space, of the Moon, or of Mars?⁸ Now, as a conceptual matter, it is certainly possible to own bits of space, the Moon, Mars, or any other celestial body, as private property, just as anything on Earth can be. There is no inherent limit to which the concept of private property can be applied. Anything that exists can be made its subject matter.

4. See Mark J. Sundahl & Jeffrey A. Murphy, *Set the Controls for the Heart of the Moon: Is Existing Law Sufficient to Enable Resource Extraction on the Moon?*, 48 GA. J. INT’L & COMPAR. L. 683 (2020); Melissa de Zwart, Stacey Henderson & Michelle Neumann, *Conceptualising sustainability in outer space resource utilisation*, 32(4) GRIFFITH L. REV. 481 (2023); Maya Wei-Haas, *The bizarre drama behind a pinch of moon dust that just sold for \$500,000*, NAT’L GEOGRAPHIC (April 14, 2022), <https://perma.cc/DLU8-878K>; Matthew Hutson, *The Quest to Build a Telescope on the Moon: If the FarView radio telescope is built, it would double as a demonstration of two unprecedented activities: mining and manufacturing in space*, THE NEW YORKER (September 24, 2024), <https://perma.cc/S6B4-KCR3>.

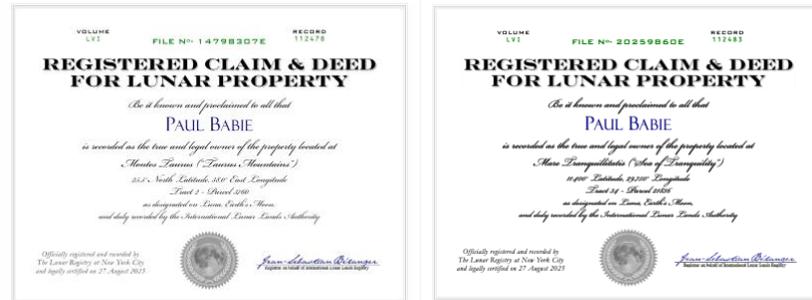
5. See, e.g., *Moon for Sale*, BBC HORIZON, <https://perma.cc/ZFY2-UMJF>.

6. GRAYLING, *supra* note 2, at xxiii.

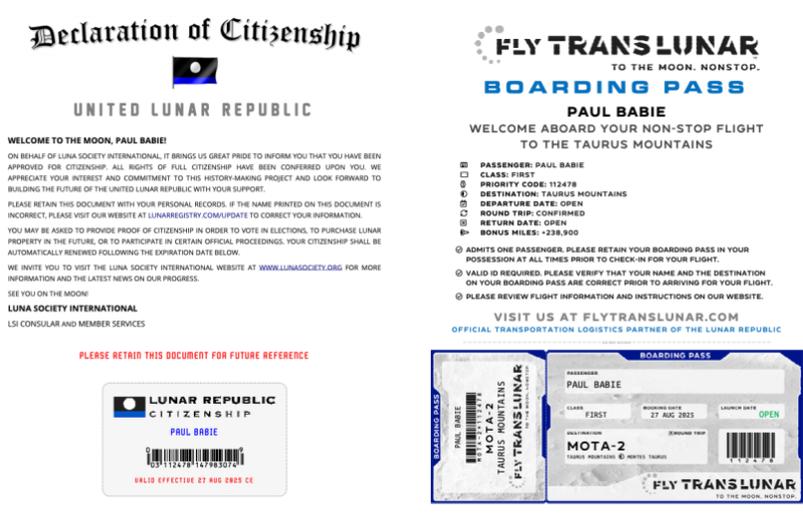
7. *Id.*

8. See VIRGILIU POP, WHO OWNS THE MOON?: EXTRATERRESTRIAL ASPECTS OF LAND AND MINERAL RESOURCES OWNERSHIP (2008); *Who Owns the Moon*, THE NEW YORKER (June 17, 2019), <https://perma.cc/D6PS-YLF8>; BBC Earth Science, *Who Owns Mars?*, YOUTUBE (June 10, 2022), <https://perma.cc/5KGF-ZCRC>.

In fact, it might surprise you to know that private property is already being used to allocate lunar territory. You, too, can already own lunar land! Through a very modest expenditure with the Lunar Registry,⁹ I recently purchased and am now the holder of title to one acre of the Sea of Tranquility and one acre of the Taurus Mountains—these are my title deeds:



And my title to these two pieces of lunar territory carries with it the added advantage of automatic citizenship of the United Lunar Republic. Even better, for the modest price of purchase, I have been issued with a ticket to the Moon on FlyTransLunar, the official transportation logistics partner of the Lunar Republic. These are the relevant documents:



Similar ownership rights, automatic citizenship, and boarding passes are available for Mars through Buy Land On Mars: The Original & Official

9. See THE LUNAR REGISTRY, <https://perma.cc/7B5J-DN8D> (last visited July 1, 2025).

Real Estate Agent of Mars.¹⁰ All of this is, of course, absurd. Or is it? In this article I want to engage in a brief thought experiment. As I have already said, private property is capable of application to anything that is, including the Moon, Mars, and other bits of space. The problem, at least in the first instance, is enforcement: how can I enforce my ownership in those two acres of lunar land? The first step would be getting to the Moon; once there, I would need to have a legal system that would enforce my rights should others attempt to interfere with them. And, assuming an ease of travel to the Moon, there will be plenty of people attempting to interfere with my rights!

But, for the purposes of my thought experiment, assume, for a moment, that the United Lunar Republic is a real “nation”, assume that my citizenship in that republic is real, assume that FlyTransLunar can get me to the Moon, assume that I can survive there, and let us assume that the Moon can be owned, meaning that it is available to become the subject matter of private property, just as any other thing can be. Assume, in other words, that my title to one acre in the Sea of Tranquility and one acre in the Taurus Mountains, issued by the Lunar Registry, has conferred on me a fee simple absolute¹¹ in possession in those two acres of lunar territory. In fact, some of this is not so far-fetched. It is already well-known that private enterprises are working towards travelling to and occupying the Moon and Mars for commercial exploration and exploitation of the resources there.

