

Proposed Civilization Scale

文明等級提案

Proposal

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Type 0: Parasitic

I: Energy Mastery

II: Energy and Matter Mastery

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Proposed Civilization Scale
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Abstract

Instead of measuring a civilization's level of technological advancement based on energy consumption point of view, I believe it is more appropriate on its capability of commanding the cycle and recycle of energy and matter; the mastery of fundamental elements.

1. **Type 0: Parasitic.** A civilization lives on a host planet; extracts resources from the host without benefiting to the host. Objective is focused on controlling resources; Progress is commanded by interests; And, effort is enslaved by benefits but rewarded few. It's lack of clear objectives and commitments of achieving higher civilization. It is unable to recover from the altered environment by its' activities. The civilization is trapped in its mistakes of uncorrected errors. It is struggling to find a way out.
2. **Type I: Energy Mastery.** A civilization achieved free and clean energy in perfect cycle. Energy is essential to re-engineer the structure of matter. Achieving the completely proficient of energy is the basis of matter mastery. For example, how large the research and production projects on Earth and in space can be undertaken, if the energy cost is trivial or free? At this stage, the progress will accelerate in exponential rate.
3. **Type II: Energy and Matter Mastery.** A civilization achieved the knowledge and technology of mastering the energy and matter in perfect cycle. It is capable of engineering unique structures of matter that can not be done by random or lengthy processes of natural. Resource scarcity is no longer an issue. Waste is eliminated. No more exploit of natural resources of its home planet. Even agriculture is not necessary. The civilization is the guardian of its host planet.

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1 Introduction

The Kardashev scale and extensions[3] of measuring a civilization's level of technological advancement, based on the amount of energy a civilization is able to utilize. It is a wake up call for us to look deep into our future on Earth.

5 However, there are issues of measuring a civilization based on consumption point of view. The availability of the energy for a home planet can be considered constant. A structure as large as galaxy has a maximum amount of energy. It is all available to a civilization. Still, harness and consumption rearrange the energy distribution. For example, I don't believe Earth is capable of taking more than what is given by the Sun. Taking a little more of
 10 Sun's energy is likely to do harm than good. Wouldn't Earth be an overcharged battery? Isn't Earth a living example of wasteful harness and consumption of energy? What is the consequence of energy consumption equal or excess the what is attained on a home planet? It is hard to measure it mathematically, however, not hard to image the consequence of harnessing and consuming the total energy of a star, isn't it? Isn't higher level of CO_2 harnessing
 15 more energy from the Sun?

Another issue is the objective of a civilization can be misdirected to the amount of energy that is capable of harnessing. Mining is the lowest form of obtaining the resources from home planet. The result of continually taking resource is exhaustion with unmanageable waste. The knowledge and technology of resource utilization has precedence over exploit
 20 for advanced civilization, isn't it? I believe the issue is the command of cycle and recycle of energy and matter; the mastery of fundamental elements of the universe.

Space is the first and the most among the fundamentals of the universe. The power of

space is it's shapeless, actionless, and timeless. It is not affected by mass or force, even hypernova can not dent it. Consider space has room for the universe. Let anything move
25 free without any restriction, but nothing can escape from it. It has nothing, but nothing
can come to exist without it[1]. We have learned to manipulating matter and energy since
our first existence on Earth, however, never space. I don't believe any civilization is able
to manipulate space. There is nothing powerful enough to challenge space, not even the
combined might of total matter and energy of the universe. Mastery of space can only be
30 science fantasy.

On the other hand, mastering energy and matter is possible. Even matter and energy
are limited by space, but it is unlimited to a civilization. The infinite supply of energy and
matter is guaranteed by perfect cycle and recycle. There is always more than a civilization
can utilize in it's surrounding, if mastery of resource cycle is achieved.

