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# Our Current Attitude towards Science Determines the Future of Our Planet

*Kaiqiang Zhang* | ORCID: 0000-0002-2288-4893

Associate Professor, School of Energy Science and Engineering,

Nanjing Tech University, Nanjing, China

*kaiqiangzhang@njtech.edu.cn*

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## Abstract

This article examines the intertwined relationship between modern scientific advancement and its potential to shape the future of Earth's ecological and societal well-being. While scientific innovations have brought about unprecedented developments, they also present new challenges, particularly regarding sustainability and ecological balance. By tracing humanity's historical relationship with nature and the rise of specialized sciences, the article reflects on the dual nature of technological progress. It calls for a balanced approach, one that prioritizes wisdom alongside knowledge to avoid irreversible harm to the planet. Through philosophical reflections, the article emphasizes the need for responsible innovation, urging researchers to consider the long-term consequences of their work for Earth's future.

## Keywords

science and innovation – sustainability – knowledge economy – technological impact – responsible innovation – environmental ethics

Modern society is saturated with the atmosphere of innovation, and this is especially prominent within the academic community (Jones and Flannigan 2006). We attempt to solve current issues with various innovative approaches, unaware that these very issues are, in fact, the products of previous innovations.

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Before the Industrial Revolution, there seemed to be no fear of the Earth being destroyed, despite continuous human wars. As long as the Earth was not destroyed, its ability to nurture life persisted, allowing humanity to thrive. Now, the situation has changed. With the advent of powerful nuclear weapons, the concept of “Earth is perpetual existence” has shifted from unconditional to conditional (Schweinitz 1959; Allen and Weisdorf 2011). Pollution has emerged, leading to an increasing scarcity of clean water resources on Earth (Jorgenson and Clark 2012). Conversely, humanity has achieved the innovations it initially sought, such as nuclear energy and various chemical products (Geels 2002). In an effort to improve our lives, we continually act upon the Earth, which on the one hand changes human life and on the other creates new problems (Nyssen et al. 2004). Faced with such a predicament, how should we respond? Without the right attitude towards this issue, it is highly likely that we could destroy the Earth with our own hands.

Are we to do nothing then? It appears not. Humans, as primates, are inherently driven to engage in activities (Tomasello et al. 2005). Moreover, non-primates also partake in basic practices essential for survival (Ferrie et al. 2014). Predators on the savannah learn hunting and other vital survival skills through practice. The essence of human activity is not much different from that of other animals. In early human history, besides practices aimed at satisfying hunger, there were activities akin to what we now call natural science (Nyssen et al. 2004). For example, China saw the early development of gunpowder, metallurgy, and wooden architecture. These endeavors adhered to the same physical and chemical laws that govern our world today. The primary difference might be that the concept of distinct academic disciplines did not exist in ancient times, with most knowledge being transmitted through experience and craftsmanship. Hence, these human activities had a limited impact on changing or damaging the Earth, not fundamentally compromising its biocapacity. However, as “natural science” has evolved into a specialized and independent field or discipline, it has become a more efficient tool for us to modify the Earth. In this light, we must be especially careful, as blindly pursuing innovation could lead to consequences we are unable to bear (Sariola 2017).

It is believed that many discoveries and inventions initially target the numerous advantages they promise. However, it is essential to understand that everything has a dual nature (Joy 2001). The advantages are indeed significant, but with the inception of an invention, its disadvantages inevitably arise. Just like a coin, determining the head simultaneously determines the tail. For instance, although nuclear energy has numerous advantages, the current solutions for nuclear waste, such as deep burial or ocean disposal, are far from adequate (Sovacool 2008). Addressing these waste issues may require the exploration of

many new methods. However, these new methods, too, inherently possess their dual nature, potentially leading to unexpected and unbearable consequences. This could result in a continuous cycle of finding new solutions to new problems, endlessly repeating.