So, assuming that all of this becomes possible, then, once I am there, assume finally that the United Lunar Republic has a system of laws that is capable of enforcing my rights against those who might seek to interfere with them. Why should my rights prevail over any others? That is the question that we might ask of the United Lunar Republic, assuming that it has laws willing to enforce my rights. It has provided the content of the private property, but in any system of law, content is only one part of what property is. But then we must ask “why”—why is it just for me to have property in a resource while others do not? In other words, the United Lunar Republic needs to demonstrate, in order to enforce my ownership of two acres of lunar territory, the justification for my private property. The focus of this article concerns ownership—private property—in the Moon from the perspective not of possibility, but of justification. For, in the final analysis, private property will be established in lunar resources. But can it be justified? That is the question that must be asked.

10. See *PIECE OF MARS*, <https://perma.cc/HM69-46YJ> (last visited July 1, 2025).

11. A fee simple is the basic ownership interest capable in land in any common law system, including the United States.

This Article contains three Parts. The first Part briefly recaps the existing law relating to ownership of the Moon. The current international regime seems to reject the potential for such ownership. However, there is little doubt that that regime of international law is easily evaded if not ripe for outright rejection by states who see the payoff as too great to allow something like international law to stand in the way. If that is so, then some justification will need to be advanced for allowing private property in the Moon. The second Part examines the seven justificatory theories that have been advanced throughout the course of human history. If those justifications apply to anything else that has ever been the subject of private property, and so owned, then they apply to the Moon, too. But are they convincing? The final Part offers brief concluding reflections on private property in lunar territory. Spoiler alert: can private property in the Moon be justified? Of course not!

II. CURRENT LEGAL REGIME

Some domestic national legislation already deals with the exploration and control of space.¹² In the United States, for instance, the Commercial Space Launch Competitiveness Act,¹³ the One Small Step to Protect Human Heritage in Space Act,¹⁴ and the Executive Order on Encouraging International Support for the Recovery and Use of Space Resources¹⁵ provide some guidance as to the exploitation and ownership of off-Earth resources. Similarly, Luxembourg's Exploration and Utilisation of Space Resources 2017¹⁶ and the United Arab Emirates Federal Law on the Regulation of the Space Sector 2019¹⁷ have similar effect in those jurisdictions. But those domestic laws apply only to the nations that enacted them, and they fail to deal comprehensively with the ownership of space resources or of the Moon; even if they did, they would have no effect beyond those already subject to the laws of those nations.

12. On existing law, *see generally* Melissa de Zwart, Stacey Henderson, & Michelle Neumann, *Space resource activities and the evolution of international space law*, 211 ACTA ASTRONAUTICA 155 (2023).

13. *See* Commercial Space Launch Competitiveness Act, Pub. L. No. 114-90, 129 Stat. 704 (2015); Space Resource Exploration and Utilization Act of 2015, H.R. 1508, 114th Cong. (2015).

14. *See* One Small Step to Protect Human Heritage in Space Act, Pub. L. No. 116-275, 134 Stat. 3358 (2020).

15. *See* Exec. Order No. 13,914, Encouraging International Support for the Recovery and Use of Space Resources, 70 Fed. Reg. 20381, 20381-2 (April 10, 2020).

16. *See* Loi du 20 juillet 2017 sur l'exploration et l'utilisation des ressources de l'espace [Law of July 20th 2017 On the Exploration and Use of Space Resources], Art. 1 (Lux.).

17. *See* On the Regulation of the Space Sector (Law No. 12, 2019), Art. 14 (U.A.E.).

Most analyses of the space ownership question usually, however, start with international law, typically analogising from existing treaties that deal with resources on Earth, such as the law governing the seas—the United Nations Convention on the Law of the Sea (“UNCLOS”).¹⁸ Article II of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (“Outer Space Treaty”),¹⁹ for instance, provides that “outer space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.” A number of other international instruments deal in some way with resource exploitation: the United Nations Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space,²⁰ the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (“Moon Agreement”),²¹ the Agreement on the Rescue of Astronauts and the Return of Objects Launched into Outer Space,²² the Convention on International Liability for Damage Caused by Space Objects,²³ and the Convention on Registration of Objects Launched into Outer Space.²⁴

Some non-binding international instruments and agreements also provide some guidance. These include The Artemis Accords: Principles for Cooperation in the Civil Exploration and Use of the Moon, Mars, Comets and Asteroids for Peaceful Purposes,²⁵ International Space Station Intergovernmental Agreement,²⁶ the Hague International Space Resources Governance Working Group: Building Blocks for the Development of an

18. See U.N. Convention on the Law of the Sea, Dec. 10, 1982, 1833 U.N.T.S. 397.

19. See Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, Jan. 27, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205.

20. See G.A. Res. 1962 (XVIII), U.N. Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space (Dec. 13, 1963).

21. See Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, Dec. 18, 1979, 1363 U.N.T.S. 3.

22. See Agreement on the Rescue of Astronauts and the Return of Objects Launched into Outer Space, Apr. 22, 1968, 19 U.S.T. 7570, 672 U.N.T.S. 119.

23. See Convention on International Liability for Damage Caused by Space Objects, Sept. 10, 1972, 24 U.S.T. 2389, 961 U.N.T.S. 187.

24. See Convention on Registration of Objects Launched into Outer Space, Jan. 14, 1975, 28 U.S.T. 695, 1023 U.N.T.S. 15.

25. See *The Artemis Accords: Principles for Cooperation in the Civil Exploration and Use of the Moon, Mars, Comets and Asteroids for Peaceful Purposes*, NASA (Oct. 13, 2020), <https://perma.cc/W7PP-SSVR>.

