Walentin W. Wasielewski

# MAN
# DEATH
# ETHICS

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# Contents

# prolegomena I

1. Good and evil are not entities, but parameters. The only moral fact is death, and morality is the attitude towards death: everything that leads the system to destruction is evil; everything that overcomes the death of the system is good. The open-question argument is removed without appeal to a naturalistic fallacy.

2. All problems are linked to death. What does not lead to death is not a problem. Any obstacle, barrier, difficulty, or limit is a problem for us only if we know how it can kill us.

3. To understand death as a problem, we need a system of tenses. Any understanding is the transfer of a real event as an abstract symbol from the past to the future, and then the perception of the abstract future in the real present. The only known system that can operate with time is the human language. Human is the only socio-cognitive system that has understood *death as a problem*.

4. Ethics is a method of development.

5. The purpose of development is to overcome the problem — to obtain freedom from the limitations of death. Beginning with situational problems: hunger, cold, diseases, and external threats; up to the absolute problem: death as such. Overcoming these problems breaks Hume's guillotine not by logic, but by the phenomenon of will. Overcoming is a transition from a naturally existing limit *is* to prescribed by a free reason *ought*.

6. *Survival* and *overcoming death* are not the same thing. Survival is the avoidance of death, the selection of forms and

behaviors that allow not to face the problem. Death for Natural Selection is a tool of development, and Death for overcoming is a subject of development.

7. Achieving the development goal is the transition of the system to a new qualitative state. A New World and a New Man, free from the problem of death, will have no need for morality and ethics.

# prolegomena II

1. The act of understanding death gives birth to the essence of human being. Based on this definition, any social-cognitive system that understands death will be human, ranging from any species of living beings to an artificial intelligence.

2. Understanding is possible only in the system of tenses of the language. The system of tenses is the defining quality of human language, unlike all other information exchange systems, from natural RNA/DNA to animal communication systems. In fact, the abstract time machine of language is the mind.

3. Reason makes it possible to relate to death. Understanding and reasoning about what leads to death or what overcomes death provides a human an attitude towards death.

4. The attitude towards death is a dichotomy of good and evil. Thus, *good* and *evil* are not entities, but parameters of the relationship to death as a single entity.

5. Ethics is a method of development. Knowing the limit and its parameters, we get the opportunity to overcome the limit. Now, the capabilities of the available tools are never enough for a human. If it is known how the function can be performed better or worse in relation to death, then the development flywheel is launched towards a goal.

6. The goal of development is to overcome death. All problems come down to death. What does not lead to death is not

a problem, does not require ethical evaluation, and does not require development and overcoming.

7. By achieving the development goal of the system, the system then transitions to a new quality. After overcoming death there will be no need for an attitude towards death — no need for morality or ethics and no need for development and overcoming. The New World will define new parameters, limits, and essences for the New Man — a Superman.

# prolegomena III

1. Subject: the phenomenon of *awareness of death*. Hypothesis: awareness of death is a unique phenomenon in nature, which gave rise to a system of a new quality, *human being*. Only the awareness of death makes it possible an attitude to death.

2. The attitude to death forms morality as an experience of causes of death and ethics as a method of overcoming death. The ethical method gives humanity a unique ability to overcome problems, causes of death. Thus ethics is a method of development based on a hypothesis of freedom.

3. The wild nature has no awareness of death, no attitude to death and no method of development. Therefore, nature develops through natural selection of random errors. So death is a tool for the development of nature. It is impossible to overcome *death as a problem* by *death as a tool*.

4. Humanity is a socio-cognitive phenomenon, a *system that has understood the problem of death*. So we break the binding of a concept of human to the animal species *Homo Sapiens*. Any socio-cognitive system that understands the problem of death can be called a human being.

5. The *understanding* is a system of abstract symbols in the system of tenses. The understanding of any phenomenon necessarily implies the movement of an abstract model of this phenomenon in abstract time relative to reality. Therefore, mathematics without a system of tenses of its abstract symbols is not a full-fledged language.

6. Development is a transition from one quality of developing phenomenon to another, by overcoming the limits of phenomenon.

7. The idea of development for a human being is overcoming the problem of death. Beyond that limit will no longer be a human, but a Superman, or New Man. The values, ideas and problems of the New World will be qualitatively different.

# Aristotle's Mistake

*To be, or not to be, Ay there's the point…*
*— William Shakespeare, Bad Quarto*

Considering Aristotle's work Nicomachean Ethics, I would like to draw attention to a key point that characterizes the generally accepted and erroneous approach in all studies of the question of good and evil to the present day.

Aristotle looks at the good as an entity: «*…every action and pursuit, is thought to aim at some good; and for this reason the good has rightly been declared to be that at which all things aim.*» As if good is something that can be defined; a phenomenon that can be arrived at; as if it were some kind of independent entity. But this is not the case.

This position is an error that reduces all ethical reasoning from Aristotle to George Edward Moore to invariably contradictory results. Reasoning exclusively about the good implies simplification: as if evil is something opposite to good, a kind of *good with a minus sign*, as *antigood*. But evil is not equal to *good with a minus sign*, as well as *evil with a minus sign* is not equal to good:

**EVIL** ≠ **— GOOD** or **GOOD** ≠ **— EVIL**

I claim that good as the entity, that served as the starting point in Aristotle's reasoning, was chosen incorrectly. It is wrong to talk about good outside of its constant connection with evil, endowing them with the properties of certain entities independent of each other. We should not forget that good and evil, benefit and harm, virtue and vice are a dichotomy. So, when it comes to such a phenomenon as dichotomy, the representation of subclasses as independent entities entails the loss of the general meaning of the dichotomizing system,

the dichotomizing entity. The loss of the meaning of the system of good and evil occurs the moment we replace one true entity with one of its subclasses, while endowing the subclass with a complete essential, or complete object character. By doing that, we take ourselves away from the true subject on the research of ethics. If we do not have the true essence of a subject, then we are liable to talk about anything except the truth. It is sad that philosophers, following Aristotle, persistently repeat this mistake even when the dichotomy of moral categories is known to everyone.

*Fig. 1. Graphic dichotomy: the trick is that only the black subclass is drawn here, and the white one, without being drawn at all, manifests itself.*

Without being separate entities, good and evil cannot be goals in themselves that we could strive for. And for this reason, the good has wrongly *«…been declared to be that at which all things aim.»* Good and evil are parameters, level pointers, or relationships that allow us to come to the desired goal or desired entity. Thus, it is seen that both the substratum and the result of the action of a moral choice is that to which the attitude is expressed using the concepts of good and evil. It re-

mains for us now to find out what kind of fundamental essence can manifest itself in almost any phenomenon around us.

Let's look at this using the example of any measuring instrument that we use: speedometer, altimeter, thermometer, or fuel quantity indicator. These measuring instruments are excellent models of the «ethical method», their function can reveal the mechanics of its work. So, we may say that measuring instruments is designed primarily to show whether a process controlled by us either exists or is dying. On the instruments, we see on one hand the permissible range of the existence is the process that we launched, its existence right now. And on the other hand, the unacceptable parameters of the existence is the process when it is heading for death. And the danger of this death is important for us, because it is important to us that the existence of the process continues to exist.

If you bake a pie, then when you control the baking by the thermometer, the process is already underway, the pie is already baking and the process already exists. Now, consider the baking process chemically. As always, baking is a Maillard reaction: a chemical reaction between amino acids and reducing sugars that gives browned food its distinctive flavor. Ideally, it exists in the range from 110 degrees Celsius to 140 degrees. A complete taste is formed, which represents numerous rearrangements of molecules, and as such, an ideal brown crust appears along with a characteristic pleasant aroma. If the temperature is less than 110 degrees, the Maillard reaction will be insufficient, and there will be no baking as we know it — a brown crust, a full taste, and the smell of the pie. It will just be a boiled, half-baked dough, raw and tasteless pie filling. On the contrary, above 140 degrees there will be caramelization of sugars, and above 200 degrees and the combustion of carbohydrates — so baking will also die.

In this example, we see that we have indicators of good for baking: from 110 to 140 degrees. We also have indicators

of evil: less than 110 or over 140 degrees. And it seems that we naturally strive for the good, while avoiding the evil. Exactly as Aristotle told us. But is this really the case? Can we say that we received a *goodness as entity* at the end of the process, if it satisfied us? No, we got good pastries and nothing else. Even a good, delicious pie is not «*...to be that at which all things aim»,* it is not a goodness as entity. If we burn the pie, we do not get the evil as entity either. The only thing that happened was that the pastries that we needed is died, but nothing else.

So, by controlling the baking with the parameters of good and evil, we did not strive for good as such. Just like we didn't really embody any evil if we chose not to control the baking properly and burn the pie. In essence, we used the ethical method on the measuring instrument to prevent the death of the process that was important to us. ***Therefore, ethics is exactly the method of precisely overcoming specifically the death that threatens the existence of the process we need***. This technique can be applied to any life situation.

The entity we are looking for, which we track by ethical parameters on the measuring instruments, is precisely the *threat of death* of the process, but not the *presence of existence*. It is important to grasp this difference. We already have the existence of the process, which is commonly known as existing right now. But we will respond to the signal of the parameters only in response to possible process problems, which the measuring instrument signals by showing unacceptable parameters on the scale.

Thus, when we see a favorable range of parameters, this can be thought of as is a goodness for the process, rather than a good as entity. In other words, a parameter of the essence of the process. And when we see an unfavorable range of parameters, an evil for the process appears, but not as an evil as entity. It is an undesirable parameter for the essence of the process.

Let us consider one more example. A plane going 200 km/h will be too slow and dangerous — risking the plane to fall

into a tailspin every second and lose its footing, and then die. However, that same speed for a car (200 km/h) will be dangerously too high. There will be increased threat of collision, human death, and destruction from an accident. So, there is no evil, nor good, inherently in the *200 km/h* speed itself. It is obvious that our attitude to this speed will change depending on the situation, as demonstrated just above.

By itself, the figure on the altimeter indicates the position of the aircraft above the ground. And the figure becomes evil only when it indicates a position that means the possibility of the death of the aircraft, and good if the flight can continue safely. The pilot applies an attitude to the figure: knowing which of are good and which are bad makes an effort towards the indicators of good on the instruments and avoids approaching the indicators of evil. So, the pilot does not achieve good by itself, and avoids not evil as a separate entity. It can also be mentioned that the same numbers on the altimeter can mean evil for the aircraft in one situation, and good in another. There is no contradiction in this and the situation is clearly understood by us.

From the reasoning about the indicators, it also follows that for any indicator, the index of evil is important. Sometimes, the device generates an alert light for the danger indicator, which simply signals the loss of the goodness in the process. And, as in Figure 1, even if there is no good on such an indicator, it is still always present there by *not burning alarm* mode. So, in order to know the good, we always need an indicator of evil. And the most important thing is that we are convinced of the inseparability of our parametric categories. It is impossible to be sure of getting the result of the process if guided only by the indicators of the range of good. Therefore, on any device, the index of evil is equally important to us. Parametric good and evil are inseparable — that's why they are a dichotomy.

Therefore, good and evil cannot, and should not, be separated if we want to benefit from them. We always need

to know the range of both parameters in order to find the right path. If our instruments only show the range of good, then how will we avoid evil without knowing about where is it?

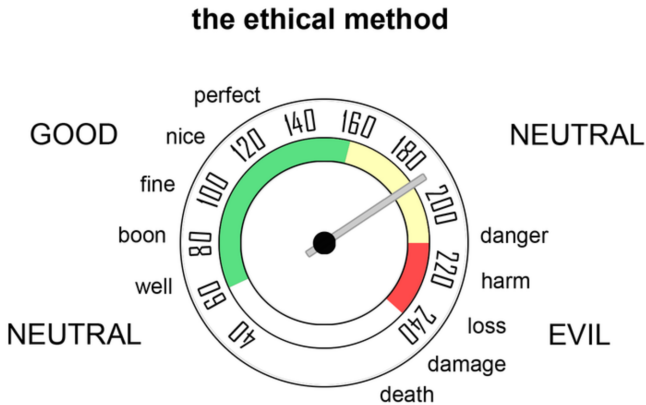


*Fig. 2. The ethical method means that the parameters of GOOD for the existing system or process are from 60 to 160, and parameters more than 210 mean EVIL, that is, they lead to the death of the system or the process.*

At this point of reasoning, it may seem to us that the ethical method boils down to the survival of an existing one, but this is not correct. The concepts of *overcoming death* and *survival* are not identical. Survival addresses first to the energy of life, which is *already exist* and is looking for a way to continue, not paying attention to problems, and not even knowing about them. Survival is the path of natural selection. The tool of selection on the path of survival is death. The higher the energy of living systems and the number of attempts, the sooner the selection system gets the right option. No matter what the problem is, it is important to find and consolidate such behavior to the point of a form of existence that does not face a problem in the first place. Indeed, although there are infinitely many problems, animals do this without any re-

search. Their instinct serves as the right way past problems, and they pay with their lives for wrong answers. As a result of the evolution of selection, all the wrong answers die, and only the right ones survive. Survivors, as it is seen, are the right answers in its purest form.