35 2 Proposed Scale of Civilization Advancement

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without benefiting to the host. Objective is focused on controlling resources; Progress
is commanded by interests; And, effort is enslaved by benefits but rewarded few. It's
lack of clear objectives and commitments of achieving higher civilization. It is unable
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in it's mistakes of uncorrected errors. It is struggling to find a way out.
2. **Type I: Energy Mastery.** A civilization achieved free and clean energy in perfect cycle.
Energy is essential to re-engineer the structure of matter. Achieving the completely
proficient of energy is the basis of matter mastery. For example, how large the research
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trivial or free? At this stage, the progress will accelerate in exponential rate.
3. **Type II: Energy and Matter Mastery.** A civilization achieved the knowledge and tech-
nology of mastering the energy and matter in perfect cycle. It is capable of engineering
unique structures of matter that can not be done by random or lengthy processes of
50 natural. Resource scarcity is no longer an issue. Waste is eliminated. No more ex-

plait of natural resources of it's home planet. Even agriculture is not necessary. The civilization is the guardian of it's host planet.

3 Prospect of Civilization

I believe intelligent beings will eventually come to exist in any stable environment with
55 adequate mass and energy. The scale of the civilization could spread from type 0 to topmost
Type II. The varieties could be as incredible as species on Earth. Some civilizations may
remain trapped in their struggle. Other may have achieved Type II. I also believe Type II
civilization can only be peaceful, and more powerful than super heroes we dream for. It
is the only civilization able to continue to exist. If alien sightings turned out to be true. I
60 would conclude that:

- Aliens have achieved advanced civilization. Asides from sighting, there is no evidence showing that they are harnessing and consuming our resources. Maybe in the past but it looked like they have moved on.
- They are not hostile.
- 65 • They have no intention to intervene.
- On the other hand, I would question their advancement and integrity if they only interact with human elites. I believe the collected intelligence of public top selected few. Would you trust them who creating apex class of human society?

Since we have proven capable of destroying the global environment. The time they step in
70 could be when we are threating their existence. On the other hand, they could just step aside
and observe the drama. There are many alternative planets in Solar System and Milky Way
they can go for Type IIs. I believe they would not interact with us unless we can be worthy
of advanced civilization. We might be cute in their eyes, but we are unpredictable. Isn't it
the same logic that we keep other species out of our neighborhood?

75 Nevertheless, I don't expect close encounter any soon. Neither do I wish for their mercy
nor assistance. We are alone on our own. It is needless to say where our place in the scale
is. The issue is, whether Earthling is capable of achieving higher level of civilization? The

bad news, it could be very tough issue. We don't have clear objectives of achieving such civilization in our scientific, technological, political, social, and economic systems. The
80 truth is, our systems work contrarily. We are not peaceful species. Much effort is wasting in isolation and conflict. I would not be too proud of our achievement. Don't think our progress is due to cheap energy. The truth is, our lack of progress is due to costly harness of energy and matter. The progress is only dotted in parts of the globe and it rewards selected few. However, it has altered the composition of the whole Earth from bottom ocean to top
85 atmosphere.

It is easy to neglect happenings that may take decades or longer to surface for short-lived creatures. We don't even have a clear memory of longer than few millenniums back, do we ready look and prepare our future millenniums? It seems that no matter how hard the respectable foreseeing people warn us, the society remains operating shortsightedly and
90 selfishly. Ain't we living on the expenses of our children? Flopping butterfly wings caused a storm is as specious as earthquake by an elephant stumped his feet. One person can not make significant difference unless mass reactions took place.

Nature has given us adequate opportunity to achieve highest civilization, but not without due date. I believe we are at the crossroad of our existence. Do you believe there is more
95 slack for us to set our objectives straight and pursue aggressively? Otherwise, if the universe has to create next species of intelligent being on Earth, I am confidence it would not make the same mistake. Isn't the existence of human the living proof of the ultimate power of the universe?

References

- 100 [1] Cres Huang; *A Brief Experiment of Space*, 2014/11; ISBN 978-957-43-1996-1(paperback);
ISBN 978-957-43-2027-1(PDF); National Central Library of Taiwan, <http://ebook.ncl.edu.tw>.
[A Brief Experiment of Space](#)
- 105 [2] *Kardashev, Nikolai*. "Transmission of Information by Extraterrestrial Civilizations", *Soviet Astronomy*, 8, 217 (1964).
- [3] *Kardashev Scale*; Wikipedia, the free encyclopedia
https://en.wikipedia.org/wiki/Kardashev_scale

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