### NC

#### I negate.

#### First, we own ourselves – anything else justifies morally repugnant actions like slavery since otherwise other people can own us.

#### Second, self-ownership implies a right to the products of your labor inscribed in property rights.

John Locke (Philosopher; MA, Oxford, 1658). Two Treatises of Government. Awnsham Churchill: London. 1689. JDN. [https://press‑pubs.uchicago.edu/founders/documents/v1ch16s3.html](https://presspubs.uchicago.edu/founders/documents/v1ch16s3.html) //recut JS and bracketed for gender language

27. Though the Earth, and all inferior Creatures be common to all Men, yet every Man [person] has a Property in his own Person. This no Body has any Right to but himself. The Labour of his [their] Body, and the Work of his Hands, we may say, are properly [theirs] his. Whatsoever then [they] he removes out of the State that Nature hath provided, and left it in, he [they] hath mixed his Labour with, and joyned to it something that is his own, and thereby makes it [their] his Property. It being by him removed from the common state Nature placed it in, hath by this labour something annexed to it, that excludes the common right of other Men. For this Labour being the unquestionable Property of the Labourer, no [person] man but he can have a right to what that is once joyned to, at least where there is enough, and as good left in common for others. 28. He that is nourished by the Acorns he pickt up under an Oak, or the Apples he gathered from the Trees in the Wood, has certainly appropriated them to himself. No Body can deny but the nourishment is his. I ask then, When did they begin to be his? When he digested? Or when he eat? Or when he boiled? Or when he brought them home? Or when he pickt them up? And ’tis plain, if the first gathering made them not his, nothing else could. That labour put a distinction between them and common. That added something to them more than Nature, the common Mother of all, had done; and so they became his private right. And will any one say he had no right to those Acorns or Apples he thus appropriated, because he had not the consent of all Mankind to make them his? Was it a Robbery thus to assume to himself what belonged to all in Common? If such a consent as that was necessary, Man had starved, notwithstanding the Plenty God had given him. We see in Commons, which remain so by Compact, that ’tis the taking any part of what is common, and removing it out of the state Nature leaves it in, which begins the Property; without which the Common is of no use. And the taking of this or that part, does not depend on the express consent of all the Commoners. Thus the Grass my Horse has bit; the Turfs my Servant has cut; and the Ore I have digg’d in any place where I have a right to them in common with others, become my Property, without the assignation or consent of any body. The labour that was mine, removing them out of that common state they were in, hath fixed my Property in them.

#### Thus, the standard is consistency with libertarianism, or a system of respecting the property rights and freedom of others. Prefer this:

#### 1] Performativity – discourse presupposes self-ownership since its intrinsic purpose is to compel belief through persuasion rather than coercion– this means contestations of my framework in debate presuppose it.

#### 2] The seperateness of persons justifies a right to self-ownership and property that cannot be aggregated with the interests of others.

Narveson, Jan (2010). Property and rights. Social Philosophy and Policy 27 (1):101-134. JS

The idea of self ownership—that is, of a general right to liberty—is rooted in our particularity and our individuality. Persons are separate: one person’s purposes are not another’s; there is no necessary normative output from A’s interests to B’s. Consequently, when the pursuit of interests is to be curtailed by consideration of the interests of others, this will have to be due to aspects of interaction, specifically the impinging of some persons on others in such a way as to create a potential for cooperatively derived mutual benefit—or the reverse. This provides genuine reason, seen from each agent’s internal point of view, for restricting one’s own pursuit of benefit: the reason is simply that we stand to do better with such restrictions than without them, provided, of course, that others accept such restrictions as well. This abstract result seems to be viewed with alarm by many theorists, who apparently suppose that morals must require self-abnegatory altruism. The trouble with that, however, is that selves are the only beings with interests; they are, normatively speaking, all we have, and therefore, negating them means, on the face of it, abandoning the whole point of being someone in particular—as we all are, after all. If the point is generalized, then it raises the problem that if my self means nothing, why should anybody else’s mean something? If the satisfaction of some self doesn’t count, independently of who provided the sources of that satisfaction, then the point of altruism is as completely defeated as the initial selfinterest to be abnegated. Our individual persons and pursuits are what we have, and the general principle of liberty protects us in being the persons we are, doing what we want to do, and thus acquiring what we can and want to acquire, compatibly with the similar right of others.