26. See International Space Station Intergovernmental Agreement, January 29, 1998, T.I.A.S. No. 12,927.

International Framework on Space Resource Activities,²⁷ and NASA's Request for Quotations for the Purchase of Lunar Regolith and/or Rock Materials from Contractor.²⁸ Some organisations, too, seek to foster responsible use of the lunar environment. For All Moonkind is “a non-profit organization that seeks to protect each of the six human lunar landing and similar sites in outer space as part of our common human heritage”, which was granted Permanent Observer status to the United Nations Committee on the Peaceful Uses of Outer Space in 2018.²⁹ The Australian Earth Laws Alliance issued the Declaration of the Rights of the Moon Draft for circulation and discussion on February 11, 2021.³⁰ The Open Lunar Foundation “work[s] to ensure a peaceful and cooperative presence on the Moon, through collaborative technology, policy and infrastructure.”³¹ The Moon Village Association, “a non-governmental organization, founded in 2017 in Vienna, aims to promote international collaboration in the exploration and settlement of the Moon.”³² Finally, the United Nations Office for Outer Space Affairs, Committee on the Peaceful Uses of Outer Space, established the Working Group on Legal Aspects of Space Resource Activities in 2021.³³

None of these laws, instruments or organisations, however, either establish a comprehensive system of private property in the Moon, nor do they provide for its comprehensive denial. The existing law, both domestic and international, is vague and provides insufficient guidance that would either establish a full system of private property or prevent expansion and unregulated exploitation of resources. In fact, in every case, uncertainty surrounds the practical application of any of this law. To date, five nations have successfully achieved soft landings on the Moon: the Soviet Union (Interkosmos), the United States (NASA), China (CNSA), India (ISRO), and Japan (JAXA). Each has collected lunar dust and rocks.

27. See *Building Blocks for the Development of an International Framework on Space Resource Activities*, HAGUE INTERNATIONAL SPACE RESOURCES GOVERNANCE WORKING GROUP (Nov. 12, 2019), <https://perma.cc/DA8D-E4HH>.

28. See NASA: Purchase of Lunar Regolith and/or Rock Materials from Contractor, SAM. GOV (Sep. 10, 2020), <https://perma.cc/V4KQ-EVGV>.

29. See FOR ALL MOONKIND, <https://perma.cc/EKK9-2US5> (last visited July 1, 2025).

30. See Declaration of the Rights of the Moon, AUSTRALIAN EARTH LAWS ALLIANCE (Feb. 11 2021), <https://perma.cc/Q9CZ-M5CE>.

31. OPEN LUNAR FOUNDATION, <https://perma.cc/UDQ7-6946> (last visited July 1, 2025).

32. MOON VILLAGE ASSOCIATION, <https://perma.cc/RR2W-35KH> (last visited July 1, 2025).

33. See U.N. OFFICE FOR OUTER SPACE AFFAIRS: WORKING GROUP ON LEGAL ASPECTS OF SPACE RESOURCE ACTIVITIES, <https://perma.cc/2H2S-PQPZ> (last visited July 1, 2025).

But perhaps more importantly, even if the relevant international law did provide a comprehensive code governing exploitation of lunar resources, it is nothing more than an exhortatory source of guidance for what international actors should do, not what they must do. The question, then, arises: is international law, including the existing regime dealing with space and the Moon, even “law” in the sense that we understand that term to mean when we survey existing national legal systems? H. L. A. Hart, whose theory of law is widely taken to capture the meaning of law in most states, writes:

Though it is consistent with the usage of the last 150 years to use the expression ‘law’..., the absence of an international legislature, courts with compulsory jurisdiction, and centrally organized sanctions have inspired misgivings, at any rate in the breasts of legal theorists. The absence of these institutions means that the rules for states resemble that simple form of social structure, consisting only of primary rules of obligation, which, when we find it among societies of individuals, we are accustomed to contrast with a developed legal system.³⁴

Hart goes on to consider whether we can conclude that international law is, indeed, a system of law and agrees with Jeremy “Bentham, the inventor of the expression “international law”, [that it can be] defended...simply by saying that it was “sufficiently analogous” to municipal law.”³⁵ But, Hart adds “the analogy is one of content not of form [and] in this analogy of content, no other social rules are so close to municipal law as those of international law.” In short, Hart concludes that international law is, in fact, law.

But in coming to this conclusion, Hart identifies the key problem for our purposes when considering the legal regime governing lunar ownership: how can international law be brought to bind those who are said to be its subjects, namely, nations? This might be called the “bindingness problem” of international law, and it states the truth that there is an absence, in international law, of a system of centrally organised sanctions and, as such, it cannot be binding on its subjects. Instead, it binds only to the extent that those subject to it accept being bound by it. Hart concludes that this does not impede the conclusion that international law

34. H.L.A. HART, *THE CONCEPT OF LAW* 214 (3rd ed., 2012).

35. *Id.* at 237 (citing JEREMY BENTHAM, *AN INTRODUCTION TO THE PRINCIPLES OF MORALS AND LEGISLATION* XVII, 25, n. 1 (1970)).

can still be called “law”, but he does not deny that there are no effective sanctions. He merely concludes that their absence, and so the inability of international law to bind, does not mean that international law is not “law”.³⁶ But it still has the “bindingness problem.”