Overcoming death for a human, on the contrary, implies understanding the source of danger, and requires an investigation and research. It is possible to overcome only the obstacle that you understand, and which will be in the future. It is important to mention time, because if we are talking about the problem as a termination of existence of life, overcoming the problem is an action aimed at what is ahead. A collision with the problem already means the cessation of existence, termination of life.

Overcoming turns out to be orders of magnitude more effective than survival. Understanding and studying the problem allows you to do anything with the problem, to bypass it along any trajectory, and not just the one that was fixed by selection. It can solve the problem, transform the problem, and make it a support for further development. So, we destroyed the smallpox virus in one case. And in another case, they took an adenovirus and used it as a vector for a vaccine against COVID-19. See the diagram in Figure 3:

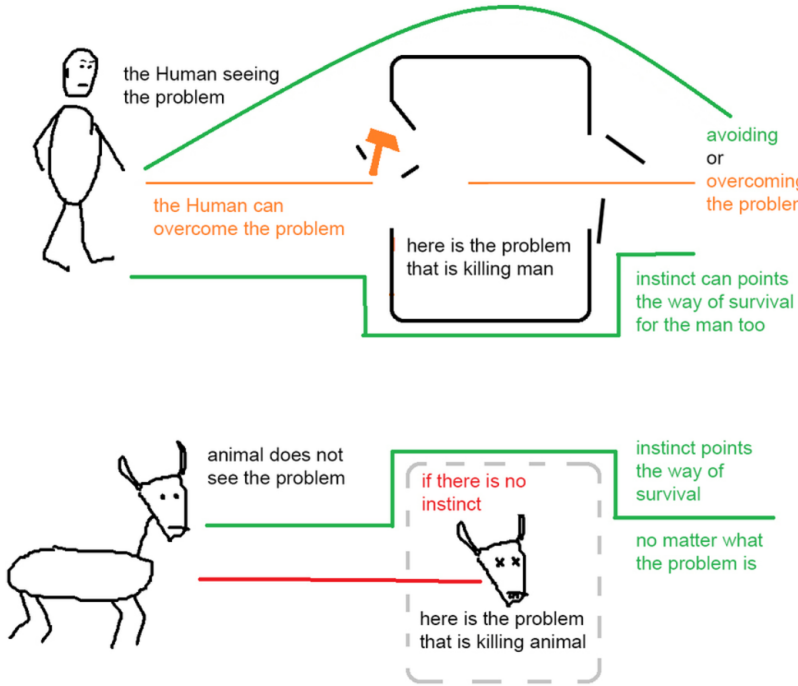


*Fig. 3. Overcoming death and survival.*

Let's look at this difference in another example. Before the advent of airplanes, people did not fly by themselves, and therefore we do not have instincts and behavioral programs selected by evolution for safe flight. But still, experienced pilots learn to recognize dangerous situations thanks to the sensations from the experience gained, and, according to the readings of the instruments. The devices on the airplane are more complicated because good and evil do not manifest themselves unambiguously, as on a thermometer when baking a pie, but in a complex ratio of indicators of different devices.

Now imagine that an inexperienced pilot is sitting in the cockpit of an airplane: he knows how to fly correctly, but he is not yet able to recognize in time how the plane goes into a dangerous mode. His feelings have not yet been fixed, and he cannot quickly understand the complex correlations of instrument readings. In this case, when there is a problem with the plane, the pilot remains calm, after all, he is alive, his instincts are silent, and he does not try to survive despite the plane steadily approaching death. Not knowing how death is approaching him, the pilot does not try to overcome the problem. Survival in its purest form does not help.

Then there comes the moment when the pilot realizes that the instrument readings are out of acceptable parameters — he learns about the problem. What actions should the pilot do? He has no flight instincts, because he is not a bird, and he cannot rely on instincts. This means that before performing actions to save the aircraft, the pilot must know exactly what problem needs to be overcome. He needs to understand exactly what the problem is. The aircraft lowered its nose too much or lifted its nose too much at a given speed and current altitude. The speed is too high or too low for the known weight and size of the aircraft. The height is too large or too small with the existing terrain, and so on. But only after understanding it will it be possible to overcome the problem; only after the pilot finds out exactly what the problem of flight is. So, we see demonstrated what the difference is between survive and overcome the problem. Of course, in ordinary life we can use both concepts in the same situation, but survival is rather an animal state associated with instinctive and reflexive activity to avoid problems «here and now» and always in the present moment. Contrarily, overcoming the problem is a purely human condition associated with understanding what is happening in the dynamics of the system of times: the future, the past and the present.

Let’s set the situation: an inexperienced pilot in a falling plane is quite motivated to live, and he wants to live, and

wants to be happy, to experience pleasure. But these desires in themselves do not motivate him in any way if he does not know about the problem that has arisen. The pilot is motivated only by knowledge of the problem.

We clearly see that the categories of good and evil show us the relation to the problem, and not to life, being, happiness or pleasure. If we start with an understanding of a separate and distinct good: life, happiness, the common good, an increase in universal pleasure, and so on — we will only come to contradictions, which will be discussed later.

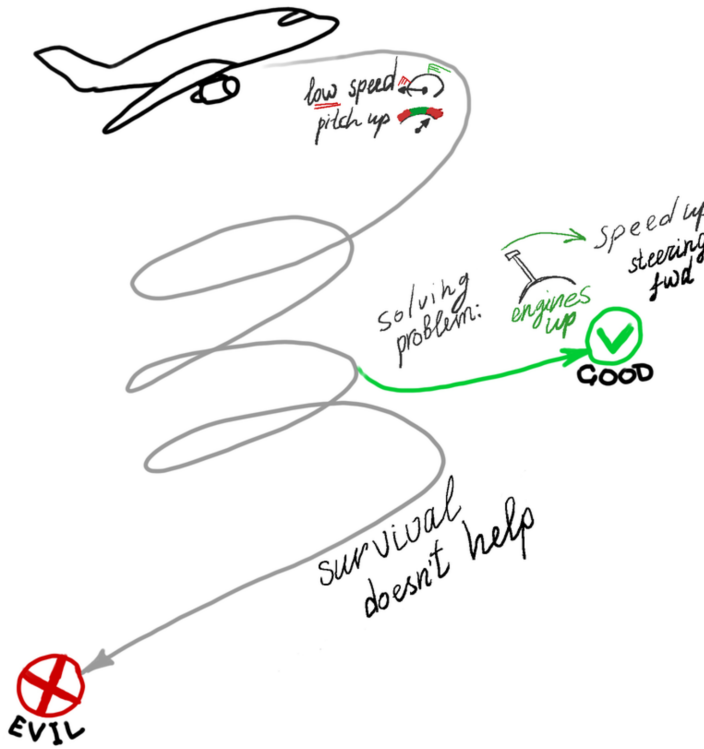


*Fig. 4. If an inexperienced pilot does not know about the corkscrew, then the desire to survive in itself will not help him in any way, because until the plane falls, nothing interferes with the pilot's life. But only a pilot who knows about the death that is rapidly approaching due to a corkscrew can take actions to avoid a future death that exists only in an abstract model and does not yet exist for him in reality. So, the knowledge of death alone is more effective than survival.*

In general, if we want to evaluate the flight as a whole, then we evaluate the ability to overcome death in the entire flight process, and not just the result of survival. Only a flight

that has not had incidents and has not suffered a catastrophe will be undisputedly good for the pilot. If there was an incident in flight, even if it did not lead to a catastrophe, but just had a threat of catastrophe, then we will call this flight bad, although the result was still survival. The fact is that we knew about the risk of death in an emergency flight, which was significantly higher than in a good flight without an accident. So, we see that ethics evaluates the success of the process of overcoming death, and not the resulting survival.


*Fig. 5. In the figure, survival corresponds to both the good and the not good, with an incident flight. Thus, good and evil does not correspond to survival, but rather expresses an attitude to the problem of death. This gives an assessment of not good to the flight with the incident.*

We can also identify the essential binding of good and evil completely abstractly. For example, in the case of a game, when one person is looking for an object in a room, and another tells him, cold — warmer — colder — hot, we understand

that we only conditionally color proximity to the goal with a certain physical connotation. So, when the seeker approaches a hidden object, warmer or colder means approaching or moving away from the goal, not the physical temperature of the goal. The desired object does not exude heat but is endowed with such a property for the convenience of communication. Therefore, the words warm / cold can be replaced without losing the meaning of the described game with positive / negative, or good / bad, and, finally, good / evil. In fact, nothing at all will change. Therefore, good and evil are not good or bad in themselves, they only allow a person to search for some fundamental essence. And this essence, as a result of the game, will not appear to us in any form of good or evil, such as the embodied negative / positive, warmth / cold, as you have already guessed.

Note, an interesting point: the result of the game resets good and evil. After finding the desired entity, we are no longer interested in these categories.

Further, it is necessary to clarify the following statement of Aristotle: «*But a certain difference is found among ends; some are activities, others are products apart from the activities that produce them. Where there are ends apart from the actions, it is the nature of the products to be better than the activities.*»

It is not clear why Aristotle defined goals in two ways: as activities and as results. In theory, only activity leads to result. Can there be an activity in itself as a goal that does not need the result generated by it? Probably, but then, if the result of such an activity-goal is still generated, can it be undesirable in the sense that such an activity-goal should always be unfinished or never ending? And wouldn't it be easier in this case to call activity-goal simply goal, and efforts that do not allow it to result — activity? At least then we won't have to mix the concepts together. When Aristotle mentions goals that exist separately from activity, what goal can we achieve without doing anything for it? Do we need a goal that does not need to be

achieved in any way? Neither by physical actions, nor by thoughts — meaning, even desire. After all, in this case, we would rather call it not a goal, but a given.

In future work, Aristotle still makes an attempt to deal with goals and activities more constructively, but since the starting point is chosen incorrectly — the desire for good as a non-existent goal — then he does not logically come to understanding the problem, repeatedly returning to happiness, then to being as an activity.

*«…For even if the end is the same for a single man and for a state, that of the state seems at all events something greater and more complete whether to attain or to preserve; though it is worth while to attain the end merely for one man, it is finer and more godlike to attain it for a nation or for city-states…»*

So, trying to naturalize the good, Aristotle brings us to the concept of the good of the state, which can be interpreted as the good of society for the good of man, as the goal of any activity. But, as we found out earlier, if the good in itself does not mean anything, but is only a parameter or a guideline in the process of achieving some goal, then Aristotle, making a cross-linking of the good and the goal, gives a false goal in his presentation of ethics. Actually, he even understands this himself, «…An*d goods also give rise to a similar fluctuation because they bring harm to many people…»*

After a few sentences, we see another glimpse of the thinker's consciousness, «*…because the end aimed at is not knowledge but action.»* — that is, in this place, Aristotle sees an understanding that good and harm are only guidelines for activity to achieve something, pointers for activity, but not the goal itself. However, later on, Aristotle tries again to define good as something in itself, equating it with happiness, but immediately making sure that happiness is very relative, internally and externally contradictory, therefore in this context it cannot be a goal.

Here is a good point in the reasoning: «*…but the term «good' is used both in the category of substance and in that*

*of quality and in that of relation, and that which is per se, i.e., substance, is prior in nature to the relative (for the latter is like an off shoot and accident of being); so that there could not be a common Idea set over all these goods.»* Here it concerns the relationship and this is exactly what is needed. The parametric dichotomy of positive and negative expresses an attitude towards a certain goal as an entity. It remains only to find the most important thing, the being to which the attitude is expressed.

Here Aristotle, after wandering a few paragraphs in arguments that do not have a point of reference, still gives out a sober thought again, «*Are goods one, then, by being derived from one good or by all contributing to one good…?»* — yes, that's exactly the point, I want to answer him, it's just a pity that the source is located in a completely different direction from where Aristotle is looking for.

As a result, Aristotle relieves himself of the concern of searching for a single source, saying, «*But perhaps these subjects had better be dismissed for the present… And similarly with regard to the Idea; even if there is some one good which is universally predicable of goods or is capable of separate and independent existence, clearly it could not be achieved or attained by man; but we are now seeking something attainable.»*

Now let us turn to the part of Ethics in which Aristotle still touches the subject we are looking for, which on one hand does not allow him to achieve harmony in his ethical constructions, and on the other, this subject itself could serve as a solid core for any ethical search, if it were taken as a starting point. He says, «*Now death is the most terrible of all things; for it is the end, and nothing is thought to be any longer either good or bad for the dead.»* — indeed, but death is exactly what only man has understood so far, *…but we are seeking what is peculiar to man***.** And it is death, according to Aristotle, that nullifies good and evil. If we are talking about good and evil as a relation to death, is not all the source of specificity of man here? Yes, that's right, — the whole

phenomenology of human is generated through his attitude to death.

