A possible hypothesis to alleviate neijuan(内卷)

1.Abstract and preface

In ancient times, humans were able to ascend to the top of the food chain largely due to cooperation in facing natural enemies and collectively extracting food and resources from nature. However, in the present day, it seems that humans no longer have natural adversaries. Consequently, the motivation for cooperation has waned, leading to situations where people often compete with each other for resources.

Even if resources are sufficient to meet everyone's basic survival needs, humans still have individual desires for self-fulfillment that surpass mere existence. Competition for status among people is inevitable. However, when this competition becomes meaningless, driven solely by the desire to outperform others, it leads to a phenomenon known as '内卷' (neijuan).

Since ranked matches are unavoidable, why not innovate the competition mechanism? Or, to put it another way, let's introduce a common adversary (the unknown in science, engineering, agriculture, and medicine). Let's compete based on contributions to natural sciences. Whether it's investing money, putting in effort, or using our intellect, as long as we break through the boundaries of existing knowledge, we can achieve victory in ranked matches, gaining self-fulfillment, prestige, and substantial profits. The outcome of victory will inevitably lead to open discussions, questioning, overturning, re-questioning, rediscovery, and further discussions…

You might think that only a few exceptional scientists can guide the way in cutting-edge natural science questions. However, I believe that language (beyond its traditional meaning, including the knowledge systems and educational structures of various disciplines) hinders the dissemination of knowledge. The scarcity of educational resources objectively results in very few students (the bearers of new inspiration) gaining access to higher education. The rigid selection mechanisms merely assess mastery of existing knowledge.

The education and selection systems have transformed the current situation from merely constructing towers to competing to build taller towers than others.

An extreme imagination: What if a first-grade student's first lesson involved learning how to use calculators, GPT, and other intelligent devices? Then, in middle school, they were taught calculus applications on computers. And during college entrance exams (such as the 高考 in Shanghai, where calculators are already allowed), students could freely use computers, the internet, and large language models to assist with their answers. Could this open up a whole new world?

In the examinations of natural sciences, cheating doesn't exist; in fact, the very act of testing is a means of detecting cheating. However, when more people collude in deception, the pursuit of truth takes a step closer.

2.Conclusions

Conclusion 1: HDR filming technology serves as an excellent example for humans to understand the limitations of their own sensory perception and the limitations of observation tools. (A detailed explanation of this content is provided in another document.)

Conclusion 2: The limitations of innate human sensory perception, recording tools, display tools, and narrow-sense language constitute the greatest obstacles to human progress. A significant amount of information is lost during recording (analog-to-digital conversion), and display tools (digital-to-analog conversion) cannot fully reveal the information that has been recorded. Moreover, most of human wisdom can only be mapped (analog-to-digital conversion) onto narrow-sense language. The characteristics and limitations of narrow-sense language make it exceptionally challenging for humans to express their imagination and inspiration.

Conclusion 3: Narrow-sense language appears internally consistent but is riddled with flaws. It necessitates new definitions, symbols, vocabulary, grammar, and even new linguistic domains (such as mathematical or chemical languages) to explain novel concepts. As new definitions, symbols, words, grammar rules, and linguistic domains emerge, the realm of the 'unknown' expands rapidly. Learning narrow-sense language becomes a significant burden for every human from birth.

Conclusion 4: Narrow-sense language is fundamentally defined by human innate sensory perception, yet the laws of the natural world are not inherently related to human sensory perception. In fact, narrow-sense language has no direct correlation with the natural world's rules. We can only attempt to accelerate the expansion of narrow-sense language faster than the expansion of the 'unknown,' but this is an impossible task. The future role of narrow-sense language in scientific research should be to inspire inspiration rather than rigidly demand precise descriptions and definitions.

Conclusion 5: Education resources are extensively squandered on interpreting and assessing mastery of narrow-sense language. As 'narrow-sense language inflation' accelerates, high-quality educational resources perpetually remain insufficient.

Conclusion 6: Human learning capacity is extremely limited. As narrow-sense language undergoes accelerated inflation, polymaths and generalists become increasingly scarce. The time for researchers to achieve results approaches human lifespans. Humans are left with no choice but to specialize in narrow-sense fields, losing the possibility of broad interdisciplinary understanding.

Conclusion 7: The scarcity of educational resources makes student selection inevitable, and the criterion for selection is mastery of narrow-sense language. While this has significant implications for theoretical applications, whether this filtering criterion can specifically identify 'individuals with high-value inspiration' remains a topic for discussion. Nevertheless, it is certain that this filtering standard objectively significantly reduces the overall 'inspiration quotient' among those who receive higher education.

3.New Definition

"Narrow-sense language" refers to the organized combination of irregular curves in the visible light spectrum and sound waves, following specific rules (such as those found in Chinese, English, or mathematical language rules)

"Quasi-Narrow-sense language" refers to graphics, images, videos, and audio that can be converted into digital signals for storage and distribution.

