

# The Myth of scarcity and its threats to human society

Andrew Kemendo

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The Quaternary Megafauna Extinction caused humans to develop an existential scarcity *myth* that serves as a founding cultural assumption, biasing all Historical, Economic and Political thought. This myth, based on a temporary reality of pervasive scarcity from 10,000 BC - 2000 AD, became embedded in prehistoric storytelling so thoroughly that humanity favors recent social structures of hierarchy, competition & hoarding over traditional human social structures of community, cooperation & sharing. This claim is composed of five propositions:

1. Until the Quaternary Megafauna Extinction, humans had never faced pervasive resource pressure for necessity goods.
2. Competition and resource hoarding is a beneficial in-group adaptation over cooperation in populations experiencing resource pressures.
3. Economic, Social and Political thought since the Quaternary Megafauna Extinction, assumes inescapable scarcity as a fundamental truth, and assumes in-group resource hoarding behaviors are perpetually adaptive.
4. Humanity has been post-scarcity of necessity goods at a global production level since at least the year 2000.
5. In the current post-scarcity environment, competition and resource hoarding become existentially detrimental to all populations, accelerating the destruction of social and community trust

## The First Proposition:

Groundbreaking Anthropological work since the 1950s has unambiguously demonstrated that Anatomically Modern humans have continuously inhabited earth as far back as 200,000 BC.<sup>1</sup> By 50,000 BC, fewer than 2 million humans, living in small, close-knit, egalitarian communities, roamed the planet incautiously consuming the abundant fauna and flora.<sup>23</sup> The Quaternary Megafauna Extinction (QME) was the well documented, extremely rapid crash in available calories, beginning around 50,000 BC, and accelerating into the Neolithic around

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<sup>1</sup> Chan, E.K.F., *et al. human origins in a southern African palaeo-wetland and first migrations*. Nature 575, 185–189 (2019)

<sup>2</sup> Graeber, David, Wingrow, David (2021), *The Dawn of Everything*. (126)

<sup>3</sup> Sahlins, Marshall (2009). *Hunter-gatherers: insights from a golden affluent age*. Pacific Ecologist. 18: 3–8

11,000 BC.<sup>456</sup> This crash resulted in widespread resource pressures representing a net-loss in total available calories. Areas of genuine resource scarcity, once a transient phenomena, became frequent and pervasive, driving humans to hunt progressively smaller game, forage more intensively and increased the pervasiveness of hoarding behaviors.<sup>7</sup> In practical terms this meant groups of humans were increasingly pressured to spend more energy or take more risk to earn the same amount of calories. By the year 10,000 BC, for the first time ever, humanity needed to learn how to survive in a persistently resource scarce environment. This pressure induced a Kuhnian paradigm shift in humanity's behavior from one of nomadic resource sharing to sedentary hoarding.

### **The Second Proposition:**

Through 90% of human history (200,000BC - 1,000BC), and within surviving hunter gatherer groups,<sup>8</sup> resource hoarding behavior was extremely rare, as it was unnecessary and considered wasteful.<sup>9</sup> Post QME, hoarding behavior became a beneficial in-group adaptation, as it allowed for the acquisition, retention and management of scarce resources by an in-group population for exclusive consumption within the in-group. Founded on the novel social technology of “rival and excludable real property”, the domestication of cattle, the invention of modern agriculture, and the resultant socio/political structures we call “modernity” proliferated in communities as humans spread across the earth. Through late prehistory into modernity, large regionally focused populations with common cultural practices, separated classes and hierarchical structures become more frequent in the written and archeological record. Varied cultural structures for competition and hoarding form based on regional ecological availability, and global trade develops in earnest. By 500 BC the Achaemenid Empire had established a robust and advanced multi-region system of trade, signaling a point of no return from humans being cooperative nomads, to competitive property holders.