How a human considers life and death, and how nature consider it, are fundamentally different. Nature has no categories of relations at all and there is no good and evil in nature. But a human has these categories, they give him a unique specificity. Therefore, if we understand the reason for the existence of these categories for human, it means to be able to define the phenomenon of human itself.

Then, Aristotle plunges into cyclical discussions of the golden mean, repeating the same thing over and over again, «*… implying that excess and defect destroy the goodness of works of art, while the mean preserves it…*» If you think about what is said here, it is possible that the main thing is not that it is excess or lack, but rather disastrous or beneficial. When Aristotle judges good or evil, the thought boils down to whether the subject (person, society, or state) perishes or continues to live. This question constantly appears in any reasoning, as if this is all that is being discussed, meaning the same thing in different formulations. To show this, Aristotle says, «*…as we see in the case of strength and of health… both excessive and defective exercise destroys the strength, and similarly drink or food which is above or below a certain amount destroys the health, while that which is propo tionate both produces and increases and preserves it…; … temperance and courage, then, are destroyed by excess and defect, and preserved by the mean…; …and if one did the action they were to be saved, but otherwise would be put to death…*» And so, time after time, almost about the same thing: to be or not to be, that's the question. So, isn't that really the question? Yes, it is.

Now, let's repeat, «*Now death is the most terrible of all things; for it is the end, and nothing is thought to be any longer either good or bad for the dead*». It is attitude towards death. That is the source of good and evil. It turns out that Aristotle, discussing anything and from any angle, repeatedly comes to the problem of death and destruction. It is death in Aris-

totle's reasoning that generates unexpected, sometimes paradoxical, transformations of happiness and good into misfortune and evil so that Aristotle cannot grasp the situation of absolute good anywhere. Only death is absolute and unambiguously existential for Aristotle. And it is death that has the very ability to reset the good and evil that we mentioned previously in the object-search game. So, what kind of item should we find? What could be the result of the ethical exercises of human?

My answer is: overcoming death. Let's consider this overcoming from different sides, what overcoming death can be in the life for a human: tactically and strategically.

It is interesting to see in Aristotle about the specifics of natural reactions, «*...nature seems above all to avoid the painful and to aim at the pleasant...*» — so it is said about the biological dichotomy, which directs the actions of animals in the form of instincts and behavioral programs. In the absence of reason, pain and pleasure are what guides the actions of animals. Therefore, it is correct to say, and Aristotle said it — nature does not overcome the problem, but rather avoids the problem. Pain is negative, and pleasure is positive. But neither pain nor pleasure pose a task. Therefore, of course, pain and pleasure are in no way a method of solving problems. So, Aristotle found only a natural analogue of morality, and this is absolutely accurate. If human has a moral dichotomy of good and evil, then nature has a biological dichotomy of pleasure and pain. The specificity and effectiveness of human is that the dichotomy of morality, unlike the dichotomy of natural selection, sees the result of all obstacles and all problems for life — it is death. Nature does not see obstacles but rather uses them to select only those options that avoid the obstacle without touching it. It is possible to draw a parallel with the effect of systematic survivor error, when only correct answers are saved. It turns out that the experience of contact with the frame of death does not physically exist in nature because this experience is dying. For this reason, living nature

does not and cannot have any abstract or physical knowledge about death, therefore, there is no relation to it.

We can easily find examples of the difference in approaches to the problem in humans and animals. A man can endure the real pain of treating the disease only because he knows about the death that the disease will bring. The ethical method of relation towards death allows a person to neglect the negativity of pain, preferring the category of good because it leads to overcoming death, and not because it is physically pleasant or lead to happiness and pleasure. Similar to how a human can directly refuse any number of pleasures, labeling their consequences as evil by an ethical method if they lead to death, for instance: drugs, extremes, and imbalances (lack of a golden mean according to Aristotle). The animal will not tolerate pain, since this is one of the levers of instinct, and will avoid treatment at all means if he has such an opportunity. And all this is only because the animal does not know about the disease, or even about death in general. Just as an animal will enjoy as much as possible — even if it is just an electrode sewn into a specific area of the brain, and not a real pleasure.[1] Such examples can be cited as a tactical solution to the problem of death.

*«Professional soldiers turn cowards, however, when the danger puts too great a strain on them and they are inferior in numbers and equipment; for they are the first to fly, while citizen-forces die at their posts, as in fact happened at the temple of Hermes. For to the latter flight is disgraceful and death is preferable to safety on those terms; while the former from the very beginning faced the danger on the assumption that they were stronger, and when they know the facts they fly, fearing death more than disgrace...»* — here we discuss the moment when individuals give their lives for the sake of the life of their society. In this case,

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[1] Olds J., Milner P. *Positive Reinforcement Produced by Electrical Stimulation of Septal Area and Other Regions of Rat Brain* (1954)

it is clear whythe mercenaries are fleeing: they are not connected with the protected society, and for them their own death is more terrible than the death of some foreign society or state. Contrary to the civil militia that is connected with the protected society. They have their material and spiritual values, their children, parents and relatives, that is, everything that is part of themselves, and will exist much longer than them in the historical perspective. Thus, the phenomenon of History and Culture can be cited as an attempt to overcome death strategically.

One of the types of culture is Ritual and Religion, which gives us another example of a strategic, but imaginary, overcoming of the problem of death in the form of postulating life after death..

*«But we must not follow those who advise us, being men, to think of human things, and, being mortal, of mortal things, but must, so far as we can, make ourselves immortal, and strain every nerve to live in accordance with the best thing in us; for even if it be small in bulk, much more does it in power and worth surpass everything.»* — this thought of Aristotle fits perfectly into the context of our hypothesis. If Aristotle speaks of overcoming death as a problem purely hypothetically, then with the development of science this goal can be quite specific and unambiguous for any activity that together make up the same general idea, «*Are goods one, then, by being derived from one good or by all contributing to one good…*» Yes, that's the whole point. The only source is the understanding of death, and not only good, but also evil, and they both serve the idea of overcoming the problem.

It is necessary to clarify that it is the understanding of the problem that leads to the solution of the problem. If this is the case, then all the benefits and all the harms listed in the treatise Ethics, are reduced to solving the most common problem — death. This is partly revealed to us in reality. Today, in developed countries, the average life expectancy is at least twice the biological and anthropological norms, and that is a lot.

Conclusion: everything that a human does in all its diversity (individually, in society, and in humanity) to overcome death is good, blessing, and virtue. Everything that leads an individual, society, and humanity to death or decay is evil, harm, and vice.

At first glance, this essence of ethics seems too simple. It's too obvious to be anything more than what we already see around us. But in fact, the opposite is true: yes, the principle is simple, but the tangle of interconnections, and the whole abyss of problems of the physical world around us, the social world is not at all obvious until now, and the manifestations of good and evil must be constantly identified by an ethical method.

In the process of cognition in nature and society, the more interrelations we identify, the more difficult it is for us to establish unambiguously which action and in what ratio with other actions will lead Humanity to the prosperity of life, and which ultimately, as a result of multiple interactions, will destroy it. And, nevertheless, the advantages of such a principle are also obvious. We have the most constructive system for assessing and predicting the path that humanity is following. Let the decisions made be hypothetical, but the criterion with which the result can be compared is clear. This is how morality works as an experience of evaluating the results of previous decisions.

It is necessary to make one more important point: the locality of development as opposed to global development. Historically, societies have developed locally, which gave rise to the well-known phenomenon of different good and evil. Friedrich Engels noted, «*Ideas about good and evil changed so much from people to people, from century to century, that they often directly contradicted one another.*» It was the locality of development that generated contradictions between societies and different interpretations of morality, since divided societies are situationally perceived as threats, therefore, problems for each other.

If the idea of overcoming death being implemented on a global level, when one part of humanity does not threaten to destroy another part of it precisely because both these parts equally need all possible development options, then the idea of overcoming death may well become a global Idea of Human Development.

# Wittgenstein's Guess

> *…if a man could write a book on Ethics which really was a book on Ethics, this book would, with an explosion, destroy all the other books in the world.*
> *— Ludwig Wittgenstein, A Lecture on Ethics (1929)*

*«Now instead of saying Ethics is the enquiry into what is good I could have said Ethics is the enquiry into what is valuable, or, into what is really important, or I could have said Ethics is the enquiry into the meaning of life, or into what makes life worth living, or into the right way of living. I believe if you look at all these phrases you will get a rough idea as to what it is that Ethics is concerned with.»*

At the beginning of a *Lecture on Ethics* in 1929, Ludwig Wittgenstein came quite close to understanding ethics, putting aside the generally accepted essential approach, and proposing ethics as research. A little more, and he would have come to our line of reasoning: ethics as a method of development based on an attitude to the problem (…*what is really important*…). Unfortunately, he does not go further in his insight, but still, the reasoning contains interesting points that can be discussed.

«…Et*hics, if it is anything, is supernatural… The right road is the road which leads to an arbitrarily predetermined end and it is quite clear to us all that there is no sense in talking about the right road apart from such a predetermined goal.»*

If we are talking about the understanding of death as the essence of human, then the purpose of the development of the essence will be overcoming death. And this is undoubtedly a supernatural task. It is as supernatural as any other task: human flight in the air, going into space, wandering underwater, landing on another planet, the ability to see atoms, or to keep the solar-temperature plasma on Earth.

*«... the absolutely right road... I think it would be the road which everybody on seeing it would, with logical necessity, have to go, or be ashamed for not going.»*

It is convenient to illustrate this point with a religious dogma. At a certain stage of human development, the belief in overcoming death by means of an immortal soul was a universal belief, and life after death was perceived as a reality. During this period, religion becomes precisely a universal road, an absolutely correct road, and there is quite real remorse for everyone who believes in a religious solution when losing this road. It is in religious dogma that we already have had an example of the absolutely right road. It was precisely a solution to the problem of death, which was overcoming death and nothing else. This required the creation of a metaphysical and fictional world, as Wittgenstein goes on to say.

*«And similarly the absolute good, if it is a describable state of affairs, would be one which everybody, independent of his tastes and inclinations, would necessarily bring about or feel guilty for not bringing about.»*

That's exactly how it was: robbers and righteous, peasants and kings, or women and men wanted to save the soul for eternal life. The society found the strength and resources to support a special phenomenon — the monasticismthat dealt exclusively with the issue of salvation, and nothing else. Everyone, regardless of their tastes and preferences tried

to make an overcoming of death, but called it a salvation of the soul.

«...is *a chimera... No state of affairs has, in itself, what I would like to call the coercive power of an absolute judge.»*

And does life, unlimited by death, possess in itself what could be called the *coercive power of an absolute judge*? Again, analogies with religion suggest that you can only get eternal life by going through an absolute court.

«...the *experience of absolute safety... To be safe essentially means that it is physically impossible that certain things should happen to me and therefore it is nonsense to say that I am safe whatever happens.»*

The desire for safety is the imprint of knowledge about death. And, indeed, the inability to consider the entire physical world and absolutely protect yourself in it is quite reasonable. But, this does not mean that there are no high-quality transitions. This shows the supernatural, and at the same time, the reality of ethics. For example, the existence of the laws of quantum physics do not contradict the existence of the laws of classical mechanics. In the world of Planck quantities, there are possibilities for what is impossible in the physical world. Still, though, the universe accommodates both of these worlds at the same time.

«*...when they said that God had created the world; and the experience of absolute safety has been described by saying that we feel safe in the hands of God.»*

Most likely, the described experience of absolute security is actually the experience of absolute ignorance about danger. Rather than the experience of ignorance about death, which is still experienced by all animals or people whose language

lacks a system of tenses. They are extremely rare, but there are examples such as the Piraha tribe,[1] who are considered the standard of happiness.[2] It cannot be said that this is a blessing, though, mainly because ignorance about the problem does not free you from the problem. But we can say that this is primordial animal happiness. So, we can make sure that happiness and morality are not interrelated. It is likely that happiness can only be just outside of death. And it does not matter in what form, whether it is beyond the knowledge of death or in the impossibility of death. So, man was banished from the paradise of ignorance, while animals remain in paradise. Even though we continue to exist together, physically, in the same world.