#### 3] Viewing others as ends in themselves is a prerequisite for moral value – coercion treats others as a mere means for one’s own purposes.

Korsgaard ’83 (Christine M., “Two Distinctions in Goodness,” The Philosophical Review Vol. 92, No. 2 (Apr., 1983), pp. 169-195, JSTOR) OS

The argument shows how Kant's idea of justification works. It can be read as a kind of regress upon the conditions, starting from an important assumption. The assumption is that when a rational being makes a choice or undertakes an action, he or she supposes the object to be good, and its pursuit to be justified. At least, if there is a categorical imperative there must be objectively good ends, for then there are necessary actions and so necessary ends (G 45-46/427-428 and Doctrine of Virtue 43-44/384-385). In order for there to be any objectively good ends, however, there must be something that is unconditionally good and so can serve as a sufficient condition of their goodness. Kant considers what this might be: it cannot be an object of inclination, for those have only a conditional worth, "for if the inclinations and the needs founded on them did not exist, their object would be without worth" (G 46/428). It cannot be the inclinations themselves because a rational being would rather be free from them. Nor can it be external things, which serve only as means. So, Kant asserts, the unconditionally valuable thing must be "humanity" or "rational nature," which he defines as "the power set to an end" (G 56/437 and DV 51/392). Kant explains that regarding your existence as a rational being as an end in itself is a "subjective principle of human action." By this I understand him to mean that we must regard ourselves as capable of conferring value upon the objects of our choice, the ends that we set, because we must regard our ends as good. But since "every other rational being thinks of his existence by the same rational ground which holds also for myself' (G 47/429), we must regard others as capable of conferring value by reason of their rational choices and so also as ends in themselves. Treating another as an end in itself thus involves making that person's ends as far as possible your own (G 49/430). The ends that are chosen by any rational being, possessed of the humanity or rational nature that is fully realized in a good will, take on the status of objective goods. They are not intrinsically valuable, but they are objectively valuable in the sense that every rational being has a reason to promote or realize them. For this reason it is our duty to promote the happiness of others-the ends that they choose-and, in general, to make the highest good our end.

#### Impact Calc—

#### 1] The only moral wrongs are those that intentionally infringe upon their rights, not those that make property less available for others. For example, I don’t *wrong* *you* by buying the last carton of milk at the grocery store when you want milk, but it’s mere happening

#### 2] Moral responsibility is only possible via the standard – if we didn’t regard agents as free, then we can’t hold them culpable for immoral actions since there would be no possibility of them doing otherwise and being moral.

#### I defend the squo – now negate:

#### Liberal conception of property rights are egalitarian and good – space exploration only changes the location and not the nature of property claims, which makes private appropriation just.

Baca, Kurt Anderson Property Rights in Outer Space, 58 J. Air L. & Com. 1041 (1993) https://scholar.smu.edu/jalc/vol58/iss4/4 JS

The powers necessary to constitute an efficient system of property rights on Earth have been found, by deduction from first principles by political philosophers influential in the development of the Western institutions and from history and practice in the courts, to be the power to exclude, to use, and to dispose. 98 The resulting system is also inherently equitable as it benefits society as a whole and as it protects investments and expectations. This system would remain equitable so long as the initial allocation of any new resource was, and is, not based on mere usurpation of unclaimed property, but is based on investment in the property that adds to its value. 99 This system of property rights relies on the provision of powers to the holder of the property. The source of the power is ultimately in the state that enforces the liabilities of parties corresponding to the powers of owners: the liability to exclusion, the liability for interference with use, and the liability to respect contracts and to refrain from hindering disposition. °0 This implies that sovereign power is essential to any functioning system of property rights, and in the absence of a general sovereign body, sovereignty is to be found in the nation-state. How does the extension of man's activities into space and onto the celestial bodies change the basic necessities of an efficient and equitable property rights system? The movement of activities into space affects only the place of activities. The nature of those activities and of the actor remain unchanged. The nature of efficiency and equity are likewise unchanged, and the need for certain securities and guarantees to foster productive activity by man is unchanged. The same property rights system that is most beneficial on Earth will be most beneficial on the celestial bodies.