Research is now underway on grand projects like living on other planets. If this goal is indeed achieved, will humanity still cherish the Earth? When people have an alternative, they tend to become bolder and more daring (Kahneman and Tversky 2013). But is this a good thing? Before undertaking many actions, we should consider whether they truly meet human needs or are merely driven by personal ambitions. For example, current extraterrestrial exploration programs and plans to colonize Mars seem like great plans for humanity. However, these so-called grand plans do not hold up under close scrutiny. We must be especially cautious about the social lifestyle under the so-called knowledge economy.

First, it is important to understand a few concepts: What is the knowledge economy, and what is the economy? The so-called economy is concerned with managing affairs of the state (Musters, Parekh and Ramkumar 2013). Nowadays, the understanding of the economy seems more inclined towards using capital to do things, and then scraping about for more capital, resulting in social wealth becoming increasingly concentrated in the hands of a few. History teaches us a simple truth: When the distribution of social wealth becomes extremely uneven, it will lead to popular uprisings and cause social unrest (Zwart 2019). The organizations and groups that come to power, driven by the dark instincts of human nature, gradually start exploiting those below them (look at today's capitalists, each one exploiting their employees), aggressively seeking wealth, leading to a severe imbalance in the distribution of social wealth once again. Then social unrest erupts once more. This cycle repeats itself over and over, without fail. Humanity seems to be surging forward in the long river of history, but in reality, we are just spinning in this circle. These are truths that we humans need to particularly understand and comprehend deeply.

In an era of material scarcity, human needs were relatively simple; mostly centered around basic material needs for survival (Randall 2021). Everyday social activities also had a relatively small impact on the Earth. However, the birth of modern science seems to have given humanity a sharp blade, which can be used to transform—or rather, destroy—the Earth to a greater extent (Wolff 2021; Rosa et al. 2015). Once humanity possessed a powerful weapon like science, there needed to be careful consideration of its use (Terra et al. 2023). Although we think we understand this knowledge, we need more clarity when it comes to whether or not to use it and under what circumstances. However, real society seems not to care about this. What we learn from child-

hood is almost all knowledge, with little wisdom. This has led to modern people almost losing initiative over science, becoming virtually slaves to it. We are enveloped by the many materials created by science, unable to even escape from them (Birat 2020). The uneven development of knowledge and wisdom has further become a catalyst for capitalists to stimulate material consumerism through so-called innovation. This is what is called the knowledge economy. Today, human society is full of material desires, and the restless human heart cannot find true peace (Das et al. 2020). Every day, life is filled with various comparisons, or rather, competition. Even more tragically, the whole of society operates through encouraging competition and comparisons to achieve so-called development. This ultimately leads to the overproduction, overconsumption, and eventual wastage of resources in human society (Boström 2021).

Under the encouragement of numerous slogans, such as the knowledge economy, innovation, and industrialization, humanity is increasingly straying from the right path. It is indeed a good thing to expand our knowledge and to explore the mysteries of nature, leading us to understand nature more deeply and thoroughly (Cherukunnath and Singh 2022). However, whether to use knowledge and how to use it requires careful thought. This is somewhat like a locksmith who is adept at picking locks but knows when to use this skill and understands the principle of not using it when it is not appropriate. Currently, the actual situation with our use of knowledge is just the opposite. Especially in science and engineering disciplines, every new discovery is aggressively expanded into various fields and industries for application, without considering the potential consequences (Grassini 2023). Little do people realize the truth of the saying “When everyone knows beauty as beauty, there is already ugliness (天下皆知美之为美，斯恶已)” from the Chinese philosophical text *Tao Te Ching* (道德经). This is something that needs special attention in current academic research. However, people are often driven by profit to recklessly push forward, leading to irreversible consequences.