Why does bindingness become a problem in the lunar case? The answer is simple: the clear incentive to ignore the existing international regime in the pursuit of profit on the Moon militates against accepting the current regime as limiting those activities. While it is true that domestic civil law of states can sometimes exhibit this same “bindingness” problem, as everyone knows, international law has an acute case of that problem—it only binds to the extent states choose to obey it. And that means it binds until a state decides it doesn’t, and then it does nothing. We do not need to look too hard to find extreme examples of the bindingness problem when it comes to ownership of space and its resources. The supersession, or outright flouting of international law, happens, and happens quickly. On April 24, 2025, the New York Times reported:

President Donald Trump has ordered the U.S. government to take a major step toward mining vast tracts of the ocean floor, a move that is opposed by nearly all other nations, which consider international waters off limits to this kind of industrial activity.

The executive order, signed Thursday, would circumvent a decades-old treaty that every major coastal nation except the United States has ratified. It is the latest example of the Trump administration’s willingness to disregard international institutions and is likely to provoke an outcry from America’s rivals and allies alike.³⁷

This is not the first time the issue of deep sea mining has been mooted, in contravention of UNCLOS, the key piece of international law governing exploration and exploitation of the seas.³⁸ And it is not the first territory in

36. See *id.* at 216-7.

37. Max Bearak, Rebecca Dzubak, & Harry Stevens, *Trump Takes a Major Step Toward Seabed Mining in International Waters*, THE NEW YORK TIMES, April 25, 2025, PROQUEST, <https://perma.cc/4UBX-9H9K>.

38. See William Brangham, Willem Marx, & Zeba Warsi, *The potential impacts of mining rare minerals from the ocean floor*, PBS NEWS HOUR (April 18, 2025), <https://perma.cc/8UYN-BSP7>; Willem Marx & Ed Kiernan, *Companies dig the deepest depths to mine valuable metals from the ocean floor*, PBS NEWS (September 17, 2024), <https://perma.cc/4CC4-8M5T>; Willem Marx & Ed Kiernan, *Papua New Guinea locals concerned over deep-sea mining’s impact on culture and environment*, PBS NEWS

which a current system of international law exists that is designed to limit the exploitation of resources but is beginning to show signs of stress. A number of state actors are eying Antarctica, the subject of the Antarctic Treaty System,³⁹ for the resources that might soon be much easier to extract as a result of global warming due to climate change.⁴⁰ But the rejection of the international law of the sea, and the possibility that the same might happen in Antarctica, only confirms what has already happened with respect to the Moon, and so can only forebode what the future holds for lunar resources.

We need not speculate about this: that future is already American law. Remember the Commercial Space Launch Competitiveness Act? It already provides that:

A U.S. citizen engaged in commercial recovery of an asteroid resource or a space resource shall be entitled to any asteroid resource or space resource obtained, including to possess, own, transport, use, and sell [the asteroid resource or space resource obtained in accordance with] applicable law.⁴¹

And, in 2020, President Trump made clear the application of this stance to the Moon, in the Executive Order on Encouraging International Support for the Recovery and Use of Space Resources.⁴² Section 1 provides, in part:

Americans should have the right to engage in commercial exploration, recovery, and use of resources in outer space, consistent with applicable law. Outer space is a legally and physically unique domain of human activity, and the United States does not view it as a global commons. Accordingly, it shall be the policy of the

(September 18, 2024), <https://perma.cc/969B-Y4BC>; Willem Marx & Ed Kiernan, *Papua New Guinea leaders struggle to monitor deep-sea mining activities off its coast*, PBS NEWS (September 19, 2024), <https://perma.cc/28PA-Z6DW>.

39. See *Antarctic Treaty*, Dec. 1, 1959, 402 U.N.T.S. 71, T.I.A.S. 5,778; SECRETARIAT OF THE ANTARCTIC TREATY, <https://perma.cc/SJ4Q-5QHL> (last visited July 1, 2025). The Antarctic Treaty and a group of related agreements are collectively known as the *Antarctic Treaty System* (ATS), administered by the Antarctic Treaty Secretariat.

40. See Jessica T. Miskelly, *Who owns the future of Antarctica?*, EUREKA STREET (Aug. 29, 2025), <https://perma.cc/3WAJ-F9FR>.

41. *Commercial Space Launch Competitiveness Act*, Pub. L. No. 114-90, § 51303, 129 Stat. 704, 721 (2015).

42. See Exec. Order No. 13,914, Encouraging International Support for the Recovery and Use of Space Resources, 70 Fed. Reg. 20381, 20381-2 (April 10, 2020).

United States to encourage international support for the public and private recovery and use of resources in outer space, consistent with applicable law.⁴³

And Section 2 goes on:

The United States is not a party to the Moon Agreement. Further, the United States does not consider the Moon Agreement to be an effective or necessary instrument to guide nation states regarding the promotion of commercial participation in the long-term exploration, scientific discovery, and use of the Moon, Mars, or other celestial bodies. Accordingly, the Secretary of State shall object to any attempt by any other state or international organization to treat the Moon Agreement as reflecting or otherwise expressing customary international law.⁴⁴

And in 2025, it is becoming plainly obvious that the executive branch of the United States government will ignore aspects of American domestic law.⁴⁵ If that is so, there is little reason to conclude that it will not do the same with respect to inconvenient international law, such as the minimal regime that currently protects space. And if the United States leads the way many states will follow suit, either flouting or outright ignoring international law. It is obvious why this will happen and why it will be in a state's interests to do so: there is simply too much to be found in space, the Moon, Mars, and beyond, that people want, and that is valuable.⁴⁶ Space is a scarce resource, and wherever there are scarce resources, people want to have those resources to themselves. And where that happens, private property is not far behind.

So, while international law *could* be used to establish a system of property, or resource allocation, for the Moon and its resources, will it really help? The answer to that question lies in the very nature of property itself—it, too, has a bindingness problem: why should people accept a system of property that allocates resources in such a way that some end up with more? A “state”—like the United Lunar Republic—can, of course, place the weight of its monopoly on violence to ensure that people accept and live according to the system of property imposed upon them. Max Weber wrote:

43. *Id.* at 20381.