#### There is no such thing as unjust initial acquisition – an injustice requires one whose right has been violated, which cannot be the case if a resource is unclaimed.

Feser, E. (2005). THERE IS NO SUCH THING AS AN UNJUST INITIAL ACQUISITION. Social Philosophy and Policy, 22(1), 56–80. doi:10.1017/s0265052505041038 JS

The reason there is no such thing as an unjust initial acquisition of resources is that there is no such thing as either a just or an unjust initial acquisition of resources. The concept of justice, that is to say, simply does not apply to initial acquisition. It applies only after initial acquisition has already taken place. In particular, it applies only to transfers of property (and derivatively, to the rectification of injustices in transfer). This, it seems to me, is a clear implication of the assumption (rightly) made by Nozick that external resources are initially unowned. Consider the following example. Suppose an individual A seeks to acquire some previously unowned resource R. For it to be the case that A commits an injustice in acquiring R, it would also have to be the case that there is some individual B (or perhaps a group of individuals) against whom A commits the injustice. But for B to have been wronged by A’s acquisition of R, B would have to have had a rightful claim over R, a right to R. By hypothesis, however, B did not have a right to R, because no one had a right to it—it was unowned, after all. So B was not wronged and could not have been. In fact, the very first person who could conceivably be wronged by anyone’s use of R would be, not B, but A himself, since A is the first one to own R. Such a wrong would in the nature of the case be an injustice in transfer—in unjustly taking from A what is rightfully his—not in initial acquisition. The same thing, by extension, will be true of all unowned resources: it is only after someone has initially acquired them that anyone could unjustly come to possess them, via unjust transfer. It is impossible, then, for there to be any injustices in initial acquisition.

#### That negates – space is not under ownership by any state now, which proves that acquisition cannot be unjust

### Case

#### Induction fails.

Henderson, Leah, "The Problem of Induction", The Stanford Encyclopedia of Philosophy (Spring 2020 Edition), Edward N. Zalta (ed.), URL = <https://plato.stanford.edu/archives/spr2020/entries/induction-problem/>. JS  
Now as concerns the argument, its conclusion is that in induction (causal inference) experience does not produce the idea of an effect from an impression of its cause by means of the understanding or reason, but by the imagination, by “a certain association and relation of perceptions.” The center of the argument is a dilemma: If inductive conclusions were produced by the understanding, inductive reasoning would be based upon the premise that nature is uniform; that instances of which we have had no experience, must resemble those of which we have had experience, and that the course of nature continues always uniformly the same. (THN, 89)

And were this premise to be established by reasoning, that reasoning would be either deductive or probabilistic (i.e., causal). The principle can't be proved deductively, for whatever can be proved deductively is a necessary truth, and the principle is not necessary; its antecedent is consistent with the denial of its consequent. Nor can the principle be proved by causal reasoning, for it is presupposed by all such reasoning and any such proof would be a petitio principii.

#### Capitalism is sustainable – their environment scenarios are empirically denied and the transition crushes value to life.

Pinker 18 [Steven, Johnstone Family Professor in the Department of Psychology at Harvard University. February 2018. “Enlightment Now: The Case for Reason, Science, Humanism, and Progress.” Chapter 10: The Environment, Viking, Accessed through the Wake Forest Library] AMarb RC/JCH-PF