«*...what we mean by saying that an experience has absolute value is just a fact like other facts and that all it comes to is that we have not yet succeeded in finding the correct logical analysis of what we mean by our ethical and religious expressions. ... That is to say: I see now that these nonsensical expressions were not nonsensical because I had not yet found the correct expressions, but that their nonsensicality was their very essence. For all I wanted to do with them was just to go beyond the world and that is to say beyond significant language.*»

As we saw earlier, ethics loses its meaning after achieving its goal. While we are moving towards the goal, good and evil exists. Once we have reached the goal, ethics itself no longer exists. Let's assume that we have reached the state of overcoming death. And if death is overcome, then ethics no longer has a substratum. There is no need for a relationship to death insofar as there is no death itself. Thus, one can only agree

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[1] Daniel L. Everett *Don't Sleep, there are Snakes* (2008)

[2] a film by Michael O'Neill & Randall Wood with Daniel Everett *The Grammar of Happiness* https://youtu.be/5NyB4fIZHeU?t=1150, 21:00 (2012)

with Wittgenstein that the achievement of the goal by a man, defined as a being who understood death, will mean for him to go beyond the world where he now exists. A man who becomes a New Man or a Superman enters a New World, beyond everything that defined him in his own world. Everything will fall into place, and here Wittgenstein is right.

*«Ethics… does not add to our knowledge in any sense. But it is a document of a tendency in the human mind which I personally cannot help respecting deeply and I would not for my life ridicule it.»*

Exactly. Ethics is not a knowledge in itself, but only a method of obtaining knowledge. As a shovel is not the hole, but the possibility of digging a hole, and a brick is not a house, but the possibility of building a house.

Ethics is a unique and effective method of development available only to humans. And it is for this reason that it is the driving force for a tendency in the human mind to develop.

# a source of development

> *Would now the wind but had a body; but all the things that most exasperate and outrage mortal man, all these things are bodiless, but only bodiless as objects, not as agents.*
> *— Herman Melville, Moby-Dick*

There are no problems for inanimate nature. There is only the transformation of matter and energy. Whether it's the planet's loss of atmosphere, star burnout, supernova explosion, black holes, or galaxy collisions, they are not problems for the universe.

The problem can only exist for life — living things. And this problem of the cessation of life, that is death.

Let's define the connection of the concepts used below: death, problem, obstacle, limit, and frame. The concept of the problem is reduced to the concept of an obstacle. The obstacle to life can only be something that does not allow you to continue the life. Everything that is not a problem, that is, does not lead to the termination of life, is also not an obstacle. Anything that does not stop life could be resources, opportunities, the environment — anything, but not obstacles. Obstacles can be complex: a chain of interrelated events, complexes of conditions and their correlations, environmental parameters, or natural phenomena. In general, we will call the complex of obstacles as a *limit frame*. It is the boundary of life's possibilities, a capability limit frame of an organism, group, species, genus, and all wildlife, if you like.

Collision with the limit frame means death. Wildlife exists and is avoiding contact with the limit frame. Therefore, all available living organisms do not know about their limit frame

and do not see it, since they have never come into contact with it. How is it possible to know this, without ever seeing an obstacle, without knowing about it, and never to even stumble upon it? Animals are protected from this by instincts and behavioral programs using the dichotomy of pain and pleasure. The parameters of pain and pleasure were selected by death during the entire lifetime of life. That's what we called the process natural selection. Death destroyed everyone who went the wrong way by touching the limit frame. Only those who went exclusively the right way remained alive, fulfilling the instructions of instincts accumulated over billions of years. So, nature continues to live without touching the limit frame.

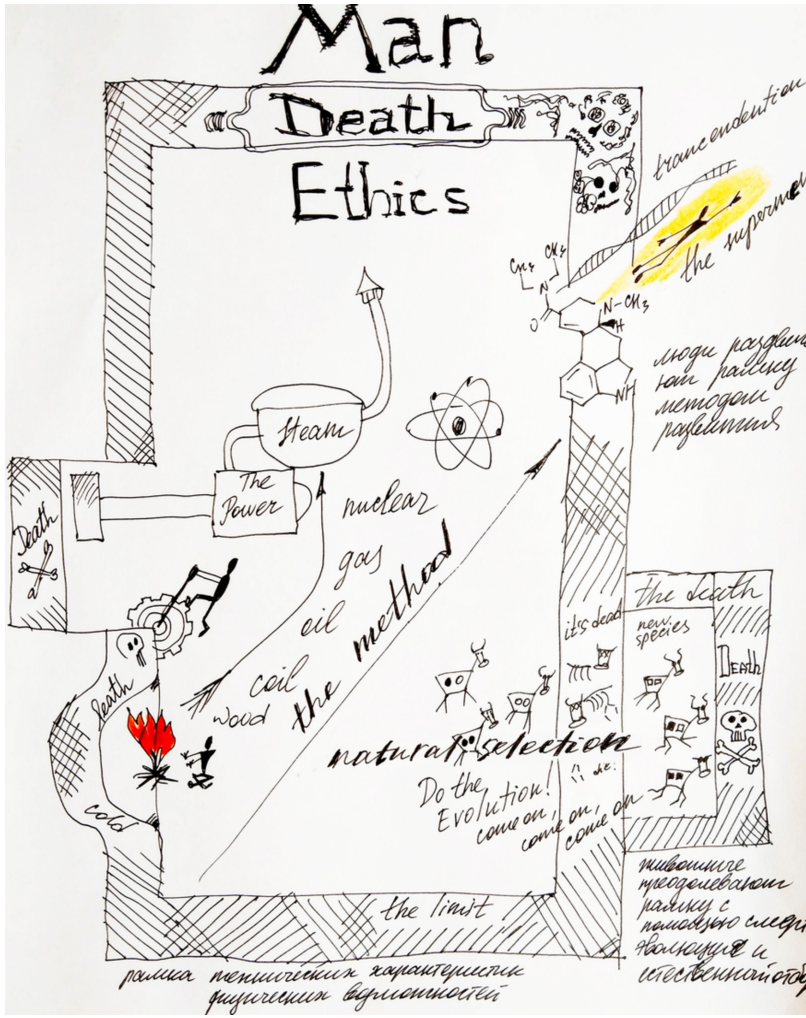


*Fig. 6. Limit frame*

How, then, does the process of evolution and the development of wildlife work? Objectively, wildlife has been gradually expanding the limit frame of its capabilities since its incep-

tion, adapting to the environment, using the environment, shaping the environment, and adapting again. This happens with the help of a rule violation that manifests itself in the form of errors: random mutations that give unexpected fitness when animals change a little physically or behaviorally. At the same time, selection is doing its job. If a new change better suits the parameters of the environment, then it rearranges the boundaries of the existing limit frame, forming a new species.

But, even having expanded their capabilities relative to the old ones, animals again do not see a new limit frame, so the quality of existence for them does not change. Thus, sorting through the options in the form of random errors does not solve any problem and no one will solve the absolute problem. Nature only learns to avoid the problem in one way or another, adapting itself to this or that limit frame. If a species does not withstand the parameters of the limit frame, which itself can change in the form of natural disasters, then the species dies out. This has happened several times, there have been 5 major and 20 minor planetary cataclysms when up to 95% of existing species died out. The disadvantages of such a development are the extreme duration and cost of evolution. Since even a simple but purposeful search of options in the direction of solving the problem would be an order of magnitude faster and more efficient than a selection of randomly made mistakes without any direction.

A human, having understood the problem, having understood death, having seen an obstacle, or having seen a limit frame, is the only one in all nature who can push the limit frame. Humans have no need to transform themselves into new species with new physical capabilities. It is for this reason that the human was able to abandon his instincts. Even without instincts, human does not stumble upon the limit frame, because he sees limit frame. As it is shown in Figure 3. A human is also able to take actions to remove the limit frame and to change the world around them.

Thus, understanding the problem is the source of Development for the human. Only by seeing the limitations, humans can begin to think and act in the direction of overcoming them. An animal, not seeing its limitations, cannot even want to overcome them.

What is a human action? Thinking with the mind, acts with hands, cuts with a fragment of stone, drawings in the sand, snatches brand from a forest fire, draws with charcoal on the wall, warms with a hearth, pushes with a stick, scrapes with a chip, stabs with a bronze knife, harnesses a horse, pulls a sail, moves a steam engine, moves a diesel engine, launches a satellite, and creates a nuclear reactor. So, action is not only labor, the use of energy and technology, but also research, heroism, creativity, and art.

Overcoming the problem requires Development but does not require natural selection, human beings do not have to change as a species in order to push the boundary of their natural limit frame. Gagarin, soviet astronaut, flew and returned from space as the same Homo Sapien as his ancestor with a stone axe. It did not take man millions of years to spin the deadly carousel of evolutionary selection to get into an environment previously inaccessible to *Homo Sapiens*.

Sometimes a human sees a limit frame, but there is nothing he can do. There has never been anyone in history who doesn't die from old age, even all other obstacles were removed. Then the human comes up with a spiritual solution: this is how the burial ritual appears, which makes it possible to overcome death by passing into the other world in a certain new quality. The metaphysics of faith and religion are developing — they solve the problem of overcoming death cardinally, but in a special afterlife world. And it works.

In the context of our hypothesis (*awareness of death is a phenomenon, which gave rise to a humanity*), we can definitely mark the point on the anthropological map of human development when man understood death as a problem and showed this understanding in an attempt to solve it by way of begin-

ning of burial rituals. In the caves of the Sierra de Atapuerca 1300 — 800 thousand years ago (the period of *Homo antecessor*), the remains of humans and animals were dumped into one garbage heap.[1] In addition, there are traces of tools on human remains, similar to traces on animal bones, which indicate cannibalism. It can be argued that death was not perceived by these beings as an absolute problem requiring a special solution. Although the development in the direction of language and symbolic abstraction has already been underway, as we will see at the next point. In the same valley of the Atapuerca mountains, in the cave of Sima de Los Huesos, already 430 thousand years ago (the period of *Homo heidelbergensis*), there is evidence of sanitary burials, where deceased people are buried separately from animals, and without traces of cannibalism. The ritual is not clearly visible, although the only Acheulean chopper found in the burial is a tool made of red quartzite without traces of use, called Excalibur. This was placed in the burial purposefully[2] and can be considered a kind of reference point — the moment of the ancient man's hypothesis about the ritual. The symmetry of the Acheulean product tells us about the level of abstraction that took place as a result from the previous development. In turn, abstraction as an immaterial object, as an idea, can arise only in language, and only after that it can be embodied in a product. It means that the level of language development was high enough to build a system of tenses. Which gave people the opportunity to develop abstract models and understand them in a time continuum. Thus, we can interpret the situation in Sima de Los Huesos in the following way: people began to understand death as a special, all-pervading phenomenon, that must be treated in a special way. But it has not yet been decided how death can be interacted with, and how it can be

[1] Fundación Atapuerca *https://atapuerca.org*

[2] La sierra de Atapuerca *https://cvc.cervantes.es/actcult/atapuerca/*

overcome. And finally, the people who made burials in Sungiri 20—30 thousand years ago (the period of *Homo sapiens*), the problem of death was already solved with the help of an unambiguous burial ritual. It is necessary to understand that the ritual is entirely non-utilitarian in real life. Even more than that, man diverted and permanently destroyed valuable resources, he put out of use useful products and products, all of which cost a lot of effort to get or make. At the same time, the ritual could serve only one purpose, and solve only one task: to ensure the continued existence of the deceased person in some other reality. We see nothing but the overcoming of death by a deceased person. Consequently, this goal was recognized by ancient people as the highest value, for which it is possible to use sometimes considerable resources of the real world. And the people who erected the Shigir Idol 30 thousand years ago went even further. Their symbol for the super-being was an attempt to create some integral idea of another reality as supernatural and super-important in relation to the real world. It was super important precisely because he allowed a person to exist without restrictions, without problems that exist in the real world.

In this case, it becomes quite understandable why the complexity of the tools used by man began to increase sharply. After all, knowing about the absolute problem of death, man uses the tool not only for the function as such, which is often found in animals, but can judge how poor or well the function is performed. This is the ethical method. Not only whether the chopper cracked a nut, or whether the stick reached the ants, but also, how far did this weapon push hunger and death away from man? Is it possible to push even further? This is the power of the ethical method, which can be called the Idea of Development.

