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Review Article

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Why is It Possible to Find Meaning in Humankind's History?

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Abstract

This paper answers a narrow, quantitative question: Is there meaning in humankind's history, meaning which can be measured and verified by independent researchers, and why is it possible to find that meaning? A brief critical review of a 'seach for meaning in history' shows that there are only a few twentieth-century or twenty-first-century papers discussing quantitative meaning in humankind's history. The authors of those papers were using traditional history, history of events, which prevented them from getting a suitable dataset needed for finding high-resolution quantitative meaning in humankind's history. That review was a pivot away from the history of events to something else. This paper explains that deep-level history, which is not a history of events, exists. The methodology of using deep-level history to build a manageable dataset for quantifying humankind's history was explained. A possible area of future research is suggested.

Keywords: Meaning of History, Super-Invention, Deep-Level History, Subsurface History, Humankind as a Single Entity, Super-Invention Taxonomy

1. Introduction

Over 200 years of searching for the meaning of humankind's history have not provided any high-resolution meaning that can be measured and validated by independent researchers. That poses two questions: Is it even possible to find a quantitative meaning of humankind's development? And, if yes, why was it not done before? This paper answers both questions. While the comprehensive dataset of 315 super-inventions was first cataloged in *Directionality of Humankind's Development. History* book. the present work provides the necessary formal proof that such a dataset constitutes a valid, quantifiable 'meaning' of humankind's history, distinct from narrative interpretation [1]. This is a conceptual paper intended to establish the theoretical foundations for a high-resolution, quantitative model of the multi-thousand-year history of humankind.

1.1. Framework of the Search for the Meaning of Humankind's History

The current consensus among historians and the general public is that humankind's history began with the invention of writing, and before that, there was a prehistory. The first writing appeared at 3200 - 3100 BCE [2,3]. Which means that, per consensus, humankind's history began approximately around 5150 years ago. With that many important developments in humankind's history, like the Agricultural or Neolithic Revolution, being thrown into prehistory. In this paper, we consider humankind in a narrow sense, namely the humankind of modern *Homo* sapiens, rather than the humankind of the entire genus *Homo*. We also define the boundary between the prehistory and the history of humankind as approximately 41900 BCE to 41500 BCE. The last Neanderthals died at 41500 BCE, and the first symbolic painting in a known cave in Indonesia was created by *Homo* sapiens at 41900 BCE [4].

1.2. Qualitative Meaning

For the last several centuries, there has been a broad search for the meaning of humankind's history. Many well-known thinkers joined this search. A detailed review of such a search was provided [1,5]. We can mention in this regard Karl Marx and Friedrich Engels, Arnold Toynbee, Oswald Spengler, Hegel, Pierre Teilhard de Chardin, Vladimir Vernadsky, Nikolai Berdyaev, Karl Popper,

and Yuval Noah Harari [6-14]. When discussing the meaning of humankind's history, most of those thinkers were focused on the qualitative meaning of humankind's history. Some authors touched on quantitative aspects of the meaning in localities, geographical or temporary, but not in the history of humankind as a whole.

1.3. Quantitative Trends Utilizing History of Events Approach

Not many people will agree on the same definition of what history means, and specifically what the meaning of history is. For this research, we use the definition provided by [15]. "If the historical trend is revealed, then the meaning is revealed." Specifically, we are looking for quantitative trends (measurable, numerical, and time-dependent). The search for such trends, initially based on lists of important events, began with the publication of Carl Sagan's Cosmic Calendar in 1977 [16]. Similar lists were later provided by Theodore Modis, Alexander Panov, and L Grinin, A Grinin and A Korotayev [17-19]. There are two problems here. Some of those works focus not only on events in humankind's history but also on broader events in Big History. In such cases, the problem of the compatibility of the values of different events arises. If that problem is not resolved, then, in Carl Sagan's Cosmic Calendar, we see the Big Bang and Maya civilization ranked on the same level. The fundamental limitation of such quantitative models is not just the scarcity of data points, but data inconsistency. By mixing biological milestones (e.g., the origin of life) with cultural ones (e.g., the Agricultural Revolution), these models create an equivalence that prevents a pure analysis of human agency. This paper proposes a dataset where every entry meets a strict 11-point 'man-made' criteria, ensuring the resulting model measures a single, consistent phenomenon: human creative output. The other problem is that all those authors were using conventional history, which is the history of events. This allows them to gather only a small number of data points. As a result, a small dataset spread out over a multi-thousand-year timeframe becomes a low-resolution temporal model.