Ecomodernism begins with the realization that some degree of pollution is an inescapable consequence of the Second Law of Thermodynamics. When people use energy to create a zone of structure in their bodies and homes, they must increase entropy elsewhere in the environment in the form of waste, pollution, and other forms of disorder. The human species has always been ingenious at doing this—that’s what differentiates us from other mammals—and it has never lived in harmony with the environment. When native peoples first set foot in an ecosystem, they typically hunted large animals to extinction, and often burned and cleared vast swaths of forest.4 A dirty secret of the conservation movement is that wilderness preserves are set up only after indigenous peoples have been decimated or forcibly removed from them, including the national parks in the United States and the Serengeti in East Africa.5 As the environmental historian William Cronon writes, “wilderness” is not a pristine sanctuary; it is itself a product of civilization. When humans took up farming, they became more disruptive still. According to the paleoclimatologist William Ruddiman, the adoption of wet rice cultivation in Asia some five thousand years ago may have released so much methane into the atmosphere from rotting vegetation as to have changed the climate. “A good case can be made,” he suggests, that “the people in the Iron Age and even the late Stone Age had a much greater per-capita impact on the earth’s landscape than the average modern-day person.”6 And as Brand has pointed out (chapter 7), “natural farming” is a contradiction in terms. Whenever he hears the words natural food, he is tempted to rail: No product of agriculture is the slightest bit natural to an ecologist! You take a nice complex ecosystem, chop it into rectangles, clear it to the ground, and hammer it into perpetual early succession! You bust its sod, flatten it flat, and drench it with vast quantities of constant water! Then you populate it with uniform monocrops of profoundly damaged plants incapable of living on their own! Every food plant is a pathetic narrow specialist in one skill, inbred for thousands of years to a state of genetic idiocy! Those plants are so fragile, they had to domesticate humans just to take endless care of them!7 A second realization of the ecomodernist movement is that industrialization has been good for humanity. It has fed billions, doubled life spans, slashed extreme poverty, and, by replacing muscle with machinery, made it easier to end slavery, emancipate women, and educate children (chapters 7, 15, and 17). It has allowed people to read at night, live where they want, stay warm in winter, see the world, and multiply human contact. Any costs in pollution and habitat loss have to be weighed against these gifts. As the economist Robert Frank has put it, there is an optimal amount of pollution in the environment, just as there is an optimal amount of dirt in your house. Cleaner is better, but not at the expense of everything else in life. The third premise is that the tradeoff that pits human well-being against environmental damage can be renegotiated by technology. How to enjoy more calories, lumens, BTUs, bits, and miles with less pollution and land is itself a technological problem, and one that the world is increasingly solving. Economists speak of the environmental Kuznets curve, a counterpart to the Ushaped arc for inequality as a function of economic growth. As countries first develop, they prioritize growth over environmental purity. But as they get richer, their thoughts turn to the environment.9 If people can afford electricity only at the cost of some smog, they’ll live with the smog, but when they can afford both electricity and clean air, they’ll spring for the clean air. This can happen all the faster as technology makes cars and factories and power plants cleaner and thus makes clean air more affordable. Economic growth bends the environmental Kuznets curve by advances not just in technology but in values. Some environmental concerns are entirely practical: people complain about smog in their city, or green space getting paved over. But other concerns are more spiritual. The fate of the black rhinoceros and the well-being of our descendants in the year 2525 are significant moral concerns, but worrying about them now is something of a luxury. As societies get richer and people no longer think about putting food on the table or a roof over their heads, their values climb a hierarchy of needs, and the scope of their concern expands in space and time. Ronald Inglehart and Christian Welzel, using data from the World Values Survey, have found that people with stronger emancipative values—tolerance, equality, freedom of thought and speech— which tend to go with affluence and education, are also more likely to recycle and to pressure governments and businesses into protecting the environment. Ecopessimists commonly dismiss this entire way of thinking as the “faith that technology will save us.” In fact it is a skepticism that the status quo will doom us—that knowledge will be frozen in its current state and people will robotically persist in their current behavior regardless of circumstances. Indeed, a naïve faith in stasis has repeatedly led to prophecies of environmental doomsdays that never happened.

#### Responds to their decoupling doesn’t work card – Pinker admits that negative energy use is impossible, so it’s not a question of a perfectly ecological situation but a question of the most efficient system – that’s capitalism.

#### Capitalism solves war on a massive scale – it creates lock-in mechanisms that bind countries together and dampen conflict – best studies.