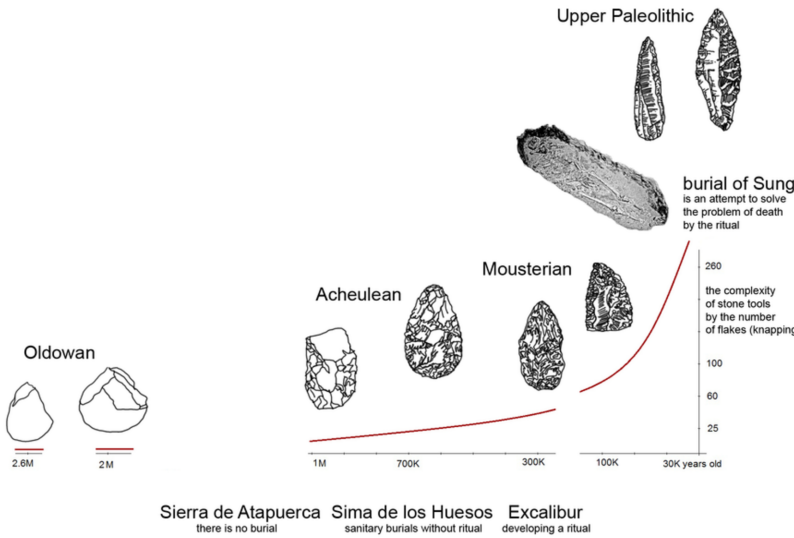


*Fig. 7. On the graph of increasing the complexity of tool processing, it is possible to trace the overlap of the appearance of burials and the sharp complication of tool activity.*

In other words, only by understanding the very existence of death can we clearly see its manifestation in particulars. The sharper and more convenient the stone – the stronger the blow. The stronger the blow, the more nutrition you can get. The more nutrition, the more energy the body has. And finally, the more energy the body has, the further away from death we are. It makes sense to cut a better stone. Without understanding the problem of death, there can be no development in stone processing. If the pelt exists only for the function, just to get warm, then we take the pelt without evaluation: whatever it is, we warm up. In that way of thinking, there can be no development of pelt dressing. But as soon as the ethical method appears then we ask: is the pelt good enough

to keep me warm and alive longer, or is it bad so much that it lets cold and death come to me too quickly? Only in this case there is Development. Only in this way there is a sense, task, and goal to improve the dressing of the pelt. In order to cut the pelt better, a sharper and thinner knife is needed, and then the knife subsequently begins to improve. So, there is a whole hierarchy of problems, questions, research, and actions that arise. Tomasello noted that "*... it is impossible to imagine a human... activity... without... establishing common goals and objectives...".*[1] He was right, but where will common goals and objectives come from, if not from understanding a common problem?

Understanding the problem, understanding death, or the ability to see the limit frame requires continuous Cognition and Development. It is for this reason that children need a school. Rick Sanchez reasons like this: "*... I'll tell you how I feel about school. It's a waste of time... It's not a place for smart people."*[2] But the benefit of school as a tool of systematic knowledge transfer is not that *smart people* are able to tell the square root of π or formulate the first law of thermodynamics on demand.[3] Rather, it is so humans can shift the frame of limitations beyond what has been achieved today. Ideally, one or another form of continuous human development should not stop until the whole system moves into a New Quality, a New Society, and a New Humanity.

When the problem is not clear to the consciousness of the human, if it is an incomprehensible problem, then it can be said that it does not exist at all, even if it already has disastrous effect. For example, until people learned about the dangers of radiation, radium girls received lethal doses of radiation at their work, watches, Christmas trees and children's

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[1] Michael Tomasello *Origins of Human Communication* (2011)

[2] Rick and Morty *Season 1 Episode 1,* 3:33

[3] Rick and Morty *Season 1 Episode 1,* 18:41

toys with glowing radium salts were produced until the 50s of the 20th century. Only after understanding the connection of a certain phenomenon with death does the understanding of the problem occur. Only in this case a human formulates a task for himself, sets a goal, gets a solution, performs an action in the direction of a solution, and death tactically retreats. The ethical method requires constant development of Cognition.

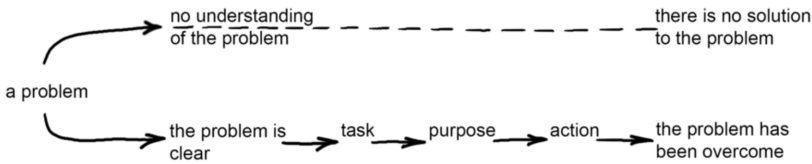


*Fig. 8. The movement from the problem to the solution of the problem cannot to avoid the point understanding the problem, because only this point sets a task as problem formulation, the solution of which becomes a purpose that motivates activity, and only as a result of this sequence we taking solution of the problem.*

In this scheme (Figure 8), the purpose is always abstract. This is exactly the theoretical solution of the problem, and the purpose that can only be outlined. The achieved goal is overcoming the problem. It is for this reason that Aristotle is confused about goals: goals as activities and goals as results. If the goal is the solution of a problem, and nothing more, something that demands the activity to achieve the result in the form of overcoming the problem, then everything falls into place.

Only in a strict sequence of the process: understand the problem, then set the task for solving the problem, and finally achieve the goal by solving the task through action by will.

Only then can we get to the overcoming of the problem. It is impossible to rearrange these stages in a different order if we follow the logic of solving one problem.

In ordinary life, we rearrange these terms because we do not take into account the hierarchy of problems. For example if my goal is to solve the problem, then as we have seen, logically the only solution to the task can be the goal. Before the task, the goal itself cannot exist because the goal is the solution of the task. Why does the phrase my goal is to solve the problem not cause logical conflict? This can really be said if the goal and the task relate to different levels of problems. Or rather, to different levels of one absolute problem — death. For example, my goal of overcoming hunger means solving the problem of finding food. But the task of finding food must have its own solution, i.e., the goal necessary for purposeful actions to be performed at this level of the hierarchy. Considering the fact that overcoming hunger is not the only problem that leads to death, then she herself is in a complex hierarchical system of relations to the absolute problem. In the process of solving one problem, it is possible to discover and understand more subproblems, as a branching tree of subproblems, after which the understanding of subproblems formulates new tasks that can diverge even further as they are solved and acted upon. This is how the branching of sciences and branches of activity arise.

Thus, the complex scientific, cultural, social, and industrial hierarchy is reduced to an absolute problem. We can say that all the problems in the world are derivatives of one absolute problem of death. In this case, the absolute problem that defines the absolute task and the absolute goal is behind all our problems, tasks, and goals. And if the absolute problem was not understood by a human, then there was absolutely no way to set any tasks at all. In the absence of tasks, it was impossible to get any solutions and goals, and, accordingly, it was impossible to perform any purposeful actions. It was impossible to overcome any problems and this is exactly what we

see in the animal world. The tool activity of animals is as functional as much as claws, fins, spines, and canines are functional. No more than that. They pass the selection only if they contribute to avoiding death, but they never overcome the problem that gave rise to them in essence. Picking with a tool — a long and narrow stick in a termite mound in primates does not evolve into a systematic activity to provide the monkey community with food. Chimpanzees do not see behind a fragment of a stone that they use to crack nuts, liberation from hunger as a problem, because they do not know the problem of hunger itself, even if they are starving. The paradox is that dying of hunger, but not knowing about death, animals do not treat hunger as a problem. For them, it's just a form of existence that can trigger instinctive responses, but not intelligent solutions.

The action that exists in nature is dictated by instinct in relation to a living being, instinct is formed by a supra-system of selection. Thus, it is not species that develop in nature, but life itself through species of living beings with the help of problems. Life itself develops with the help of the problem as a tool of development. The only thing that replaces the impulses of instinct is ethical motivation. And this process, called will, turned out to be an order of magnitude more effective, because it was aimed at the problem itself. So, the most important thing: you can't solve the problem without first understanding the problem. It seems obvious, but it needs to be understood.

Any purposeful action of a person is evidence of the solution to some problem once understood by him. There is no other way to reveal the driving force of human development potential. Whatever the rationale is for any particular activity, the chain of relationships leads to the problem of overcoming death. Only the establishment of a connection between an *absolute* problem and a *situational* problem can motivate its overcoming, that is, Development. Without understanding the problems, a human has nothing to over-

come, and there can be no activity: neither physical, spiritual, or creative.

The idea of development in this case is always the same for a human across all times, races, cultures, countries, and continents — overcoming death.

# a tree of knowledge

> *But of the tree of the knowledge of good and evil, thou shalt not eat of it: for in the day that thou eatest thereof thou shalt surely die.*
> *— The Book of Genesis, 2:17*

So, we have figured out how the specifics of human were determined by the knowledge of the problem of death. Now it is necessary to understand how this process developed in an anthropological context.

To begin with, I propose an interpretation of the 17th verse of the 2nd chapter of Genesis: «*But of the tree of the knowledge of good and evil, thou shalt not eat of it: for in the day that thou eatest thereof thou shalt surely die.*»

Fruit from the tree of knowledge — it is a language of abstract symbols with a system of tenses.

«*…eat of it…*» — it means to use language, finding arbitrary abstract models in consciousness that have the ability of imaginary time travel. So, the human was able to send events from the past to an imaginary future and connect the image of the future with the present.

When this happened, the attitude towards the dead changed. If a dead individual is of no interest to animals, being that the dead do not bite, then the human was able to connect the state of deadness from his past experience with the understanding that the same state from the future will happen in the present. This is «*… surely die…*», or rather, you will find out that you will die.

Thus, having tasted the fruit of knowledge, that is, having mastered the language, a human realized the awareness of death, which became for him an exile from the paradise

of ignorance about death. Pay attention to an interesting point: in paradise, both man and animals lived together, but only the man was expelled, and the animals are still there. Spengler also noted that animals do not know about death, as they live in the moment. This is confirmed by the research into *animal communication systems* (ACS). It is known that ACS are tied to a here-and-now state with direct signals about what is happening, they do not contain abstractions and, as such, do not have an abstract system of tenses.

I would like to base my reasoning about language on a book by Derek Bickerton *Adam's tongue: how humans made language, how language made humans* (2009). In general, I agree with Bickerton's hypothesis on recruiting: which summarizes a large layer of research and theories in the field of the history of language and human development. But as a starting point before recruiting, I would like to suggest footprints in the savanna, or, the book of footprints of the savanna, which the proto-human has learned to read. Footprints as graphic index symbols of natural origin by themselves remove many problems: trust in a cheap signal, an agreement on the meaning, a publicly available graphic base for sound reproduction, etc. And the most important thing is that there were graphic traces even before the appearance of concepts that provided the human consciousness with an exit from the caged here and now. In addition, Bickerton analyzes language and its property of *displacement,* but clearly does not emphasize that it is the property *of displacement* that generates the system of tenses of the language. I also apply the main hypothesis of my book to how exactly language leads to the fundamental qualitative transition of an animal into a human.

*p.4 «…everything you do that makes you human, each one of the countless things you can do that other species can't, depends crucially on language.*

*Language is what makes us human.*

*Maybe it's the only thing that makes us human.»*

In other words, we can say that language is a means by which any animal can become a human. Moreover, we are not only talking about Homo Sapiens. For instance, dolphins have identified up to 14,000 ACS sound signs that cannot be deciphered precisely because they are situational, not abstract. If we had the opportunity to somehow get into the skin of an animal and live with them for a while, then I think we would understand most of the signs based on the situation in which a dolphin exists at the time of giving or receiving a signal.

But it is impossible to *think* with ACS signals. Therefore, a suggestion presents itself: what if we could teach dolphins abstract symbols in the tense system so that they could think like us? This would be just like how researchers taught monkeys sign language. It was found that the volume of the monkeys' brain did not allow them to master the language at a level sufficient to be able to use even a primitive system of tenses. Dolphins would not appear to have such a problem since the size of their brain and its structure is more substantial than a human's. With dolphins, a special sound decoder would be required. Naturally, this question is quite complicated technically, but I think that if it were possible, then we would find ourselves in the role of a tempting serpent who gives another being a fruit from the tree of knowledge.

In this case, dolphins would be able to learn the problem of death at a certain level of language mastery, and therefore receive a method of assessment — morality and ethics. They then therefore enter the human path of Cognition and Development. After all, they would have been expelled from the paradise of ignorance. Using the abilities of a physically more powerful brain, expanded in such a bizarre way, humanity could solve complex fundamental issues that stand in our common path. Dolphins are still not intelligent even though they have a more developed brain compared to the most powerful ACS system. Unfortunately, there are a relatively small number of them according to various estimates as there are

hardly more than 100—200 thousand dolphins of each species on the whole planet. For reference, there were the same number of humans on Earth in the prehistoric era, when we had not yet received language and reason.

*p.7 «...humans as a species of ape, ground out like all species by the mills of natural selection, with nothing that made it more valuable than any other species, and nothing of any real importance that made it significantly different from any other species.»*

The first thing that can be objected to this position is that the total number of the Homo population is several orders of magnitude higher than the normative number of the species (Figure 9). In essence, this normative number is one of the manifestations of the limit frame of the natural possibilities of the ecological niche (Figure 6). With an increase in its own weight, the animal inevitably expands its habitat to absorb enough food. Since ecological niches cannot be infinite, the limit frame also manifests itself by limiting the population. Human is the only being who has clearly overcome the limit frame, going beyond the limit frame of his ecological niche. So it can be assumed that the valuable of a human is in the exceptional ability to overcome limitations.