For example, we can look at the list provided in Grinin L, Grinin A, and Korotayev A [19]. The authors listed 20 phases of 4 production principles (we skipped here possible future phases, which are also provided in the article). Those phases are long-lasting events that go back-to-back. The list begins at 38000 BCE and ends at 1995 CE if we count events by their start dates. Or we can say that the list began at 33000 BCE and ends at 2028 CE, if we count those events by the midpoint dates of the phases. That implies an average time lag between phases of 1999 years or 1649 years, depending on how we count. Of course, the trend is not linear, and the minimal time lag, which is the time lag between the last two data points, is 26 years or 86 years, depending on how we count. Those numbers tell us that this model is a low-resolution temporal model. While the 'history of events' approach forced previous researchers to accept an average time lag of ~1,650 years between data points, the super-invention taxonomy provides a high-resolution alternative. With an average lag of only 140 years across the 44,000-year Sapiens run and shrinking to sub-annual levels in the modern era, this methodology allows for the application of high-frequency statistical analysis to the multi-thousand-year history of humankind that was previously impossible in historical studies.

1.4. Conventional History of Humankind

Since Herodotus, for over 2500 years, the history of humankind has been considered the history of events that happened with people. The problem is with the sheer volume of such events. There are thousands and thousands of notable events. Moreover, there are many interpretations of those events. That makes it almost impossible to shrink the number to a manageable, high-resolution dataset. At least, nobody has done it yet.

- **Why is it Possible to Get a Manageable Dataset for the Meaning of Humankind's History?**

Let us take another look at how humankind's history might be interpreted. Let us attempt to dig deeper and examine the multi-layered model we are proposing. We will number the levels from top to bottom. For any two adjacent levels, the lower level governs what takes place on the upper or first level. On the uppermost, or surface, level, we will place human actions. On this same upper level, we also observe the results of those actions, namely, events. Let us designate this first level as the Events Level. These actions are based on people's desires and needs. In most cases, people must also consider cooperation and competition. Collectively, desires, needs, cooperation, and competition drive people to act. Let us place people's desires, needs, cooperation, and competition on a second level. We shall call this the Motivation Level. The Motivation Level governs the Events Level.

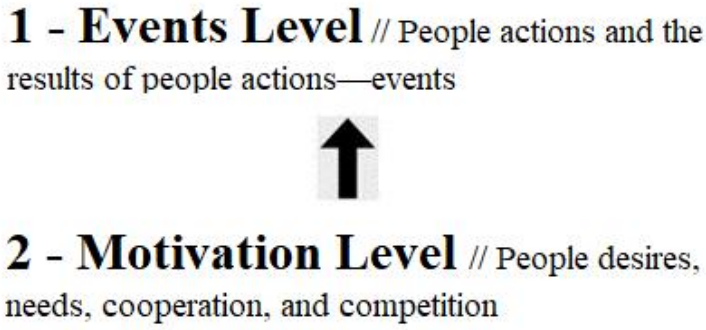

Figure 1: Two-level Model of History of Events

Typically, analyses and descriptions focus solely on what transpired at the first level. Beyond this, there exists a vast body of narrative and speculative descriptions of what took place at the second level. I use the term "speculative" because, even regarding ourselves, we do not always fully understand what we want or why we act in a particular way let alone comprehending what was going on inside the minds of people who died long ago. Everything we studied in history class at school, everything we read in books, magazines, or newspapers, or see in historical films and videos corresponds to levels 1 and 2. In other words, traditional history is described at levels 1 and 2. So, we have two levels. Are these two levels sufficient? No.