Dafoe and Kelsey ‘14

(Allan & Nina; assistant professor in political science at Yale & research associate in international economics at Berkeley; Journal of Peace Research, “Observing the capitalist peace: Examining market-mediated signaling and other mechanisms,” http://jpr.sagepub.com.proxy.lib.umich.edu/content/51/5/619.full)

Countries with liberal political and economic systems rarely use military force against each other. This anomalous peace has been most prominently attributed to the ‘democratic peace’ – the apparent tendency for democratic countries to avoid militarized conflict with each other (Maoz & Russett, 1993; Ray, 1995; Dafoe, Oneal & Russett, 2013). More recently, however, scholars have proposed that the liberal peace could be partly (Russett & Oneal, 2001) or primarily (Gartzke, 2007; but see Dafoe, 2011) attributed to liberal economic factors, such as commercial and financial interdependence. In particular, Erik Gartzke, Quan Li & Charles Boehmer (2001), henceforth referred to as GLB, have demonstrated that measures of capital openness have a substantial and statistically significant association with peaceful dyadic relations. Gartzke (2007) confirms that this association is robust to a large variety of model specifications. To explain this correlation, GLB propose that countries with open capital markets are more able to credibly signal their resolve through the bearing of greater economic costs prior to the outbreak of militarized conflict. This explanation is novel and plausible, and resonates with the rationalist view of asymmetric information as a cause of conflict (Fearon, 1995). Moreover, it implies clear testable predictions on evidential domains different from those examined by GLB. In this article we exploit this opportunity by constructing a confirmatory test of GLB’s theory of market-mediated signaling. We first develop an innovative quantitative case selection technique to identify crucial cases where the mechanism of market-mediated signaling should be most easily observed. Specifically, we employ quantitative data and the statistical models used to support the theory we are probing to create an impartial and transparentmeans of selecting cases in which the theory – as specified by the theory’s creators –makes its most confident predictions.We implement three different case selection rules to select cases that optimize on two criteria: (1) maximizing the inferential leverage of our cases, and (2) minimizing selection bias. We examine these cases for a necessary implication of market-mediated signaling: that key participants drew a connection between conflictual events and adverse market movements. Such an inference is a necessary step in the process by which market-mediated costs can signal resolve. For evidence of this we examine news media, government documents, memoirs, historical works, and other sources. We additionally examine other sources, such as market data, for evidence that economic costs were caused by escalatory events. Based on this analysis, we assess the evidence for GLB’s theory of market mediated costly signaling. Our article then considers a more complex heterogeneous effects version of market-mediated signaling in which unspecified scope conditions are required for the mechanism to operate. Our design has the feature of selecting cases in which scope conditions are most likely to be absent. This allows us to perform an exploratory analysis of these cases, looking for possible scope conditions. We also consider alternative potential mechanisms. Our cases are reviewed in more detail in the online appendix.1 To summarize our results, our confirmatory test finds that while market-mediated signaling may be operative in the most serious disputes, it was largely absent in the less serious disputes that characterize most of the sample of militarized interstate disputes (MIDs). This suggests either that other mechanisms account for the correlation between capital openness and peace, or that the scope conditions for market-mediated signaling are restrictive. Of the signals that we observed, strategic market-mediated signals were relatively more important than automatic market-mediated signals in the most serious conflicts. We identify a number of potential scope conditions, such as that (1) the conflict must be driven by bargaining failure arising from uncertainty and (2) the economic costs need to escalate gradually and need to be substantial, but less than the expected military costs of conflict. Finally, there were a number of other explanations that seemed present in the cases we examined and could account for the capitalist peace: capital openness is associated with greater anticipated economic costs of conflict; capital openness leads third parties to have a greater stake in the conflict and therefore be more willing to intervene; a dyadic acceptance of the status quo could promote both peace and capital openness; and countries seeking to institutionalize a regional peace might instrumentally harness the pacifying effects of liberal markets. The correlation: Open capital markets and peace The empirical puzzle at the core of this article is the significant and robust correlation noted by GLB between high levels of capital openness in both members of a dyad and the infrequent incidence of militarized interstate disputes (MIDs) and wars between the members of this dyad (Gartzke, Li & Boehmer, 2001). The index of capital openness (CAPOPEN) is intended to capture the ‘difficulty states face in seeking to impose restrictions on capital flows (the degree of lost policy autonomy due to globalization)’ (Gartzke & Li, 2003: 575). CAPOPEN is constructed from data drawn from the widely used IMF’s Annual Reports on Exchange Arrangements and Exchange Controls; it is a combination of eight binary variables that measure different types of government restrictions on capital and