"Broad-sense language" refers to the entirety of results analyzed by organs from signals that appear in all nerves, such as photoreceptor cells, cochlea, cochlear implants, peripheral receptors, etc. It is not the nerve signals themselves.

The "broad-sense language" perceived by an individual, if it wants to be transmitted and recorded, can only be carried by narrow-sense language and quasi-narrow-sense language, that is, narrow-sense language and quasi-narrow-sense language carry all human wisdom. The process of mutual mapping and inverse mapping of these three is the process of human thinking, creation, and acceptance. The ability to map and inverse map is the thinking ability of humans. However, these abilities seem to have not been confirmed in relation to the breakthrough talents in the ideal. In my opinion, apart from the obscurity and bloatedness of narrow-sense language, the biggest reason is that the foundation of narrow-sense language is laid by human native receptors. And the human native receptors are separated from the "real world" by multiple mappings, resulting in irreparable distortion, which makes the foundation of narrow-sense language incomplete. The reason for its obscurity and bloatedness is precisely the "new discoveries, new definitions, new languages, new symbols, new grammars, new vocabularies" that keep appearing when building high-rises on an incomplete foundation. These "new things" will definitely bring new unknowns after they are born, and the speed of "narrow-sense language expansion" will never catch up with the speed of "unknown expansion".

4.Extended reading on the unstable foundation of narrow-sense language

Humans have arms. When a person deliberately raises their arm, the entire process of the arm being raised to the "ideal position" defined by "broad-sense language", the result of the analysis of the brain after the nerve signals

appearing in a large number of receptors in the body such as the retina, arm muscles, etc. (“broad-sense language”) is the “actual position” of the arm you feel. But the “ideal position” cannot be defined by the combination of narrow-sense language symbols, this is the category of “broad-sense language”. If you try to explain the meaning of “existence”, “arm”, “position”, “raise” in narrow-sense language, you can only go around in circles within narrow-sense language and it is inconsistent (the appearance of countless paradoxes). Can you describe a flower you have seen in your mind (including its mass, scent, color, contour, radiated heat, etc.) through narrow-sense language? In the process of your description, is the flower still that flower?

5.Quasi-Narrow-Sense Language

Limitations of Quasi-Narrow-Sense Language:

For observational equipment that does not match the range of human native sensors, humans have chosen the observational range with narrow-sense language (the sixth and seventh mappings in the first section of another document discussing HDR filming technology). When viewing the observation results, it is necessary to use narrow-sense language (shooting nature, location, time, angle, wavelength range, etc.) to explain the observation range, otherwise the observation results are unreadable.

The Specificity of Quasi-Narrow-Sense Language:

Quasi-Narrow-sense language has a certain relevance to the “real world”, while narrow-sense language does not.

6.Mutual mapping between quasi-narrow-sense language and narrow-sense language:

The conclusions of narrow-sense language derived from quasi-narrow-sense language (experimental results after observation) are in fact irrelevant to quasi-narrow-sense language. This will fall into the quagmire of “context”, trying to use complex “context” to limit the scope of application of narrow-sense language conclusions. If you use “why” for infinite nesting, in the end, the real “primary problems” are all unknown.

7.The main points, suggestions, and countermeasures of the entire text

The main purpose of this article is to guide the focus of human work and life from zero-sum game among humans (内卷) to the study of natural sciences.That is, it changes from grabbing fruits from others to asking for answers from natural sciences.

If the unknowns of nature (such as science, engineering, agriculture, and medicine) are the greatest threats to humanity, then we should simplify scientific education like children’s programming, discard the cumbersome narrow-sense language system, and shift the focus of education from verifying the mastery level of past knowledge (computational skills that can be replaced by devices, etc.) to questioning frontier issues. The research focus of the most cutting-edge issues should be advanced to general graduate students or even undergraduates (the emergence of the Internet and large language models greatly reduces this difficulty). This will significantly increase the base of inspiration (“Broad-sense language”).

During the transition phase, due to the limitations of current laboratory resources, reasonable academic barriers should be maintained. The owners of experimental resources are the “evaluators” for the rational allocation of these resources, assessing which inspirations should be verified with limited resources.

As scientific education further sinks, and the research focus further sinks, after the transition phase ends, the emergence of more curiosity and profit-seeking mentality makes commercial frontier laboratories possible. Commercial laboratories undertake experimental orders from lower-level scholars or private enterprises and the public. The influx of capital expands the commercial laboratory and experimental equipment market, and the scale effect accelerates the iteration of experimental equipment like consumer electronics, freeing laboratories without commercial prospects from the constraints of research funds. Ultimately, it guides the focus of human work and life from a zero-sum game among humans (内卷) to the study of natural sciences. That is, it changes from grabbing fruits from others to asking for answers from natural sciences.

If we can make good use of human curiosity, inquisitiveness, and profit-seeking mentality, and regard self-realization, fame, and excess profits as fruits hanging in front of personal goals, the possibility of realizing this new business model is very high.