With expanding trade networks, cultures founded on “modern” hoarding and domination myths rapidly and violently expanded worldwide. By 2010, nearly all human cultures based on community and sharing had been driven into isolation or complete extinction by communities of competition and hoarding.<sup>10</sup> Communities with communal internal structures and extractive external behaviors were more successful in acquiring resources, than organizations that were

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<sup>4</sup> Christopher, S., et.al. (2014). *Global late quaternary megafauna extinctions linked to humans, not climate change*. Proceedings of the Royal Society B: Biological Sciences

<sup>5</sup> Ellis, E.C. (2021) *People have shaped most of terrestrial nature for at least 12,000 years*, Proceedings of the National Academy of Sciences, 118 (17).

<sup>6</sup> Stewart, M., Carleton, W.C. & Groucutt, H.S. (2021) *Climate change, not human population growth, correlates with Late Quaternary megafauna declines in North America*. *Nat Commun* 12, 965.

<sup>7</sup> Knight, Chris (1995) *Blood Relations*. (449)

<sup>8</sup> Lovera, Miguel et.al. (2021) *The Ayoreo: The last isolated people outside the Amazon*, IWGIA.

<sup>9</sup> Diamond, Jared (1987) *The Worst Mistake in the History of the human Race*, Discover Magazine, May

<sup>10</sup> Singh, H.S. (2010) *Ancient tribe becomes extinct as last member dies*, CNN. Cable News Network.

more egalitarian.<sup>11</sup> The practical success of this new paradigm is unquestionable and forms the basis for misguided “great power” mythologies, “might makes right” provincialism, and the persistent “Indigenous Savage” tropes. Said more bluntly: Provided you have a relative scarcity of empathy, premeditated violent conquest of indigenous peoples is a viable and successful strategy for resource acquisition, which cemented it as a practical template for future structures of dominance. The application of fear, violence and war then became the dominant strategy to isolate, dominate and then monopolize resources for distribution within an in-group, to the exclusion of an out-group.<sup>12</sup>

It is important to note that while these are *marginally* dominant strategies, in that they can improve material conditions of an in-group relative to other groups temporally, they are not generally considered maximally prosocial. Antisocial or coercive behavior is de-facto less-preferred, but thought of as a necessary preference over cooperation.<sup>13</sup> That is to say, society does not prefer more-war to less-war, but individual groups may feel enough fear of future deprivations that they assume *some*-war is preferable to cooperation in resource scarce conditions. Sun Tzu reminds us:

*“The costs of conflict always weaken our position even if we ‘beat’ our opponent”.*<sup>14</sup>

### **The Third Proposition:**

The specter of scarcity is the prime mover of Economics and political thought. Even before Malthus, Ricardo and Marx,<sup>15</sup> scarcity had been the foundational assumption that human desire will always and in every system be underserved by the available resources. Ecological change, reinforced with human amplification loops emphasize this point precisely. If a desired resource becomes increasingly scarce, the terror of future scarcity drives hoarding, leading to increased competition and accelerated depletion of the resource.

Negative sentiments around the depletion of a common resource are generally attributed toward the producer currently depleting the resource, as the resource measurably crashes. However, anti-social overconsumption behaviors must begin *prior to resource scarcity*. Society generally overlooks hoarding behaviors that induce scarcity, despite these actions being wantonly anti-social. This is not a surprise, as information as to the state of any resource prior to its consumption is generally unknown, and we have developed very few social brakes on consumption in abundant periods.

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<sup>11</sup> Wolfe, Patrick (2006) *Settler colonialism and the elimination of the native*, Journal of Genocide Research, 8:4, 387-409

<sup>12</sup> Gutwald, R. (1986) *Tactical encirclement reductions*, DTIC. .

<sup>13</sup> Prediger, Sebastian; Vollan, Björn; Herrmann, Benedikt (2013) : *Resource scarcity, spite and cooperation*, Working Papers in Economics and Statistics, No. 2013-10, University of Innsbruck, Research Platform Empirical and Experimental Economics (eeecon), Innsbruck

<sup>14</sup> Tzu, S. (2010). *The art of war*. Capstone Publishing.

<sup>15</sup> Turner, B.S. (2017) *scarcity*, The Wiley-Blackwell Encyclopedia of Social Theory, pp. 1–2.