1.5. The Deep-Level or Subsurface History

Wherever people act or wish to act, they take other factors into account. There are limits to what we can and cannot do. What people may desire, or what they may need, is likewise constrained. This is not a widely known fact. These constraints vary across specific periods in humankind's history. Virtually no one has investigated this before. Let us consider an example. If you wish to go to the cinema and watch your favorite film, are you able to do so? Of course, you can. If the movie you want is not on the cinema's schedule, you can watch it online on your TV or computer. Your desires can be fulfilled very easily and quickly. Now, imagine that you are living in an environment from a thousand years ago in the year 1000 CE. Would you be able to fulfill your desire to go to the movies and watch your favorite film? Under no circumstances! Cinema and television did not exist at that point in human history. Your specific desire would have run up against a stone wall. At that time, your wish could not have become a reality anywhere on Earth, under any circumstances. There is much to think about here. You could not even have harbored such a desire. Such desires simply did not exist at that time. In the year 1000 CE, there was no way to go to the cinema to watch movies. Cinema did not exist throughout the entire span of human history from the very beginning, at least up until 1000 CE. We know this now. But no one knew it in 1000 CE, or earlier. The absence of such a possibility severely limited people's desire. Consequently, the ability to perform certain actions was also restricted at that time.

Later, people created films, movie theaters, and televisions. "It could be said that humanity created for itself new super-inventions, new possibilities." In doing so, humanity significantly expanded people's capacity to act, and even to desire. The presence or absence of such capabilities/super-inventions is of decisive importance to humanity. This effect can be either liberating or constraining. Those capabilities emerged from humanity's great creative acts. From the moment of their creation, new super-inventions are added to the existing arsenal of super-inventions. The third level is the Super-Inventions Level that is, of the capabilities and creative acts involved in generating new types of super-inventions. These capabilities stimulate not only people's capacity to act but also their desires and needs. In all instances but one, these capabilities were created by human beings—that is, by humanity itself.

- **Which History is the Topic of Our Research?**

The history of humanity we are examining is the history of what occurs at the third level.

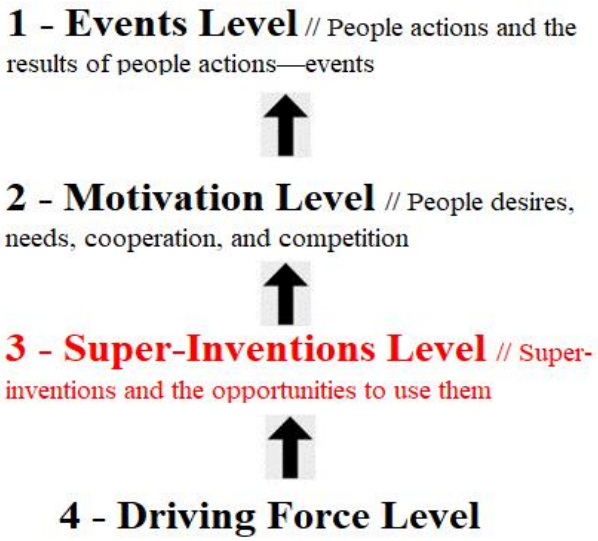

Figure 2: Four-Level Model of History. History of Events – on Levels 1 and 2. Deep-Level History – on Level 3

We can say a few words about the next the fourth level. What force impels humanity to create new possibilities for itself? In science, there is a rarely used concept: the driving force. For instance, most people have heard of the driving forces behind biological evolution. We hypothesize that there is a driving force behind the development of humanity, and that it is possible to identify this driving force. "We shall situate the driving force or forces of humankind's development at the fourth level, the lowest and most fundamental of all." We call this level the Driving Force Level. Our models examine humanity and its history at a deep,

third level. This is the level of super-inventions or capabilities that humanity has created for itself, as well as the creative acts by which humanity brought these capabilities into existence. Issues related to the driving forces are discussed in detail in my book [1]. However, this is not a focus of this paper. Of course, this three- or four-tiered framework of events in humankind's history is merely an auxiliary construct, designed to help us view our history in a new light.