44. *Id.*

45. See generally David M. Driesen, *Donald Trump and the Collapse of Checks and Balances*, 77 SMU L. REV. F. 199 (2024).

46. See GRAYLING, *supra* note 2, at 107-8.

A compulsory political organization with continuous operations...will be called a “state” [if and] insofar as its administrative staff successfully upholds a claim to the *monopoly* of the *legitimate* use of physical force [(*das Monopol legitimen physischen Zwanges*)] in the enforcement of its order.⁴⁷

But there is only so much losing to those who already have much that the vast majority (who are the ones doing the losing) can tolerate. At that point, states usually invoke political theory to bolster the use of monopolised violence to hold people in line. Some sort of justificatory theory might, it is hoped, convince people not to revolt against unequal distributions of resources. So, what if we applied the typically advanced justificatory theories for the existence of private property to the allocation of lunar resources?

III. JUSTIFYING PRIVATE PROPERTY

Crucial to liberal political theory is some sort of justification for why unequal outcomes in the allocation of “scarce” resources effected by private property should nonetheless be left to stand. The thought experiment advanced in this article, that the concept of private property could be extended to the Moon, and that doing so could be done in the face of existing international law, tests those justifications. How can property/ownership be justified in this context? The conclusion ought to be obvious, and it follows from the various international attempts to prohibit ownership of the Moon. Private property in the Moon cannot be justified. Morally and ethically, there is no justification for dividing up the Moon and allowing a very few to profit from its resources. In truth, the same can very likely be said about the use of private property on Earth—but that is another story.⁴⁸ Here we are concerned only with the Moon.

Justifications for the modern liberal conception of private property have been offered at least since the 17th century, beginning with John Locke. In fact, Locke’s theory tends to be where most modern commentators begin, and end, when discussing the possibility of property

47. MAX WEBER, *ECONOMY AND SOCIETY* 54 (Guenther Roth & Claus Wittich eds., 1978); MAX WEBER, *WIRTSCHAFT UND GESELLSCHAFT* 29 (Johannes Winckelmann ed., 5th ed. 1980).

48. See generally Timothy M. Mulvaney & Joseph William Singer, *Essential Property*, 107 *MINN. L. REV.* 101 (2022); P. T. BABIE, *SHADOW PROPERTY AND THE HIDDEN EMPIRE OF EGO REFLECTIONS ON THE PAST, PRESENT, AND FUTURE OF LIBERAL PROPERTY* (2024); J. W. HARRIS, *PROPERTY AND JUSTICE* (1996).

in space, the Moon, Mars, and anywhere else off-Earth.⁴⁹ It is the very fact of inequality that private property requires justification at all. If it was not unequal, it would require no justification. It would be accepted without question. But, in truth, it is really an attempt to convince (deceive?) people into thinking that private property is good for them—something that, through long and hard work; that they, too, will have its abundance rather than its lack. We know the story:⁵⁰ private property creates incentives to work hard, it rewards hard work, it allows people who invest to gain a return on that investment.

All attempts at justification, then, can be summarised as William Paley did: “A regime of...property...increases productivity, encourages social peace and promotes commodious living. Meanwhile, the apparent evils of inequality are fully compensated by the “incitement to industry” that arises from unequal outcomes.”⁵¹ “Incitement to industry” is another way of saying that exercising one’s own personal preferences increases productivity, encourages social peace, and promotes commodious living. Michael J Sandel has called this the “tyranny of merit”: “[i]n an unequal society, those who land on top want to believe their success is morally justified. In a meritocratic society, this means the winners must believe they have earned their success through their own talent and hard work.”⁵² And we believe this “because [people] have been repeatedly told it is so. Those who are the purveyors of this myth have gone to a lot of effort to make us believe that ‘the system works’ and that opportunity is there for the taking.”⁵³

Few would readily agree to accept such a system unless, of course, they belong to the few who have “won the game” of “tyranny”, and who so hold that power. But change “unequal power” or “tyranny” of the few over the many to “private property” and the concept justifies itself—it carries a weightiness, an authority, a power in itself that people want to hold and to which they readily submit. Add to that the belief that everyone enjoys equal access to that power and the argument for it is not only self-sustaining, but virtually insurmountable. The justifications offered for

49. See, e.g., WEINERSMITH, *supra* note 2, at 295, 298-9, 303, 306; GRAYLING, *supra* note 2, at 12.

50. See generally MICHAEL J. SANDEL, THE TYRANNY OF MERIT: WHAT’S BECOME OF THE COMMON GOOD? (2021). This is the classic critique for that story.

51. CHRISTOPHER PIERSON, JUST PROPERTY: A HISTORY IN THE LATIN WEST. VOLUME ONE: WEALTH, VIRTUE, AND THE LAW vii (2013) (citing WILLIAM PALEY, THE PRINCIPLES OF MORAL AND POLITICAL PHILOSOPHY 63-4 (2002)).

52. SANDEL, *supra* note 49, at 13.

53. Mulvaney & Singer, *supra* note 47, at 654.

private property do precisely that: sustain the few who enjoy it in their position of power, their tyranny of merit.

The name alone is not a sufficient justification and so, beginning with the Greeks and running to our own time, many justificatory theories have been advanced to defend and justify private property.⁵⁴ They can be grouped, broadly, as Bruce Ziff has done, referring to six standard “goodness-of-property” claims: (i) the promotion of human happiness, (ii) the promotion of human flourishing, (iii) the facilitation of freedom, (iv) the enhancement of material wealth, (v) that private property is just, or at least legitimate, and, (vi) a plural account, combining each of (i)-(v).⁵⁵ Here, relying on Ziff, we can briefly consider each of these claims as applied to the Moon.