“Finders keepers” has been a consistent natural law of property inheritance, formally codified as “*res nullius*” or “*nobody’s thing*” by the Romans.<sup>16</sup> Any political or economic structure that prefers cooperation but remains foundationally attached to resource hoarding, *must* promote that resource allocation be based on this principle as it ignorantly avoids acquisition conflicts outright, assuming an infinite world of “New Markets.” Said another way, humanity’s social structures remain so grossly immature that we have not determined how to collectively acquire and distribute desired resources in ways that are mutually satisfactory.

It follows then that the corollary in capital based markets of “Capturing value” (Market Share) in a “Growing market” (Resource abundance) environment, becomes the ethically acceptable way to produce goods or acquire property. The inheritance of ownership of the produced goods, in the absence of any social structure to impede it, mandates that distribution of resources is solely under the control of the “finder.” Therefore across all modern competitive frameworks, Economic, Ecological or Political, “first mover advantage” is assumed, and Monopolization of a resource, or a market, rather than cooperation, becomes the optimal organizational behavior. “Creating Markets/Value” (Inducing novel scarcity fears via public storytelling) becomes an optimized resource acquisition strategy, as monopolization of production is most efficient when the market “Creator” controls access to the new market from the outset, minimizing appropriation costs. “Investment capital” (Hoarded value) is used to generate these new markets at a sufficient scale, while the relative abundance of capital for the “house” (Investors) will allow the creators to impede competitors from the start, thus ensuring a maximum return on investment. Power law guarantees that existing resource hoards will forever seek returns and accumulate more into increasingly fallow pools of capital. Unrestrained “Free” competition, a reinterpretation of “might makes right,” then must represent the dogma behind forever growth.

This scheme assumes that there exists an infinite resource cache, and hence we are forever seeking new areas of “*res nullius*” resources. We know however that natural stocks of desired goods dwindle, and resources become harder and more dangerous to acquire.

### **The Fourth Proposition:**

There exists no regularized measure of relative deprivation that can be agreed on across all cultures and all time periods. Paleolithic communities did not use value abstractions such as currency, or view property ownership similar to how “modern” society does. Any attempt to measure whether “traditional” humans prior to QME are relatively deprived compared to modern humans in a monetary sense is incomprehensible.<sup>17</sup> This paper does not attempt to solve this problem and I recognize how fraught it is. Nevertheless, I chose a set of biologically irreducible measures with the largest impact and most far reaching historical relevance on fertility,

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<sup>16</sup> Lueck, Dean (2003) *First Possession as the Basis of Property*, in Property Rights: Cooperation, Conflict, and Law, 200

<sup>17</sup> Smith EA, et.al. *Wealth transmission and inequality among hunter-gatherers*. Curr Anthropol. 2010 Feb;51(1):19-34.

historically the primary driver of resource demand growth:<sup>1819</sup> Consumable kilocalorie production, Consumable Potable Water production, Access to stable Shelter. I suspect this list could be expanded to include basic services such as medical care and logistics and retain the abundance of global per-capita demand production.

- **Calories:** By the year 1990 humanity was producing more than 2500 calories of food per day per person globally with a rapidly growing population.<sup>20</sup> As of 2019, in every region of the world, humanity produces between 2500-3500 calories per day per person.
- **Water:** Worldwide, 58,000 water treatment plants produce more than 1.2TN gallons of potable water daily.<sup>21</sup>
- **Shelter:** 42 million of the 426 million homes worldwide are vacant. 1/10 homes in advanced economies are empty.<sup>22</sup>

But what of distribution? Although global production may far outpace global demand, logistical access to abundance remains the primary driver of variability in relative scarcity globally. That is to say, there are physical regions of unambiguous scarcity, and physical regions of unambiguous abundance of a range of necessary and non-necessary goods. Critically, I propose that global production of non-necessary goods, in regions that have an abundance of necessity goods, crowds out production of services to distribute necessity goods from regions of real-abundance to those with real-scarcity. Thus, while there are enough resources and productive capacity available globally, in-groups controlling abundance have increasingly chosen to produce non-necessary goods, rather than produce services to distribute necessary goods to regions with less abundance of necessary goods.