1.6. Naming of the History

We call the history of humankind at the third level the subsurface history to distinguish it from the conventional history of events, which occurs at the first and second levels. We also call it deep-level history. We cannot use the term deep history, as it is already reserved [20]. We can use the terms deep-level history and subsurface history alternatively.

1.7. Criteria for Super-Inventions

While traditional history is an 'open system' where any event can be deemed significant, the following 11-point criteria transform historical analysis into a 'closed system.' This ensures that every data point in the taxonomy is functionally equivalent, allowing for the first time a consistent high-precision measurement of humankind's creative output within multi-thousand-years' timeframe. As of 2026, we have a list of 315 super-inventions. The value comparison problem was resolved by introducing criteria for classifying super-inventions.

Here are the latest criteria. A humankind's super-invention, or simply a super-invention, is

(1) A useful or valuable thing, tool, quality, system, research, or method used by people or that people can use,
(2) Is a subset of a particular family of super-inventions;
(3) Covers different aspects of the topic expressed in the name of the particular family of super-inventions;
(4) Is not limited in time from the moment of emergence;
(5) Unlimited in use;
(6) Unique among super-inventions;
(7) Man-made;
(8) Created for the first time after the beginning of humankind's history;
(9) Has, have, may have massive, preferably global or near-global use;
(10) Gives the most generalized idea of the subject; \
(11) A super-invention must provide significant added value to the family of super-inventions to which it belongs, over prehistoric activities or in the family of super-inventions.

Every item in these criteria is necessary but not sufficient. These 11 criteria are designed to eliminate most of the subjective narrative bias. By applying this checklist, any independent researcher can arrive approximately at a dataset close to our dataset of ~315 items, moving the 'meaning of history' from the realm of philosophy into the realm of precise science. The remaining subjectivity with the super-invention approach can be measured and assessed.

1.8. Why to Use the Term Super-Invention

Deep-level history is a new field of research. Therefore, not all terms in this field are established terms. In my previous 2020-2024 published papers on deep-level history, the term man-made resource was used [1]. From 2026 onward, we are using the term super-invention instead of man-made resource. Here are a couple of examples of super-inventions from the list of 315 super-inventions: Philosophy and Elevator. Philosophy is a non-technical super-invention, and an elevator is a technical super-invention. Philosophy emerged at 624-545 BCE [21]. As of April 17, 2026, the term philosophy in Google search returned around 475 million results. Elevator emerged at 80-72 CE [22]. As of April 17, 2026, the term elevator in Google search returned around 276 million results. In both cases, a huge tree of secondary inventions, expansions, modifications, and usage grew from the roots (super-inventions). The increase from a single super-invention to a whole area of its usage is multi-fold in all cases.

1.9. The Meaning of Humankind's History

The dataset of super-inventions, along with the deduced quantitative meaning of over 40 thousand years of humankind's history, was presented in Torvich, V. 2024 [1].

"*The meaning of humankind's history is that humanity is moving towards increasing the arsenal of resources [super-inventions] created by humankind for itself… Humanity is developing not according to a linear law nor to a cyclical law. The curve of humankind's development is non-trivial and changes over time*."