The first claim, which Ziff summarises as justifying private property on the basis that it promotes human happiness, draws on Jeremy Bentham’s utilitarianism.⁵⁶ Utilitarianism involves determining whether the overall happiness of a society is increased through a given act or event, which must promote equality, security, subsistence, and abundance.⁵⁷ Ziff writes that Bentham “argue[d] that wealth was a measure of happiness. People have acquisitive needs that must be satisfied to achieve happiness, and those needs can best be achieved in a society that provides a measure of security for property holdings. That, in turn, means that the legal protection of property is essential.” As such, “any given rule or course of conduct could potentially prove beneficial, even if it might lead to extreme suffering for some.”⁵⁸ But given the consequences of this—slavery of some, for instance, might be beneficial for many—some choices need to be made between acceptable and unacceptable forms of happiness.⁵⁹ And, more importantly, it is certainly possible that private property may just as easily lead to unhappiness, and so, “happiness as a measure of welfare or utility raises at least as many questions as it answers.”⁶⁰ There is no assurance that any one individual will have greater happiness as a result of

54. The most comprehensive study is Christopher Pierson’s monumental three-volume study. PIERSON, *supra* note 50; CHRISTOPHER PIERSON, JUST PROPERTY VOLUME TWO: ENLIGHTENMENT, REVOLUTION, AND HISTORY (2016); CHRISTOPHER PIERSON, JUST PROPERTY VOLUME THREE: PROPERTY IN AN AGE OF IDEOLOGIES (2020).

55. See BRUCE ZIFF, PRINCIPLES OF PROPERTY LAW 11-57 (7th ed., 2018).

56. See *id.* at 15-9. See generally BENTHAM, *supra* note 34; JEREMY BENTHAM, THE THEORY OF LEGISLATION (2004).

57. See ZIFF, *supra* note 54, at 15.

58. *Id.*

59. See *id.* at 16.

60. *Id.* at 17.

private property, and there is, in any case, no means that exists for calculating those outcomes.⁶¹

Related to the promotion of happiness, private property may also promote human flourishing.⁶² Associated historically with GWF Hegel,⁶³ Margaret Jane Radin offers a modern account.⁶⁴ Flourishing—that private property not only makes us happier, but that it makes us better—may occur at either the individual or the societal level.⁶⁵ In relation to the former, Ziff writes that “Hegel saw property as a dominant factor in the transformation of people from abstract entities into moral and political beings distinct from others. A kind of transformation results from projecting one’s will into an external object.”⁶⁶ At the individual level, then, “people often view objects as special because they are spiritual, memory-laden, rare, mysterious, or for some other reasons worth treasuring.”⁶⁷ At the societal level, when its “rights are present and robust...property promotes virtuous and well-functioning communities...the total is greater than the sum of each atomistic part.”⁶⁸ But as a justification, Ziff writes that this “tells us as much about the benefits of ownership as it does about the deprivations resulting from poverty and homelessness as causes of unhappiness.”⁶⁹ And while modern juristic approaches to property have seized upon personhood as integral to property—in copyright law, for instance⁷⁰—property may not be an enriching experience for all—promoting avarice, selfishness, quest for power, and eroding democracy through imbalances of power effected through the allocation of resources using the concept of private property.⁷¹

In the case of the Moon, we must ask ourselves: is the great increase in wealth that a very few will enjoy through projecting their will in the exploitation of its resources sufficient to justify allowing private property in those resources? True, one might argue that the happiness or flourishing of many more people here on Earth might be fostered by allowing that great wealth to flow to a very few. Increased access to the technology that increasingly depends upon rare Earth metals, for instance, might increase

61. *See id.* at 17-8.

62. *See id.* at 19-26.

63. *See generally* G. W. F. HEGEL, *PHILOSOPHY OF RIGHT* (T. M. Knox trans., 1952).

64. *See generally* Margaret Jane Radin, *Property and Personhood*, 34 *STAN. L. REV.* 957 (1982).

65. *See* ZIFF, *supra* note 54, at 19-23.

66. *Id.* at 19 (citation omitted).

67. *Id.* at 20 (citation omitted).

68. *Id.* at 22 (citation omitted).

69. *Id.* at 23 (citation omitted).

70. *See id.* at 25-6.

71. *See id.* at 23-5.

overall human happiness and allow people to flourish.⁷² But is there any discernible evidence in the course of human history that the exploitation of natural resources on Earth has increased human happiness? The use of fossil fuels, for instance, allowed for great advances in the last two hundred years of human history,⁷³ but today we face the spectre of climate change as a result.⁷⁴ There is nothing in the exploitation of the Moon and its resources that definitively suggests that doing so will increase overall human happiness. In fact, many argue, that the very opposite might be true.⁷⁵ Moreover, is there anything in the resources available on the Moon intrinsically spiritual, memory-laden, rare, or mysterious, such that they should be treasured? No. They are simply commodities from which value can be extracted. There is nothing in that that would suggest we should treat those resources as enhancing the human flourishing of those who will exploit them. Indeed, it seems that everything Ziff said follows from private property—avarice, selfishness, quest for power, and the erosion of democracy through imbalances of power⁷⁶—are already showing in the rush to the Moon, let alone once that gold rush is open to any and all comers.

The third, and perhaps that to which appeal is most frequently made among the justificatory theories, is the claim that private property promotes individual freedom and autonomy.⁷⁷ At the core of liberalism stands the fundamental freedom that one ought to be able to choose one's own life project. Private property constitutes one of the vehicles that facilitates that freedom of choice both in pursuing a life project and in gathering the resources necessary to fulfil that initial choice. Indeed, as Ziff writes, "some have argued that property is (or should be) the guarantor of every other basic freedom. Without property, one might argue, the ability to participate in democracy, to exercise free speech, and so forth, is diminished."⁷⁸ Thus, on the basis of this justificatory theory, "property performs the function of promoting independence, dignity, and pluralism."⁷⁹ Still, building upon Morris Cohen's argument that private property represents a grant of sovereignty conferred upon the individual

72. *The Moon as a source of rare-earth metals*, UNIVERSE SPACE TECH (August 17, 2022), <https://perma.cc/BW6R-8A7V>.