### **The Fifth Proposition:**

It must follow then that underproduction of necessity goods *must not* be the reason for relative scarcity, as we have established there is no scarcity of necessity goods production globally. Rather, by the year 2010, populations that are structured at their core to share and cooperate are outnumbered at least 16 to 1 by populations structured to compete and hoard<sup>23</sup>. Local, regional and global social structures in the form of hierarchical states and corporations,

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<sup>18</sup> Page, A.E. et. al. (2016) *Reproductive trade-offs in extant hunter-gatherers suggest adaptive mechanism for the neolithic expansion*, Proceedings of the National Academy of Sciences, 113(17), pp. 4694–4699.

<sup>19</sup> Dufour, D.L. and Piperata, B.A. (2018) *Reflections on nutrition in biological anthropology*, American Journal of Physical Anthropology 165 (4), pp. 855–864.

<sup>20</sup> Roser, M. (2020) *Breaking out of the Malthusian trap: How pandemics allow us to understand why our ancestors were stuck in poverty*, Our World in Data

<sup>21</sup> Ehalt Macedo, H., et.al. (2021) *Global distribution of wastewater treatment plants and their released effluents into rivers and streams*.

<sup>22</sup> OECD (2022) *HM1.1. HOUSING STOCK AND CONSTRUCTION*

<sup>23</sup> *Indigenous peoples rights are human rights*. (2022) Amnesty International.

enforce these social structures by requiring resource allocation to be done in a specific fashion. The primary reason then for scarcity at the individual, familial or community level *must be* the lack of access to a hoarded cache of socially determined resources that can be traded for necessity and non-necessary goods alike. As we demonstrate in Proposition Three, access to resources is determined strictly by how competent individuals are at acquiring and hoarding resources, enabling the flywheel of hoarding and induced scarcity.

Humanity produces enough food, water and shelter for everyone to have every basic need met, however consumers with excess hoarded value, de-facto prefer improving their overall standard of living over minimizing relative scarcity. This precise flywheel, where an excess of stored resources is used to create additional resources, has the effect of pooling resources to the exclusion of others in relative scarcity. This is not a lossless process as the production of any non-necessary goods in an economic system where demand for necessary goods remains, induces redundant production (waste) in the overall global productive capacity. Further, “stored value” becomes increasingly fallow with negative velocity, as this value could be allocated to reduce relative scarcity by facilitating exchange. Those in real scarcity still demand production of necessary goods, therefore the *fact of* resource scarcity, will inexorably drive inefficient, misallocated production and increased waste at a global production scale.

Despite unquestionable material abundance, the core value of humanity has atrophied: mutual caring for our communities. The famous 20 year Framingham Heart Study shows unambiguously that Happiness is directly related to friend relationships and how close you live to your friends.<sup>24</sup> Our day to day positive interactions with neighbors and community has never been less frequent. As recently as 2017, “Modern” humanity was split on whether life has gotten better or worse since 1960.<sup>25</sup> Even prior to the COVID-19 Pandemic, political polarization was at its own pandemic proportions, with the world increasing polarization by 20% since the year 2000.<sup>26</sup> In 1990 47% of Americans had more than 6 close friends, with only 3% having no close friends. By 2021 only 25% of Americans had more than 6 close friends and 12% of people now report having zero close friends. We have a horrifically bifurcated workforce, with overwork and slavery on one side and pure Luxury on the other.

The purest example of scarcity creating existential terror is declining birth rates. 50% of the world population is now below the replacement birth rate and younger generations are delaying reproduction or choosing to go childless altogether. While this is generally correlated with one-time increases in standards of living, inverted population age pyramids have

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<sup>24</sup> Fowler, J.H. and Christakis, N.A. (2008) *Dynamic spread of happiness in a large social network: Longitudinal analysis over 20 years in the Framingham Heart Study*, *BMJ*, 337(dec04 2)..

<sup>25</sup> Poushter, J. (2017) *Worldwide, people divided on whether life today is better than in the past*, *Pew Research Center's Global Attitudes Project*. Pew Research Center.