The second thing that can be called important and can be considered a significantly different from any other species is that the ability to overcome any limitations not only environmental. We can overcome restrictions dictated by physical laws. For example, thermonuclear fusion or the gravity of the planet. At the beginning of the 20th century, it seemed impossible to overcome the mutual repulsion of two atomic nuclei in order to connect them and get an energy release. To do this, it was necessary to learn how to hold the heated plasma in tens of millions of degrees. No material in the entire universe can withstand such a temperature. But even this seemingly absolute limitation has been overcome. Russian physicist Oleg Lavrentiev invented the principle of magnetic

plasma confinement. Is it really impossible to call this human ability "*real important*"?

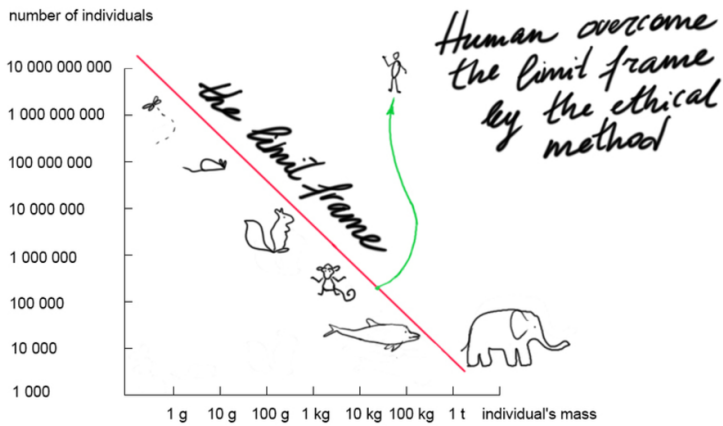


*Fig. 9. Quantitative expression of the effectiveness of the ethical method of human development over natural selection.The red line here is essentially a limit frame of animal species.*

How to explain it? In my hypothesis that human is a being who has ability to known about limit frame, about death as a problem. If we do not have the need to instinctively avoid restrictions, then we get freedom of action and freedom of will. This is expressed in the ability to find a way out of the cage not only by behavioral programs and instincts developed by selection, but also the limitations of the ecological niche. The attitude to the problem makes it possible to neutralize the negative consequences of the violation of the ecological balance caused by leaving the niche. Going beyond the ecological niche — an increase in numbers — is usually fatal for any kind of animal, but it has not proved fatal for humanity. Precisely because the imbalance was also perceived as a problem lead-

ing to death, and hence was not left without a solution. If the ability to produce nuclear energy threatens the death of humanity, then the ability to understand this threat of death allows us to avoid a nuclear apocalypse.

This is what distinguishes our species from all others: we are so efficient that we do not need the cruel and costly process of natural selection. Our numbers are balanced not by a niche or habitat, but by the level of energy we have mastered. From tribes to states, to the draft power of cattle to hydrocarbons and to atomic decay and thermonuclear fusion.

*p.9 «Penn and his coauthors assumed there were two discontinuities, not one: a particular discontinuity in language and a more general discontinuity in cognition. … It doesn't make sense. One would be bad enough.»*

And yet there were two gaps. The first relates to language which only provided opportunities for cognition, but not cognition itself. It's just that the language does not give anything by itself. Nothing has changed from the fact that we abstractly called the tree, tree. The second gap is related to the ability to cognition that language gave. Namely, with the knowledge of problems or phenomena that limit our life. And here the tree can already be an obstacle, and a means to overcome obstacles, or a means to maintain a fire — to get heat — to cook food — to preserve life. Or a tree can be a safe shelter, or a supplier of nutritious fruits or juices, and so on. But this is something we can think about and think only with the help of language.

*p.22 «So in order to get to language, the reference of meaningful units-signs or words-has somehow to be shifted from concrete situations to the concepts we have of particular things in the world. … So somehow communication has to be released from bondage to what's happening right now.»*

Here in this place, I propose footprints or traces as *index graphic signs of natural origin*. A human did not have to invent them specifically (according to Bickerton), but human was enough just to see and understand them as signs left by animals. When these signs themselves were tied to the animals that left them as meanings, and later as conceptual ideas. Thus, the savanna is the first book of natural origin, read by a human ancestor after entering the savanna from the jungle 2.5 million years ago.

*Fig. 10. Who was here?*[1]

*p.24 From word one, language had to pull its adaptive weight, confer some kind of benefit. If not, then nobody would have bothered to invent any more words.*

[1] *photo by Pavel Gavrikov https://www.pexels.com/ru-ru/photo/8716316/*

That's right! If we refer to natural footprints (seen in Fig. 10) as the first proto-words, that do not even need to be invented, then they benefit from their understanding from the very beginning. Knowing that the footprint (an index sign) left our future lunch, we follow the footprints and eat — increasing fitness. Knowing that a predator has left a footprint (a future problem), we prepare for resistance — we increase the adaptability of our species. Further more, a proto-human that gradually processes the vocabulary of traces, and the circumstances under which these traces appear, and the relativity of the time in which these traces appeared, have always followed the path of tangible benefit. All these signs immediately gave direct benefits, becoming both index and subsequently iconic symbols. And if proto-human himself tried to graphically depict a trace for transmitting information to other relatives, then here we can agree with Bickerton's recruiting hypothesis, but in its graphical execution.

Researchers have found that a graphic image is an object available for execution by a creature that has a hand, and about 400 grams of brain. Physically, this is the level of an Australopithecus or chimpanzee. In the experiment of Susan Savage-Rumbo, bonobo Panbanisha was able to draw graphic lexigrams on a wooden floor on her own initiative.[1] So, proto-people could also depict the trace, turning it from an index into an iconic sign. And having an iconic sign emotionally connected with the cry of the ASC, we already have simple words on the verbal tract. Hence, the origin of words from traces directly contributes to fitness.

*p.28 «The test of immediate utility isn't the only condition that a n adequate theory of language origins has to meet. There are at least four others, and this seems as good a time as any*

[1] Susan Savage-Rumbaugh: *The gentle genius of bonobos* https://youtu.be/a8nDJaH-fVE?t=681, 11:27

*to say what they are: Uniqueness; Ecology; Credibility; Selfishness.»*

Uniqueness. Other species did not have such complexness: a brain (from 400 grams and above), an index sign of natural origin (a footprint that is important for survival and is able to remain in the ecosystem outside of the here and now moment), or the ability to translate an index sign into an iconic sign (sufficiently hands free, i.e. walking ability is important).

Environmental friendliness. Only savannah gave protoman a whole book of footprints, and in the forest such signs are rare among chimpanzees. As in other ecological niches in other animals. The same dolphins, with all their desires, will not be able to find or create such graphic symbols in the water column.

Plausibility: the natural origin of traces excludes lies, and the theory of cheap signals is not applicable. Only at the stage of translating a sign from an index to an iconic lie is possible, but here it interferes with the recruiting function, therefore, it is canceled.

Egoism: if a benefit or security is formed around the trace, then we can say that both egoism and altruism work.

*p.35 «Once these bits-prelinguistic concepts-were ready, then in some rather illdefined way, connected somehow with protohuman foraging strategies, a protolanguage, quite different and separate from the protohuman ACS, just somehow popped out.»*

Yes, and animal tracks are ideally suited for the role of prelinguistic concepts and presented in a huge variety and natural diversity. They contain the whole meaning of the desired goal, as well as the circumstances of its existence, whether it runs, sneaks, or is wounded. The traces are torn off by graphics from the situation here and now, they appeal to the ability to determine the time of their application, i.e., to build a system of tenses.

As noted in Tomasello (p. 278)[1] about cooperation and competition in the emergence of language, the conditions of joint attention and joint knowledge are fulfilled, which makes acts of reference possible to refer to the future and the past (the elephant passed, the elephant will pass back), and now the elephant is absent, but it exists as a referent. Communicative intentions that form mutual ideas about the need for cooperation and communication. The formation based on the traces of the first conventions gives rise to mutual understanding and common interests. Formation of motives for informing and communicating.

*p.47 «One of the things ACSs don't do but language does is refer to anything that isn't right there, at the moment you make the call, immediately within the range of your senses. ... An indexical sign is one that points directly at its referent. ... A symbolic sign, however, can stand in place of its referent, even when that referent is thousands of miles away or thousands of years back in history.»*

Here, Bickerton mentions an element necessary to create a system of tenses in a language. But, unfortunately, Bickerton does not focus on time, although the ability to create abstract time is extremely important and unique for human language as an information transmission system. The future and the past as a system appear only in human language. There are no more means of working with time in any other information system, although there are a lot of them in wildlife, starting with RNA and DNA. There are many examples of information transmission, but there is no time system anywhere. Only in the abstract mind of man time appears as a concept that acquires an existential essence in the historical and cultural field of human society.

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[1] Michael Tomasello *Origins of Human Communication* (2011)

*p.49 «Language units are symbolic because they're designed to convey information. Information can be past, present, or future, here, there, or anywhere.»*

On the one hand, Bickerton understands perfectly well that symbols can exist in time but does not grasp that it is they who create the concept of time. The trap of perception is that for us, as thinking people, the existence of time is too obvious. In fact, the boundary between the convey information in general and the convey information considering the time continuum is the very Rubicon that will be discussed below. Bickerton simply does not grasp the importance of the penetration of Time as a System — Time as a Concept into the consciousness of proto-humans. Bickerton constructs the term *displacement*, which only partially reflects what the understanding of time is capable of.

*p.50 «…symbolism was the Rubicon that had to be crossed for our ancestors to start becoming human.»*

I would say that symbolism is an opportunity to approach the Rubicon. Symbols are the tool with which you can operate with time, but you may also not operate. And the concept of Time in the world of abstract symbols is the Rubicon.

*p.50 «…the most salient characteristic of symbols is that they can refer to things outside of the here and now. This capacity is something linguists generally refer to as displacement.»*

That's what it's about. But why not call a spade a spade? Outside of the present tense, only not-present time can exist. We can say that we move symbols by *displacement*, or we can say that we move symbols in time.

*p.52 «…where did symbolic words come from?»*

Prints and strokes are natural footprints on the flat surface of the savannah. The traces were left by the proto-human himself. And the erect archanthropus, already having developed and free hands, could imitate footprints in order to displace the index sign into an iconic form, and then into a symbolic one by having learned to depict not only images of footprints, but also images of any object or creature that leaves footprints. This is the perfect answer to Bickerton's question. Symbolism arose graphically. Even now it continues to exist in art and culture: precisely as symbolism embodying the nature of emotions.

*p.53 «Iconicity, therefore, is the most probable road that our ancestors took into language.»*

Thus, all of the above can be superimposed on the footprint as the source of the word. First, an index sign is perceived, then during recruiting it is reproduced by hand as an iconic sign, and if a sound ACS-signal is produced at the same time, then it merges with the graphics of the iconic sign and becomes a word. Once it is an independent symbol, it more convenient for operational recruiting than drawing in the sand. After all, it is not even necessary to approach the recruited group. It is enough to shout, but no longer under the influence of emotions, as with ACS, now it is more and more controlled. The evolution of the control system will be engaged in two million years from the moment of the discovery of traces and their significance, until the appearance of sound control tools in the form of brain regions and vocal organs in *Homo heidelbergensis*.

*p.60 «…the goals of all these gestures and vocalizations are anything but languagelike.»*

And what if not gestural and not vocal? Because both did not lead to language in monkeys. If the origin is graphic, and

naturally graphic, then we get animal tracks. This gives a general observation of the sign. The consequence is an adequate general understanding of the sign which can serve as the basis for group-wide vocalization when all members of the group understand which object vocalization is connected with the fast-flowing process of vocalization. The object (footprint) will not run away and will not attack, while it is also iconic, because interest was not caused by the footprint as such, but by the object (the animal) that left it. In such a scenario, all the factors in the transition from ASC to language can also be associated with semiotic categories. A trace is the signifier of the animal being signified, it is a sign-symbol and at the same time an iconic sign in the case of its imitation with a finger on the sand. It is also an index sign for the obvious connection of the graphic object and the animal object that left it. This process also corresponds to the hypothesis of the formation of Bickerton niches. A specialized niche is necessary for the graphic trace to be sufficiently significant and important enough for the evolutionary mechanisms that required its interpretation. In general, this interpretation continues to this day. We find more and more new traces of what can affect us, we deal with them, and we find such traces that we hjave not seen before, did not understand, or did not distinguish. It was the same with the proto-man. First he saw obvious traces and connected them with the extraction of food, then he learned to distinguish the nature of trampled grass, possibly traces of blood of wounded animals, and so on, in ascending order.