73. See generally DANIEL YERGIN, *THE PRIZE: THE EPIC QUEST FOR OIL, MONEY & POWER* (2009).

74. See generally MIKE HULME, *CLIMATE CHANGE* (2021).

75. See GRAYLING, *supra* note 2; WIENERSMITH, *supra* note 2.

76. See ZIFF, *supra* note 54, at 23-5.

77. See *id.* at 26-32.

78. *Id.* at 27.

79. *Id.* (citation omitted).

by the state,⁸⁰ whatever freedom it allows us exists as a result of the state's acquiescence in that position, not because of anything intrinsic to property itself. In fact, "there is nothing in the notion of property itself that prevents the state from abolishing all rights of ownership."⁸¹

Two significant difficulties emerge, then, for the "private property as freedom" claim. First, if private property's power is one that the state allows, as Cohen argued, then "there is a dark side to this analysis...property's claim to enhancing democracy is diminished to the extent that it confers advantages on a wealthy oligarchy [and]...large and wealthy firms [corporations]...Private property, far from enhancing democratic institutions, can skew them in favour of the wealthy, thereby undermining equal participation in the political process."⁸² Cohen, of course, made this very clear.⁸³ And, second, securing freedom—which results in unequal allocations of both power and the resources subject to it—requires the power of the state to ensure its policing and enforcement. Far from being a merely private matter, private property is very much a public law matter. It "does not just deprive some people of positive freedom. Negative freedom is lost as well, because to the extent that owners may expel non-owners, those others are not free (in the negative sense) to go wherever they might wish. The protective fence of property law keeps them out."⁸⁴

All of this we can see in the race to exploit the Moon's resources. Far from enhancing democratic processes, the allocation of private property to a very few people will ensure that not only positive freedom is lost by the great many, but negative freedom as well. The "property as freedom" claim, when applied to the Moon, might achieve some freedom for a very few, but as with the personhood and flourishing claims, to the extent that it does, it will ensure that a great many more have vastly fewer freedoms than the few who gain.

Law and economics' analysis of private property gives rise to the fourth claim: that it enhances material wealth through the efficient allocation of resources in response to market forces.⁸⁵ This justification posits that "the principles governing property will tend toward wealth

80. See generally Morris R. Cohen, *Property and Sovereignty*, 13 CORNELL L. REV. 8 (1927).

81. ZIFF, *supra* note 54, at 27.

82. *Id.* at 29.

83. See Cohen, *supra* note 78.

84. ZIFF, *supra* note 54, at 31-2.

85. See *id.* at 32-44.

maximization...if several targets are pursued”⁸⁶: exclusivity of ownership, transferability of entitlements, and universality of property (in other words, that most things are capable of being the subject-matter of property).⁸⁷ In short, the rudiments of a market economy, made possible by private property, are necessary for the maximization of wealth.⁸⁸ Garrett Hardin’s “The Tragedy of the Commons” serves as the primary rationale for this economic approach, with the argument that common use degrades a commons through the incentive to use the resource, whatever it is, before others do, and the disincentive to limit that use in the interests of the long-term viability of the commons.⁸⁹ In the language of law and economics, once all users hold private property in the common resource, this will “control (or capture) both the benefits and burdens of exploitation.”⁹⁰

But problems emerge in the attempt to justify private property with claims of economic efficiency. While the theory seems persuasive, the evidence in the empirical world does not bear it out. Many more costs of running a government-backed system of property, with all that entails, are incurred.⁹¹ Moreover, excessive privatisation and fragmentation of control over a resource can lead to a second tragedy: that of the anticommons. In this form, the tragedy involves so many holders of rights of exclusion that no one owner can effectively control the resource.⁹² To this, Ziff adds four problems with the economic efficiency claim: (1) that no benchmark exists against which to assess claims of efficiency, (2) that it is not clear that all people are rational wealth maximisers, (3) that there may be some cases in which a system does not want to treat a resource as a form of property, and (4) even if all resources were equitably distributed in the first instance, that would not survive subsequent transactions, which would likely create imbalances in wealth.⁹³ Law tends not to impose a “ceiling on the amount of wealth one can amass under the efficiency rationale,”⁹⁴ which allows for vast inequity in the allocation of a resource over time, even if the initial allocation approximated equality.

86. *Id.* at 33.

87. *See id.*

88. *See id.* at 34.

89. *See generally* Garrett Hardin, *The Tragedy of the Commons*, 162 *SCIENCE* 1243 (1968).

90. ZIFF, *supra* note 54, at 35.

91. *See id.* at 35-40.

92. *See generally* Michael A. Heller, *The Tragedy of the Anticommons: Property in the Transition from Marx to Markets*, 111(3) *HARV. L. REV.* 621 (1998).

93. *See* Ziff, *supra* note 54, at 42-4.

94. *Id.* at 44.

And when it comes to the Moon, we see every one of the problems with economic efficiency as a justification for creating private property in its resources. Start with the government necessary for the enforcement of my property rights—the United Lunar Republic. In the Introduction, I noted that citizenship came along with the modest cost of purchasing an acre of Moon land. That modest cost? The acre of the Sea of Tranquility cost me \$36 USD, and it cost \$42.15 USD for the Taurus Mountains Property. It seems to me that the cost of running the United Lunar Republic, to protect against interference from the likes of SpaceX and its ilk, will be much more than will be possible with sales of lunar land at those low prices. Even if that difficulty could be overcome, how valuable, and how useful, will my one acre be, especially when I and others begin to further fragment our acres into smaller parcels, causing an anticommons? There is simply no way of knowing for, as Ziff notes, there is no benchmark against which to measure the economic efficiency either of the initial or, more to the point, the subsequent allocations of land. There is no clear indicator of what the market in Moon land will favour, and so no way of using that as a way of efficiently allocating its resources or of preventing an anticommons tragedy.