currency flow (Gartzke, Li & Boehmer, 2001: 407). The measure of CAPOPEN starts in 1966 and is defined for many countries (increasingly more over time). Most of the countries that do not have a measure of CAPOPEN are communist.2 GLB implement this variable in a dyadic framework by creating a new variable, CAPOPENL, which is the smaller of the two dyadic values of CAPOPEN. This operationalization is sometimes referred to as the ‘weak-link’ specification since the functional form is consonant with a model of war in which the ‘weakest link’ in a dyad determines the probability of war. CAPOPENL has a negative monotonic association with the incidence of MIDs, fatal MIDs, and wars (see Figure 1).3 The strength of the estimated empirical association between peace and CAPOPENL, using a modified version of the dataset and model from Gartzke (2007), is comparable to that between peace and, respectively, joint democracy, log of distance, or the GDP of a contiguous dyad (Gartzke, 2007: 179; Gartzke, Li & Boehmer, 2001: 412). In summary, CAPOPENL seems to be an important and robust correlate of peace. The question of why specifically this correlation exists, however, remains to be answered. The mechanism: Market-mediated signaling? Gartzke, Li & Boehmer (2001) argue that the classic liberal account for the pacific effect of economic interdependence – that interdependence increases the expected costs of war – is not consistent with the bargaining theory of war (see also Morrow, 1999). GLB argue that ‘conventional descriptions of interdependence see war as less likely because states face additional opportunity costs for fighting. The problem with such an account is that it ignores incentives to capitalize on an opponent’s reticence to fight’ (Gartzke, Li & Boehmer, 2001: 400.)4 Instead, GLB (see also Gartzke, 2003; Gartzke & Li, 2003) argue that financial interdependence could promote peace by facilitating the sending of costly signals. As the probability of militarized conflict increases, states incur a variety of automatic and strategically imposed economic costs as a consequence of escalation toward conflict. Those states that persist in a dispute despite these costs will reveal their willingness to tolerate them, and hence signal resolve. The greater the degree of economic interdependence, the more a resolved country could demonstrate its willingness to suffer costs ex ante to militarized conflict. Gartzke, Li & Boehmer’s mechanism implies a commonly perceived costly signal before militarized conflict breaks out or escalates: if market-mediated signaling is to account for the correlation between CAPOPENL and the absence of MIDs, then visible market-mediated costs should occur prior to or during periods of real or potential conflict (Gartzke, Li & Boehmer, 2001). Thus, the proposed mechanism should leave many visible footprints in the historical record. This theory predicts that these visible signals must arise in any escalating conflict, involving countries with high capital openness, in which this mechanism is operative Clarifying the signaling mechanism Gartzke, Li & Boehmer’s signaling mechanism is mostly conceptualized on an abstract, game-theoretic level (Gartzke, Li & Boehmer, 2001). In order to elucidate the types of observations that could inform this theory’s validity, we discuss with greater specificity the possible ways in which such signaling might occur. A conceptual classification of costly signals The term signaling connotes an intentional communicative act by one party directed towards another. Because the term signaling thus suggests a willful act, and a signal of resolve is only credible if it is costly, scholars have sometimes concluded that states involved in bargaining under incomplete information could advance their interests by imposing costs on themselves and thereby signaling their resolve (e.g. Lektzian & Sprecher, 2007). However, the game-theoretic concept of signaling refers more generally to any situation in which an actor’s behavior reveals information about her private information. In fact, states frequently adopt sanctions with low costs to themselves and high costs to their rivals because doing so is often a rational bargaining tactic on other grounds: they are trying to coerce their rival to concede the issue. Bargaining encounters of this type can be conceptualized as a type of war-of-attrition game in which each actor attempts to coerce the other through the imposition of escalating costs. Such encounters also provide the opportunity for signaling: when states resist the costs imposed by their rivals, they ‘signal’ their resolve. If at some point one party perceives the conflict to have become too costly and steps back, that party ‘signals’ a lack of resolve. Thus, this kind of signaling arises as a by-product of another’s coercive attempts. In other words, costly signals come in two forms: self-inflicted (information about a leader arising from a leader’s intentional or incidental infliction of costs on himself) or imposed (information about a leader that arises from a leader’s response to a rival’s imposition of costs). Additionally, costs may arise as an automatic byproduct of escalation towards military conflict or may be a tool of statecraft that is strategically employed during a conflict. The automatic mechanism stipulates that as the probability of conflict increases, various economic assets will lose value due to the risk of conflict and investor flight. However, the occurrence of these costs may also be intentional outcomes of specific escalatory decisions of the states, as in the case of deliberate sanctions; in this case they are strategic. Finally, at a practical level, we identify three different potential kinds of economic costs of militarized conflict that may be mediated by open capital markets: capital costs from political risk, monetary coercion, and business sanctions.