<sup>26</sup> Mounk, Y. (2022) “*The Doom Spiral of Pernicious Polarization*,” 21 May

historically spelled doom for societies<sup>27</sup>. Low birth-rates have long been thought to have contributed strongly to the collapse of Rome<sup>28</sup> and was directly attributed to the fall of Greece:

*“In our time all Greece was visited by a dearth of children and generally a decay of population, owing to which the cities were denuded of inhabitants, and a failure of productiveness resulted, though there were no long-continued wars or serious pestilences”*<sup>29</sup>

Humanity is unraveling socially. We are strip mining the earth in an attempt to build everyone their own personal cocoon of safety. We mis-allocate productive resources to bemuse our increasingly lonely selves into thinking we can consume our way to resilience. Alienation becomes existential when societies lose hope that a community will support them when needed. Humanity is facing a crisis of maintenance.<sup>30</sup> Social structures are becoming increasingly privatized and excludable. Individuals are more easily exploited as they have fewer social structures allowing them to be resilient to exploitation. The next catastrophe will certainly start with a widespread social withdrawal, leading to an economic withdrawal. The march toward perfect alienation and exploitation will make any job unthinkable at any pay rate. The birth rate will crash, as people lose confidence in the future. As of this writing in 2023 there are areas in the world already fully experiencing these symptoms. If we continue to push beyond the pale to a point where we have forgotten how to raise children, fix our machines and open our homes to strangers, there will be nothing to rebuild.

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<sup>27</sup> Chesnais, Jean-Claude (2000) *The Inversion Of The Age Pyramid And The Future Population Decline In France: Implications And Policy Responses*. Expert Group Meeting On Policy Responses To Population Ageing And Population Decline. (3)

<sup>28</sup> Devine, A. M. (1985) *The Low Birth-Rate In Ancient Rome: A Possible Contributing Factor*. Rheinisches Museum Für Philologie, vol. 128. (313–17)

<sup>29</sup> Polybius. ( 1962). *The histories of Polybius*. Bloomington :Indiana University Press

<sup>30</sup> *Skilled trades in America* (2021) *Angi Research and Economics*.

## **A note on the Artificial Intelligence Alignment problem**

Humans view labor augmenting technologies with both wonder and suspicion. In a competition for alienated labor, a machine has the house odds. As a function of our core terrors of scarcity, which automation reduces, and desire to hoard, where near perfect automation allows for near total profit, humanity has handed all possible labor over to machinery at every possible opportunity. It is reasonable to assume that humans will continue to improve machines, progressively augmenting and eventually replacing human control with machine control generally. Given this assumption, the Alignment problem asks: “How do we build machines with human values?”

All approaches to developing Automated or Artificially Intelligent systems require that a human has provided direction to the system. In classical systems these directions are explicit and can be described using human interpretable language. In data derived inference systems, these instructions are embedded in the form of relationships between variables such as pixel-wise variable labeling, reward trajectory biasing, and hyperparameter tuning. Regardless of approach, the data models and relationships are inextricably embedded with the biases inherent in the humans generating the relationship variables.

We know from experience when we train data-driven systems on publicly available human data (forums, chat, blogs etc...), we get antisocial results. Racism, sexism, fear, hate; unless explicitly filtered are the de-facto behavioral attributes of these systems. Why should results be so consistently biased? Simply: the data we generate is overwhelmingly anti-social. Every piece of data that humans generate is a demonstration of how humans respond to the world based on fear and competition.

This should be an obvious outcome, as I have shown that the entirety of human written history assumes scarcity, competition and fear. Much like humans learn best from demonstration, AI is simply learning from what we demonstrate. If we as humans are demonstrating that the most frequent and locally optimal behavior is fundamentally based on competition and fear, then these systems will bias toward competition and fear. Automated systems will simply be an extension of the biases of their creators and will never be able to “align” with humans qua humans, only ever “biased towards” the group that built them.

The question of “Alignment” then is an Absurd question - as humanity cannot align internally due to our structural impediments. To anyone who is worried about “Aligning” AI globally, your charge is this: Invert structural incentives in your organization to demonstrate cooperation rather than competition, and sharing rather than hoarding as much as possible. This is the only way to create data that is de facto embedded with cooperation, sharing and trust. If we stay on the current path, we will continue to generate data teaching our systems how to destroy each other rather than care for each other. This is an existential threat that cannot be buttressed by any number of laws or rules enforced by hierarchies.