The so-called knowledge economy involves using the natural operational laws summarized by human groups to interact with the Earth's ecology to achieve the widely advocated sustainable development (Širá et al. 2020; Hari-ram 2023). However, upon careful reflection, many philosophical paradoxes become apparent. First, why is there such an emphasis on sustainable development now? Does this imply that we have already pushed the Earth to the brink of unsustainability? Does this further suggest that what humanity is doing is incorrect? Otherwise, why would there be a need to advocate for sustainable development? Conversely, in the time before natural science became a recognized discipline, humans seemed to have no concept of sustainable devel-

opment, nor were there concerns about unsustainable ecological practices. A comparison of the past and present quickly reveals that, in some respects, past lifestyles were better. From this, it can be seen that humans are relatively honest; in many cases, they inadvertently confess that their actions are detrimental to the sustainable development of the Earth's ecology. However, the reality is also characterized by increasingly fierce technological competition between nations (Wu 2020). In order to gain an advantage in this competition, there is a strong domestic push for the development of science and technological innovation. Consequently, an abundance of rules, regulations, and performance indicators are inevitably established (Teece 2018). To meet these so-called performance indicators and to gain the reputation and benefits behind them, people desperately strive to achieve what is regarded as "life value," even resorting to falsification if necessary. "Life value" is a complex concept that encompasses multiple aspects, such as self-recognized value, socially recognized value, and their intricate interplay, among others. For instance, many scientists regard winning prestigious awards such as the Nobel Prize, the Turing Award, or nationally designated honors as markers of achieving their life value. However, the pursuit of such prestigious recognition, often driven by national talent programs, necessitates the production of high-quality research papers. This pressure has led to frequent instances of academic fraud. The root of this issue lies in the allure of fame and fortune, rather than a genuine passion for science.

How prevalent is academic fraud in the scientific community today? In the field of biology, for instance, the retraction of scientific papers is now quite common (Bhatt 2021). Often, these papers include images that are not relevant to the study or are reused in different contexts to falsely construct a logical narrative that fits the desired outcome. Additionally, there have been cases where fraudulent cancer drug research has misled scientific progress for over a decade. These issues stem from the pursuit of personal desires. These examples illustrate how the pressure to meet performance indicators and gain recognition can lead individuals to resort to falsification, ultimately compromising scientific integrity. What was originally a pleasurable activity of exploring the unknown has turned into a tool for achieving so-called success (Stucke 2013). How many researchers are truly happy now? Competition driven by predetermined fame and fortune incentives rarely develops into healthy competition. Once such competition exists, it is often negative. Therefore, a more effective approach might be to reduce the emphasis on promotional slogans. Not providing any encouragement openly could give the greatest support and incentive for the exploration of nature, as it helps maintain the purity and fairness of natural exploration.



FIGURE 1  
Human beings live in harmony with the Earth.

It is human nature to engage in practices driven by innate curiosity (Ten et al. 2021). Moreover, human desire is endless, an intrinsic characteristic of our species. This, in itself, is not problematic. However, practices driven by desire tend to lead to negative outcomes, whereas those driven by instinct are more likely to yield positive results.

How do we differentiate between desire and instinct? Practices aimed at indirectly achieving another goal can be categorized as driven by desire. Conversely, if one's focus remains solely on the act itself, it could be considered to be driven by instinct. However, it is important to acknowledge that eliminating desire is impossible. Having too many clothes to choose from, viewing luxury items as symbols of wealth, and defining a successful life by honors and awards are all manifestations of desire. In modern life, desire pervades every corner, and the only viable option is to reduce it. Desire cannot be controlled by law; only through the continuous elevation of our cognitive understanding can we adopt a proper attitude towards it. Therefore, as part of basic education, besides popularizing natural scientific knowledge, it is best to emphasize the importance of philosophical knowledge and moral ethics. Only by enhancing philosophical and critical thinking can we help generations of young people improve their ability to not easily be misled by the material world, thus preventing them from losing themselves and ultimately helping them find a sanctuary for their souls. Compared to the many fields of knowledge that are popular in modern society, this is the truly valuable intellectual wealth. It will guide us on the right path throughout our lives and in so doing can foster a harmonious relationship with the Earth (Figure 1).

How should we approach our future exploration of nature? As researchers, thinking from a different perspective might provide us with answers. Suppose

you are the Earth; would you welcome the current subject of your research? I suspect not in the case of nuclear bombs for example. Guided by this mindset, our exploration of nature should be more Earth-friendly. Therefore, conducting research that avoids sequelae seems more beneficial for maintaining the Earth's long-term biological functions.

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