1.10. Features of Deep-Level History

There are multiple features of deep-level history that all contribute to this history being a good tool for quantitatively analyzing humankind's development and history. Super-inventions are behind-the-scenes actuators driving humankind's history. Due to their fundamental nature, the total number of super-inventions during multi-thousand years of humankind's history is small enough, 315 as of now, to be manageable. At the same time, this number is big enough to be used in the mathematical processing of the dataset. There is a data inconsistency problem in lists like Carl Sagan's or Alexander Panov's. Using the same criteria for all super-inventions in our approach ensures that the data inconsistency problem is largely resolved. "Furthermore, the size of our dataset is sufficient to employ a hierarchical classification schema with at least four levels, which differ numerically from each other." That radically reduces the number of possible misclassifications of super-inventions. The names of levels in this hierarchical classification schema, from bottom to top, are super-inventions, families of super-inventions, classes of super-inventions, and domains of super-inventions. With over 300 super-inventions in the dataset, we have a large enough dataset across those four levels to analyze the development of humankind separately at each level.

Next, in the conventional history of events, every event is a one-time event that cannot be reused. You cannot use the French Revolution ten thousand times. Deep-level history is the opposite. The elements of that system are super-inventions, not events, and the opportunity/possibility to use them. After super-inventions like

sculpture, philosophy, or the elevator emerged on their emergence date, the opportunity to use those super-inventions continues to exist until humankind exists. People's use of sculpture, philosophy, elevator, or digital technology does not exhaust the opportunity to use them again. That feature allows us to quantify trends in humankind over time, such as the accumulation of super-inventions or changes in the rate of super-inventions' emergence. There are no mentions of social structures, geographic or environmental details, or non-quantifiable subjective entities such as progress, morality, or happiness in the criteria we used. That allows us to gather super-invention data points as of now and at 40,000 years ago, when very few people lived on Earth and social structures and people's morality were very different from what we have in current humankind.

Of course, our dataset is not 100% objective for multiple reasons, one of which is the inevitability of imprecision and changes in known dates throughout humankind's history. However, it is important to note that we gathered a big enough, over 300 data points, dataset, which allows us to move from unquantifiable subjectivity, which exists with terms like morality or progress, to quantifiable subjectivity of our data points. Our dataset allows us to use statistical methods to evaluate its sensitivity to misclassification errors and to imprecision in historical dates. With a dataset of this size, we can quantify the level of sensitivity and, therefore, the robustness of our analysis and conclusions.

The discovered dataset of 315 data points spanning 44,000 years of humankind's history is sufficient to draw and analyze a high-resolution trend of humankind's development [1]. That implies an average time lag of around 140 years between data points. However, the trend is not linear, and the time lag between the last data points shrinks to less than a year. That is a high-resolution temporal model. This 140-year resolution is roughly 11 times higher than the ~1,600-year resolution of previous quantitative models. Deep-level history and conventional history of events are not competitors. They are companions. Nobody prohibits anyone from using deep-level history and the history of events together to enhance the narrative advantage of the history of events with the analytical advantage of deep-level history, and vice versa. Moreover, deep-level history, with the use of auxiliary data such as the location where super-invention emerged or was accepted, allows drawing not only trends for humankind as a whole but also local trends.

2. Results and Discussion

The methodology describing why it is possible to find meaning in humankind's history was presented. A comparison between the traditional event history and deep-level history was done. Criteria for super-inventions were posted. The area of applicability of deep-level history was outlined. "The absence of wars, revolutions, dynasties, and important figures in deep-level history can be a limitation for people inclined to see history mostly through the narrative lens." That absence, however, is among several features that make the field of deep-level history a precise scientific research domain.

3. Conclusion

The explanation was provided of why it is possible to find meaning in humankind's history and why a deep-level history of super-inventions is the right tool for such an analysis. That is a revelation, as it forms a basis for further usage of deep-level history and further analysis of important trends in humankind's history. The discovered quantitative meaning of humankind's history is not the only trend in humankind's development that can be found using the suggested approach. The future research can include finding other trends, for example, the trend of changes in the ratio of technical vs. non-technical super-inventions over time.

Author Contributions

Tomashevich Yury – Everything.

Data Availability Statement

Data available upon reasonable request.

AI Usage Statement

AI tools were used to transform references into APA 7 Edition style only.

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