#### Growth is a prerequisite to getting off the rock

Ashworth ‘10

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There are thus two plausible end-points to our current phase of growth: collapse back to a pre-industrial level (the supernova burns out), or continued growth taking us onto a sustainable level of technological maturity (the baby grows up). The difference between these two future courses is immense. In terms of population, the carrying capacity of Earth for human populations is greater than the current 6 or 7 billion, but not very much so, perhaps a few tens of billions (depending on the technologies available). Any retreat to medieval levels of technology would cut this figure by a factor of ten, probably down to less than a billion. But the carrying capacity of the Solar System is at least a million times greater than that of a high-tech Earth, and that of the Galaxy at least a billion times greater again than that of the Solar System. The present-day situation of human society is therefore that it finds itself at a cross-roads of unparalleled significance. If growth is not maintained, then, unless they can reignite that growth phase, our descendants are forever restricted to planet Earth. But must they necessarily fall back to a medieval or even more primitive level? Could industrial civilisation survive for a while in a zero-growth phase at around its present-day level of development, and if so, for how long? In any discussion of mankind and space, this is a key question which must be addressed. Certainly, pre-industrial civilisations have survived with little change over millennial timespans, but to what extent does industrial technology change this picture? And what about million-year timespans? The only types of industrial civilisation we have observed so far have been that based on capitalist economics, and that based on socialism, in which a political ideology takes over the role of capital. Capitalist societies would seem to be expansionary in their very nature: they are defined by the self-multiplying power of capital. But could a socialist society, one with a suitable ideology which was sufficiently severely imposed, preserve zero growth indefinitely? I think not, because societies evolve in an unpredictable manner. Governments which have tried to maintain control in, say, Tokugawa Japan (1603-1868) or Soviet Russia (1917-1989) have failed in their goals of stability (Japan) or planned growth (Russia), and modern liberal democracy works by limiting its ambitions and ceding much power to the economy at large. Even a global dictatorship, which unlike those two historical examples would by definition not face competition from abroad, would, I think, be unable to control all the disruptive political, technological and economic forces emerging unpredictably worldwide over centuries and millennia. The result would then be either the breakout of a new phase of growth, or decline and collapse. In view of the likelihood of long-term adverse climate change (whether triggered by industrial pollution, or asteroid impact, or an outbreak of super-vulcanism, or the return of ice-age conditions, or solar variations), and in addition the persistent threat of global high-tech conflict (whether spreading destruction by nuclear weapons, or computer viruses, or genetically engineered organisms, or microscopic or macroscopic robots), decline would be the more plausible outcome. Nevertheless, the question as to how long a global zero-growth industrial civilisation could survive in a stable state on one planet is an interesting one, though not one that is likely to attract unbiased analysis by modern sociology. What, however, if growth is maintained? Surely Earth will become overburdened and that growth will lead to environmental and social collapse? The point here is that, while the resources of Earth are limited, those of the Solar System are very much greater. Growth in population sizes and in the usage of energy and raw materials may therefore continue for a number of centuries into the future, provided that two conditions are met: \* Material growth on Earth levels off; \* Material growth in space and on other planets takes over the upward trend. Is this not equivalent to saying that Earth must settle down with a zero-growth society before space development begins? No, so long as the terrestrial and extraterrestrial economies are linked. While this remains true, it will be possible for investors on Earth to invest capital in extraterrestrial development, and receive dividends back from that development. While most Earth-dwelling people will remain on the mother planet, there will also be flows of people, goods and ideas between Earth and her colonies, which must also have a profound economic effect. A net inflow of value to Earth is in any case necessary in order that terrestrial investment in outer space does not merely produce inflation in the home economy. But that inflow need not be of material goods, and is more likely to consist of energy (solar power delivered on microwaves or lasers) and information (software and product development). But surely ultimately the limits of the Solar System will be reached, and the interplanetary civilisation have to settle down as a zero-growth society? Yes, granted. But this differs from a zero-growth planet Earth due to the immense size of the Solar System, which is larger than Earth by between four and six orders of magnitude, depending how far out one wants to go – to the distance of Mars, say, or to the Oort comet cloud far beyond Pluto. An interplanetary industrial civilisation is secure for the long term in a way that a monoplanetary one is not, because it is too large to form a unity, either politically or environmentally, and because it is forced to adapt to a wide range of hostile environmental conditions. It will therefore be secure against any conceivable environmental or military disaster, because such a disaster can only affect a single planet, or at most a limited region of the system. Climate change or world war on Earth has no effect on Mars, and vice versa. And with the majority of the population in orbiting artificial space colonies, even a major change in solar luminosity could be tolerated (though such a change is not expected to have a noticeable effect for hundreds of millions of years yet). With interplanetary civilisation, the social system as a whole can tolerate decline and collapse in particular locations, because they can then be recolonised from outside. Once humanity achieves interstellar status, this security factor is clearly vastly enhanced. However, in order for interplanetary growth to occur in the first place, an economic mechanism must be in place to drive it. The most suitable economic mechanism that has been demonstrated so far is capitalism. Its need for continuous expansion makes it highly appropriate as an economic system for a society colonising its local planetary system.