For example, people have long guessed about the existence of the smallest particles, as well as about their influence on macro-objects. Rough, smooth, and sharp Democritus atoms are also traces of real objective reality, but they could be seen only after two thousand years. And in the same way, in order to understand the traces of the microcosm, it was necessary to create a new language of description — quantum physics. It is clear that this is a specialized mathematical language, but only with its help we were able to describe the

atom model correctly enough to understand and verify it and then create a simplified model in ordinary language.

*p.104 «Humans and their culture have always presented problems for the life sciences. Human culture, with all its multifaceted complexity, its centrality to all we think and do, seems to be the only thing of its kind in nature.»*

Exactly. This created culture is a huge machine for identifying and solving problems. No one in the wild has such a machine, except the human.

*p.105 «Every species has things it's better at than others, and who are we to decide that our best tricks have somehow more intrinsic worth than the best tricks of others?»*

At least by the fact that the sharper the specialization of the species, the deeper it goes into the cage of niche. The value of our tricks lies in the fact that they turned out to be so universal that they allowed us to engage in problem solving, in general. It even allowed us to think about solving an absolute problem, and not one highly specialized niche derivative problem. This is a qualitatively different approach to Development. This is what the qualitative who are we consists of. We do everything we need better than others, without even changing the phenotype. And if necessary, we change the phenotype without genotype transformation (see: the transformation of the body in sports, medicine, cosmetology). From plastic and reconstructive surgery to bionic equipment, if we talk about the prospects of genetic engineering and atomic physics, then the question of the effectiveness of our approaches will allow us to qualitatively influence the phenomenon of life itself in the end. That's who we are.

*p.105 «Human culture is simply a case of niche construction.»*

Yes, but which niche? This niche has lead us to overcome an absolute problem that wildlife has not learned about for three billion years, and does not seek, nor has the opptunity. Wildlife has no idea about the cycle of the nearest star — the Sun, and due to the increasing luminosity of the star, all the water from the planet will begin to evaporate, and after 5 billion, the Earth itself will be burned. And the only attempt for wildlife to survive will be to adapt. But how can carbon life adapt to the lack of water? How can protein chains adapt to a temperature of 1000 degrees Celsius, in the conditions of the planet's combustion? Most likely, life will die. Or she would have died if there had not been a human who already knows about these problems. And if we can't do anything with the star today, then we can try to solve this problem in the future. Only a human has a chance to continue life itself, because only he knows about the problem, and with the help of ethics, can motivate himself to overcome the problem.

*p.105 «I know that many, perhaps even most, other species adapt the environment to their own needs, insofar as they have the ability to do so. Some don't have very much ability. We have more than any other species, but what we're doing is basically the same as what they're doing.»*

The differences are fundamental. Animals do not understand what they are doing. Ants do not have an anthill plan. Their behavior is based on the adapting to options, rather than overcoming a conscious problem. And this is a qualitative difference.

*p.106 «But apart from that, the motivation, the process of niche construction itself, and even, as we just saw, some of its specific results, are similar across species, even species as remote from one another as termites and we are.»*

I'm not sure that the term motivation can be applied to animals. This phenomenon is unique in humans. Motivation is the urge to act to achieve a goal. The goal is as far from instinct as development by selection from development by method. Striving for a goal in the process of solving a problem formulated in response to awareness of the problem. And there is no motivation in any species at all: they have pain/pleasure as the levers of instinct. Termites do not solve any problems, and do not set goals, they are guided by instinct. Survival is not the solving the problem. To understand the difference, we can say that survival is avoiding the problem. I just wrote about this above that animal can survive without understanding the problem and not knowing about it at all. Animals do not know about the problems and at the same time survive. Yes, they do actions, but they are all initially random. And only a long selection builds them into an orderly system with the help of instincts. Thus, instinct is just that random action that lives and nothing more. Therefore, instinct can't be called motivation, and animals cannot be motivated. Motivation is a manifestation of ethics, it is overcoming what is worse and striving for what is better, and it is for this reason that a person is unique, precisely as a cognitive-social phenomenon, and not as a biological phenomenon.

*p.107 «Why should the capacity for cultural learning be rated so highly?»*

Imagine the training of dolphins. They have a developed brain, powerful hearing, and a speech apparatus. Let's say we use an audio decoder to teach dolphins an abstract language with system of tenses. So, based on our hypothesis, if the dolphin society learns about death, it will also create a culture, motivation, and Development. I think that in the end it will mean for them as it means for us: fruit from the tree of knowledge, and then expulsion from paradise of ignorance of death. We can act as a tempting serpent. What will it give us? In the

case of dolphins, their brains perhaps more creative. Is it possible that development of the dolphin civilization might be interesting for us? Could it be that a higher civilization, that would open new horizons to us, would come to us not from the depths of space, but from the depths of the ocean of our own planet? We have the potential to create this phenomenon ourselves. We don't have to wait thousands of years for dolphins to deduce all the theorems themselves and get to the atomic nucleus: we can already transfer all the knowledge known to us. This is how we get extra-species globalism. Interspecies globalism. But this, of course, still sounds fantastical. As a parallel, this theory of niches perfectly explains the path of the proto-human to man. When species passes into this new quality of humanity, much more important and significant things arise than niches: namely, understanding the problems of the universe and wildlife. And a uniquely exclusive human ability to solve these problems. Most likely, we will learn the full value of learning when we try to spread it outside of our species.

*p.107 «...the study of human niche construction will show that this same hyperdevelopment of learned behaviors is itself based on an instinct: the language instinct.»*

Well, here we are. It was language that allowed a person to abandon the biological dichotomy of pain and pleasure, it was not a volitional choice, but a prescription. And it was language that created the world of cognitive-social abstracts good and bad: this is a phenomenon of freedom of choice, not represented in nature. The fundamental achievement of language lies precisely in the ability to set aside instincts as a less perfect way of development.

*p.107 «Is language cultural or biological? It's a truism to say both... In fact, niche construction happens to be just the right kind of framework for examining how language was born.»*

Is language a niche? Okay, let's say that language is a niche. But like the fruit from the tree of knowledge, it is useless when hanging on a tree. Without work, language is like a phenomenon of talking monkeys. The talking monkeys have a language, but that does not give them a qualitative transition. What, then, is the mission of language for human? The fact that this fruit still needs to be tasted. But having tasted, having moved into the system of times where we compare death with ourselves as our problem, as a future obstacle, as our limitation, as a limit frame — only at this moment we get a qualitative transition to where everything human appears, including culture.

Culture can show us an interesting trick: how national specificity coexists with universal values. National culture is a linguistic specificity in the broadest sense. Starting with the alphabet, lexemes, words, orthograms and syntax, it is local. For instance, take apple pie and olivier. What is an apple pie for a European? It's dessert. For an American, it is a symbol of American identity. The same goes with the salad olivier. For an American, this is an exotic salad, and for Russians it is a symbol of New Year's holidays. And so on, we can list any cultural artifacts. And only in the sphere of high art, for some reason, all cultural differences flow into something common and universal. The only topic that is understandable at any end of the world is death. There is not a single truly great work of culture where love and happiness is not reduced to a struggle with death. That's why religious themes are in use, that's why everyone knows about Mozart's Requiem. There are no universal pies or salads: pizza will always remain Italian in spirit, and hot dogs American. Only the theme of overcoming death is absolutely universal.

The metaphysics of faith began with the burial ritual as an attempt to somehow solve the question of the inevitability of death. And today it remains so. Humanity has no other way into eternity, despite all the achievements of science. So far, we are only tactically pushing death away: life ex-

pectancy has increased by two times from natural life expectancy.[1]

The feat is another attempt to defeat death. But in this case, an individual consciously sacrifices himself for the continuation of the life of society. Thus, the hero, even if he himself dies, retains his moral, material, and genetic values in the society that continues to live because he allows his descendants or relatives to continue life. Heroism in this sense is also a victory over death, in the cultural field of a particular society. And that's why each society forms its own heroes.

Cognition, creativity, and work — this is the nomenclature of the tactical struggle of a human with death. This is specific of a purposeful action, and the disclosure of the phenomenon shows the effectiveness of learning. I think that the phenomenon of language explains rather well the qualitative transition from an exclusively biological to a cultural and cognitive dimension of the phenomenon of life. This simply did not exist before the appearance of the language.

*p.107 «Therefore somewhere, in one or other of those niches, the difference that gave us language must surely lie.»*

It's still there: footprints in the savannah are index signs of natural origin. The combination of such phenomena as graphics of natural origin, the release of hands by walking upright, broad general purpose, and a brain sufficient for processing graphic information — this combination of circumstances led us to language.

*p.113 «Let's look at the gracile australopithecine niche. … In the mosaic woodland they inhabited…»*

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[1] Mayne B., Berry O., Davies C. et al. *A genomic predictor of lifespan in vertebrates* (2019)

*p.116 «Australopithecine alarms would have had exactly the status of alarm calls in the ACS of vervets. They would have been situation-bound… Even though alarm calls cannot be combined, and show no trace of either symbolism or displacement… alarm calls do have two of the properties of words.»*

*p.117 «Even if alarm calls couldn't themselves morph into words, they might accustom their users to the notion that a signal could express more than mere feelings, needs, and desires.»*

Bickerton looks for the properties of words in warning calls, but human ancestors saw traces of other animals in the savannah, unlike life in trees. And it doesn't matter if they were hiding or hunting, the trail is what Bickerton is looking for: an iconic sign with the properties of movement. You could link the cry of the alarm system to it. So, the warning cry of the ACS picks up the iconic symbol, growing into a concept and a word. After all, the main thing is that the trace of an animal is not here and now, but once was here. When? And the time system starts. Or someday this will be here again. When? In the morning or in the evening, once in the three moons or only in the rainy season: it doesn't matter, it's the principle itself that's important.

*p.124 «Or suppose a larger group split into smaller groups, vastly extending scavenging range, a range that could have been extended still farther as scavengers learned to read signs-dung piles and beaten trails, better still, the circling of distant vultures.»*

Well, that's it! «…re*ad signs*…» is a direct hit to the source of language. I.e., a human did not initially invent signs, he read them in a natural environment, and then he himself began to draw and use them due to the specifics of his development (brain and hands) plus a niche that constantly gave a lot of traces as a 24-hour news channel.

*p.125 «Up until around two million years ago, wherever such pairs of markings are found, the cut marks of tools are always uppermost. In other words, other carnivores were getting at the carcass before our ancestors had a chance at it.…*

*Around the two-million-year mark, things change. Now, with increasing frequency, the sequence of marking on bones is reversed. Now it's the stone-tool cut marks that lie underneath, with animal bites superimposed on them. … They're getting at the meat before anyone else has a chance at it. And the most likely, perhaps the only, way they could have done this is by accessing megafauna carcasses before anything else had a chance at them — in other words, by cutting through intact hides just like Toth, Schick, and Dezzani did.*

*Notice the period when the cut-mark sequence changes — it's around the time that catchment scavenging was replaced by territory scavenging.»*

By the way, here is the evolutionary motive of selection by iconic signs-footprints + persecution. It turns out that the ability to read signs would become an evolutionary advantage in relation to other species. And since the iconic sign of the trace also gives a system of tenses, in Bickerton's terms, *displacement,* then Australopithecus had only to develop these abilities of the proto-language into a language.

*p.127 «You just had to keep your eyes open and locate it, so energy expenditure would have been low compared with the caloric yield.»*

Here Bickerton goes towards the resistance of other higher scavengers, which allegedly served as a unifying factor and forced the Australopithecines to cooperate. In fact, it can be an addition. As soon as the proto-humans were able to read the iconic signs footprints, then it would not be difficult to explain to each other where to run and for what purpose to cooperate. That is, at the stage of mining protection, the proto-

language would already work if it had been created at the stage of mining search.

*p.131 «Remember at the end of chapter 2 I suggested a selective pressure highly likely to lead toward language: the need to transmit information about food sources that lay beyond the sensory range of message recipients. So what we need to look for, in the vast array of species on earth, are ones that have niches requiring this kind of information exchange. If the information that's transferred happens to concern food sources too large to be handled by individuals, calling for some kind of recruitment strategy, so much the better. Surprisingly enough, almost the only species that meet these criteria are ants and bees.»*

*p.132 «Recent research has more than confirmed von Frisch's work, adding fascinating knowledge about how bees measure distance (they compare the speeds at which images of objects in the landscape appear to cross their retinas as they fly).»*

That is, Bickerton's *displacement* is not a system of tenses. Therefore:

*p.132 «But beyond the Wow! factor, people didn't think bee displacement had anything to do with language.»*

*p.132 «Recruitment — that turns out to be the key word in the birth of language.»*

Yes, such *displacement* is suitable for the recruiting function, but this is clearly not enough for the birth of the language. It turns out that the ACS also copes with *displacement* if time is perceived parametrically, through speed (distance over a period of time). But in human language, time is also the essence. The past, present, and future are not speeds, but separate entities with different states, that's the whole point.