Notwithstanding all of the difficulties inherent in justification, private property may still, though, be just, or legitimate.⁹⁵ Various theories have been advanced over the course of liberalism’s reign for the justness of property. As we already know, the most prominent of these has been John Locke’s labour-desert theory, sometimes coupled with first occupancy: “people are justly entitled to those things over which they have laboured”⁹⁶ and which they have occupied or appropriated first.⁹⁷ Ziff points out the difficulty with this theory: “how can unilateral appropriation be considered just?”⁹⁸ The answer: it can’t. Consider my two acres—who, or what, decided, other than me, that I should have those two acres? How can that be a just allocation of those resources? And then consider what is really going to happen. Whatever private property I might have in my two acres will mean nothing once real nations, with real governments, arrive. But their allocations will be no more just than mine was. Rather, as Ziff puts it, “most people would think that those who appropriate items from an otherwise shared pool of goods would normally be accused of selfishness, not rewarded for their initiative.”⁹⁹ Labour, then, may not be supported on the basis of unilateral appropriation. Nor does the authoritative edict of a legitimate governmental authority—the United

95. *See id.* at 44-56.

96. *Id.* at 44.

97. *See id.* at 53-6.

98. *Id.* at 48.

99. *Id.* at 49.

Lunar Republic or any other government—do anything to obviate the injustice inherent in attaching the protection of private property to people who so act, for the simple reason that it allows for wealth maximization for a very few at the expense of great masses of others.¹⁰⁰

And, finally, plural claims may justify private property, combining the elements found in the first five claims.¹⁰¹ Ziff summarises these justifications as “the goodness claim: on balance, and taking into account all of the [existing justifications], private property is the optimal way to generate and allocate resources.”¹⁰² Stephen Munzer, for instance, offers a pluralist account of property organised around three principles: utility and efficiency, justice and equality, and labour and desert.¹⁰³ One could go on at length with an examination of each of the liberal justifications for property—as Christopher Pierson does in a monumental three-volume study of the justification of property¹⁰⁴—but, at the end of the day, all of those theories really amount to the same thing: a defence of the bald exercise of power and self-seekingness as concerns the allocation, use, and control of every good and resource on the planet or, as we are discussing in this article, off the planet. And that is really what the justification of private property is: a defence of the indefensible allocation, use, and control of resources, natural and manufactured, tangible and intangible, and a defence of the power and exercise of that control over everything that exists, which is held by a few at the expense of and over the interests of the many.

The truth is that private property cannot be justified, on Earth, or anywhere else.¹⁰⁵ And so, the quest to find that justification, the “Holy Grail” of property, goes on, seemingly endlessly.¹⁰⁶ But the more they try, the more it becomes apparent that theorists really have no defence of private property, for, as we have seen, it is hardly justifiable. The endless theories simply attempt to defend the indefensible. The consequences of the choices people make through private property demonstrate that it is difficult, if not impossible, to sustain private property in the face of what it allows us to do. And nothing about the Moon and its resources changes that logic.

100. *See id.* at 50-1.

101. *See id.* at 56-7.

102. *Id.* at 57.

103. *See generally* STEPHEN R. MUNZER, A THEORY OF PROPERTY (1990).

104. *See* PIERSON, *supra* note 53.

105. *See generally* Laura S. Underkuffler, *Essay in Honor of Greg Alexander: The Holy Grail of Progressive Property*, 29 CORNELL J.L. & PUB. POL’Y 717 (2020).

106. *See, e.g., id.* This source shows evidence of this endless quest.

IV. CONCLUDING REFLECTION: DON'T WORRY, IT WON'T MATTER ANYWAY

My thought experiment about private property in the Moon and its resources is really a way to demonstrate the absurdity of attempting to justify private property. As I have shown, it is difficult to justify private property in the Moon; it is equally difficult to justify it anywhere. But when has the impossibility of justifying private property ever stopped humanity from deploying it as a means of parcelling out every resource we could ever lay our hands upon? Never. And the simple, and sad, truth is that that is not about to change—not with all that wealth to be made from exploiting the riches of space. Is it very likely that the partisan self-interest that Grayling canvasses will be averted or avoided?¹⁰⁷ Of course not!

Not only is private property unjustifiable—it is an attempt to justify raw power and inequality in the allocation of resources—but it is also unavoidable. It is predicated on what Grayling calls the “law of history”: the observation “that the weight of empirical proof afforded by history...that it is more rather than less probable that if anything of economic significance is found in space, it will trigger competition, followed by the right that competition will lead to conflict. This is the nub of everything we know of the human story, almost to the point of being a law of history.”¹⁰⁸ Our concept of private property as absoluteness and limitlessness is unavoidable, too. It, too, is a component of the law of history.

So none of this will matter anyway when it comes to the Moon. Humanity will follow the law of history, and go resolutely on, dividing up the resources of space and the Moon, and Mars, and beyond, among those who can get there first and who can enforce the law of might makes right, justifications be damned. No, the difficulty of justification will never stand in the way of that progress. But perhaps, if for only a moment, this Article will give those who read it a moment's pause, to reflect, to consider whether this is right, whether it is just. And, having done that, having paused briefly, we will continue our march towards projecting and imposing the concept of private property upon all that we can see, all that we can touch, all that we can possess. No, concerns about justification for private property will not matter in the end. They never have.

107. See GRAYLING, *supra* note 2, at 115.

108. *Id.* at 108.