#### Extinction

Pelton ‘17

former Dean and Chairman of the Board of Trustees of the International Space University, Founder of the Arthur C. Clarke Foundation and the founding President of the Society of Satellite Professionals International, serves on the Executive Board of the International Association for the Advancement of Space Safety, Director Emeritus of the Space and Advanced Communications Research Institute (SACRI) at George Washington University [Joseph N. Pelton, 2017, Chapter 1: Why This Gold Rush Is Different in *The New Gold Rush The Riches of Space Beckon!*, pgs 1-2, Springer, DOI: 10.1007/978-3-319-39273-8] AMarb

What will we do when Earth’s resources are used up by humanity? The world is now hugely over populated, with billions and billions crammed into our overcrowded cities. By 2050, we may be 9 billion strong, and by 2100 well over 11 billion people on Planet Earth. Some at the United Nations say we might even be an amazing 12 billion crawling around this small globe. And over 80 % of us will be living in congested cities. These cities will be ever more vulnerable to terrorist attack, natural disaster, and other plights that come with overcrowding and a dearth of jobs that will be fueled by rapid automation and the rise of artificial intelligence across the global economy. We are already rapidly running out of water and minerals. Climate change is threatening our very existence. Political leaders and even the Pope have cautioned us against inaction. Perhaps the naysayers are right. All humanity is at tremendous risk. Is there no hope for the future? This book is about hope. We think that there is literally heavenly hope for humanity. But we are not talking here about divine intervention. We are envisioning a new space economy that recognizes that there is more water in the skies that all our oceans. There is a new wealth of natural resources and clean energy in the reaches of outer space—more than most of us could ever dream possible. There are those that say why waste money on outer space when we have severe problems here at home? Going into space is not a waste of money. It is our future. It is our hope for new jobs and resources. The great challenge of our times is to reverse public thinking to see space not as a resource drain but as the doorway to opportunity. The new space frontier can literally open up a “gold rush in the skies.” In brief, we think there is new hope for humanity. We see a new a pathway to the future via new ventures in space. For too long, space programs have been seen as a money pit. In the process, we have overlooked the great abundance available to us in the skies above. It is important to recognize there is already the beginning of a new gold rush in space—a pathway to astral abundance. “New Space” is a term increasingly used to describe radical new commercial space initiatives—many of which have come from Silicon Valley and often with backing from the group of entrepreneurs known popularly as the “space billionaires.” New space is revolutionizing the space industry with lower cost space transportation and space systems that represent significant cost savings and new technological breakthroughs. “New Commercial Space” and the “New Space Economy” represent more than a new way of looking at outer space. These new pathways to the stars could prove vital to human survival.