*p.132 «The sites for which bees must recruit nestmates may lie several kilometers from the hive. A measurable period of time,*

*several minutes at least, must elapse between when the bee locates the source and when it passes on the information. Therefore an effective bee ACS must displace — it must transmit information about states and events existing in a different place and at a different time. Unlike other ACSs, it cannot function if it remains imprisoned in the here and now. But in escaping the here and now, it is responding to the selective pressure noted at the end of the last section — the pressure likeliest to move in the direction of language.»*

That's not it. Bickerton clearly means physical mobility and mentions the word time precisely parametrically. He does not emphasize that abstractly moving in time is much more important, and has given a much stronger effect than moving in space while considering the time delay for moving.

*p.133 «But I thought, you complain. The bee didn't. It just used instinct.»*

Yes, everything is correct here. And that's the whole point.

*p.134 «So honeybees are the obvious model for a system of communication that involves displacement.»*

In general, the problem with Bickerton's reasoning is that he does not see the determining factor of time in the essential aspect, using only parametric time in the term *displacement*.

*p.138 «When a forager finds a plentiful food source it returns to the nest and regurgitates food to its nest-mates. … As well see in the next chapter, this strategy, explaining what kind of food is available, may be crucial for prehuman recruitment.»*

Maybe, maybe. But it's easier for a person in the savannah to just point to a trace or draw it with their hands in the sand. This will be both concatenation and predication, which is

quite accessible to a human at the considered level of development.

*p.138 «But it must still be borne in mind that the recruitment sequences I have described are more complex than any communicative behavior in any other species (barring our own) and involve transfers of information more detailed and specific than any other ACS can perform. Moreover, the information transferred is not information about the here and nowas it is in the case of predator warning calls-but refers to things outside the sensory range of message recipients, just as (most of the time) language does.»*

The study of traces as iconic signs that objectively exist in the past and future, as well as those who left them — a human simply had to figure out: who has passed, how long since they passed, how many animals have passed, can they come back in the future, etc.

*p.139 «... but bridging a time-and-space gap those others couldn't have bridged for themselves-recruitment turns out to be surprisingly rare in nature.»*

Bickerton's « *time*-...» in a limited sense, refers only to the time to move to food, and not across any range. Traces also provide a human with a time range. These trace could be either an hour old or a year old. And anthropologists are still studying the traces left by the same people thousands of years ago.

The main thing is that bees and ants do not and have not had an iconic symbol that could truly break away from the situation here and now, opening the ability to the system of times. Their *displacement* is also a situational here and now, if you think about it. Food is not meant in general, but simply outside of sensory receptors: it necessarily exists, but not here, and not there, but at the same time it is now-there —

and not ever in abstract time. Nevertheless, these eternal artifacts of communication as gossip, status in the group, or rather an understanding of their significance can only be after understanding the problem in order to purposefully (and not instinctively) avoid or solve the problem. Otherwise they are not needed at all.

*p.142 «If human language began with the same function as ant language, why wouldn't it have remained as a narrowly restricted mechanism for improving foraging capacities, and never acquired any broader functions?»*

A very correct and very interesting question. It is this question that the hypothesis of the understanding of death exhaustively answers. It was this understanding that made it possible to understand that it wasn't only problems with food that lead to death. And any function can be performed better or worse with respect to overcoming death — the ethical method. There are an infinite number of such problems in general. This approach, through an absolute problem, is the driver of cognition. Only by understanding death as an independent phenomenon, or, as an absolute problem, are we were able to greatly expand our understanding of the structure of relationships in the material world.

The problem of death for life is comprehensive. So, even if we once considered the stars just pretty dots in the sky, now we know that the laws of celestial mechanics and the life of stars are an inevitable catastrophe for all life on our planet. For example, our Sun's perpetual growth will eventually cause us, and all other life, to perish and be destroyed. I'm not even talking about asteroids, the appearance of which is unpredictable in principle. And only a person with his own language understands that something needs to be done about it. The development of science shows us more and more new problems, previously unknown or not understood, but capable of critically affecting the life of mankind, and indeed all living

things on the planet. Therefore, knowledge is inexhaustible, and therefore Development is inexhaustible.

*p.142 «The other question is why, once some simple protolanguage had gotten started, did culture seemingly stagnate, almost up to the point where our very own species, Homo sapiens sapiens-wisest of the wise-emerged?*

*…Shortly after the bigmammal-scavenging phase we reached at the end of the last chapter, our ancestors began to produce something called a n Acheulean hand axa teardrop — or pear-shaped stone object that approaches perfect symmetry. … Whether it served any or all of these functions, this Lower Paleolithic Swiss Army knife was produced, virtually unchanged, for at least a million years.*

*When I give talks on evolution, I often tell my audience things like, The new model Ford brought out this year is so good it will probably still be in use a million years from now. That helps to bring home to them the immensity of the gulf between our ancestors and ourselves. It's unthinkable that our species would produce the same model car even for a decade, let alone a period five orders of magnitude longer, no matter how good it was. Our itch for innovation-even if sometimes the new thing turns out worse than what went before-makes any such possibility ridiculous. Ancestors or not, the hand ax makers must have been a totally different kind of being from us.»*

This suggests that the development of the language also requires a qualitative transition. If the archanthropes already had an abstract language, but it did not yet have a sufficient level of development to understand death (Fig. 6), then what do the burials without a ritual in Cima de los Huesos tell us? But, again, these were already burials, and not a landfill, like the Sierra de Atapuerca of the early layers. Yes, there was a proto-language that already developed abstract concepts and categories based on iconic signs thatformed the sound series of the language, syntax, and promoted physical selection such

as speech control, Broca's and Wernicke's area already being formed, and so on. It's like teaching a child a language — it only takes a few years in a fully developed language system, but the birth of that language system itself took about two million years. It is necessary to approach the understanding of the problem with a certain system of abstract concepts and with a syntax that organizes the language and interaction of abstracts and categories in the established system of times, no less. Not being able to see that death is behind every detail of the surrounding world, the archanthropes had no motivation to develop their tools. As we discussed above, if there is no problem, or rather, there is no awareness of the problem, then why waste energy on processing the stone? If the problem is clear, then improving the quality of a stone tool makes the same sense as improving the quality of a car — repelling death in all directions. After all, no matter how the style changes, safety for passengers, safety for pedestrians, and safety for the environment always improves. But the fact that the archanthropes had already developed a proto-language, even without culture, is because it gave them an evolutionary advantage from the very beginning. And so, once the understanding of death came, it was a qualitative transition, a big bang, or a cognitive revolution, as Yuval Noah Harari calls it. This revolution gave birth to everything: ritual, culture, cognition, and development because it's all about the same thing. Only the view of the world changed, no random genetic mutations were required at that moment. That's how the creators of the Oldowan stone tool differed from us: a lack of understanding the problem. But after understanding, they were no different from us in any way.

*p.143 «There was never any moment at which you could take a parent and a child and say, This child was a true human, but the parent wasn't. Yet somewhere along the way, our minds changed, and they changed quite quickly, as these things go in evolutionary time.»*

There is such a moment: this is the understanding of death. An analogy with a child arises here, this is a very true moment that each of us has experienced. A child who has not yet understood death is holy, immaculate, or beyond morality. Children run naked on the beach for this very reason. And they also stop running naked for this same reason. In the story of the expulsion from paradise, Adam and Eve cover up the shame only by knowing death, and the knowledge of its existence is the acquisition of the categories of good and evil. The purity of a child lies precisely in the fact that he does not understand why the world is so dangerous, just as he cannot understand how he could danger the world.

Children discover awareness of death at 4—5 years of age [*Irvin David Yalom* Existential Psychotherapy]. This critical transition point is exactly what changes thinking irrevocably. A person completely revises his attitude to the world: he has the misfortune to understand death, as well as the happiness of sometimes forgetting about it. And, of course, the opportunity to overcome — to be a real human.

*p.154 «The ape branch lived in an unchanging environment and stayed happy in the niches it already had. Our branch was forced, at first, and chose, later, as its capacities broadened through successive constructions, to construct more and more new niches.»*

The hitch here is that, indeed, the theory of niche formation explains how human ancestors got into the savanna and how they survived. But at the same time, consciousness is needed. After all, if they understood that the formation of niches gives them an advantage, then they already had to have a language, a consciousness, and a theory of niche construction, all guided by starting to build new niches. Therefore, the theory of niche formation works only until the moment when the proto-man discovered and realized himself in a new niche and began to adapt to it or adapt the niche for

himself. But he began to do this in a different capacity, where the theory of niches is no longer needed for a human to develop. He began to provide development by an ethical method. There is also morality consisting of an accumulation of experience: what leads to death and what protects from death. These guidelines were reinforced by moral restrictions: stealing from each other is not good — so the tribe can quarrel and die, eating each other is not good — so the tribe can physically disappear, and so on. But it was necessary to pass the point that gives us the opportunity to understand what action will or will not lead to death.

*p.154 «The process of niche construction was what drove our successive speciations and made us what we are.»*

No, rather, the process of niche formation gave us the opportunity to see what others do not see or do not use.

*p.154 «But between construction jobs there were long spells of unemployment. That's why our forebears used the same old hand ax for a million years.»*

No, rather, they simply did not understand why it was necessary to improve the chopper if it already served its function. There was no ethical method yet: no worse or better. In other words, it corresponds to its niche. Here it is necessary to divide what about the niche theory is right in applying to a person, and what it cannot give. It is right that, indeed, the niche has defined the conditions for human development, but the development itself is already a question of another level. After all, the dynamics of modernization cannot be tied to niches. In this case, it would not make sense to upgrade cars so often, because they have not changed their niche for more than 100 years. But continuous research on the issue of overcoming death continues: improving the safety of the car for the driver, for passengers, for pedestrians, for the environment, for mar-

kets in the light of economic development, and so on. Our awareness of the fact that behind every little thing, in every detail, there is a potential to fight the death of an individual, and behind it, society — this is what spurs (not literally, but in different ways) engineers, marketers, technologists, politicians, consumers, fashion, etc, that is related to this Development. It was the same with the Acheulean chopper: it was determined by the niche, and in other words, changed only for the niche. But as soon as a human realized that if the stone chopper was a little better, more convenient, sharper, or lighter, then even this smallest detail of improvement could save a life, hunt more prey, make us a little stronger, and let you live longer. And so it is in every detail that as soon as the problem was understood, then the process of continuous, frenzied, and unstoppable Development started, detached from its niches. Now, it depends only on knowledge about the Problem and that is enough.

*p.156 «Accordingly, it would make no sense for a large group to forage together. Most days they wouldn't get enough for all of them to eat. The only strategy would be to break up into smaller groups.»*

Here it is strange not to assume that groups can be initially divided to follow specific tracks: one group followed the trail of a herd of ungulates, another followed the trail of elephants, while others remain in reserve for any of those groups that find a target. After all, after finding a goal, it is easier for any of the groups to take a reserve than to search for another group in the savannah who went into the unknown. In fact, they could rely on the footprints that showed them who went where and why. Thus, the index sign is a footstep, it is a symbol common to the whole tribe, all groups, and all group members,. Recruiting into the tribe after the discovery of meat does not require anything special except the reproduction of an already known footstep as an iconic symbol. The traces

of footsteps provides both translatability and a symbolic element of the proto-language, based on which it is possible to expand the systems of symbols into signals-symbols by connecting them and even building concepts if you add syntax that provides a space-time continuum of reference: far/near, long ago/recently, or will/was. In general, everything that is required for a proto-linguistic system is accumulation of quantity for its qualitative transition, and already different from the ACS in the sense of *displacement* and germs of the time system, to transition into a completely new quality that interests us — into language.

*p.159 «Language is, among many other things, an unparalleled instrument of social control. There's no coercion involved; I can't have you arrested if you leave, or talk, though if you start throwing things security will probably come in. Cultural norms and expectations take care of it all. But without language, those norms and expectations would not exist.»*

More precisely, not without language, but without what language gives. Language itself does not provide norms and culture, as can be seen in the behavior of children and talking monkeys.

*p.159 «It looks like the only way you could get them to go with you would be by telling them what you have found-several days' or even weeks' supply of the most nutritious food around. But you have no language. What can you do?»*

Yes, that's right, but if we assume that groups are separated by footprints, then it's enough to draw a footstep. Here we can mention the bonobo researcher Savage-Rumbo, who demonstrated the image of the signs. This means that the icon is technically and cognitively accessible to the ancestral human species.

*p.160 «So the real breakthrough into language had to be displacement, rather than arbitrariness.»*

*p.162 «Something that has long puzzled paleontologists is the enormous number of hand axes that have been discovered. No matter what they were used for, there seem to be far more than would ever be needed. Why were there so many? Why are they found scattered over the landscape, and why do so many of them show so few signs that they were ever used?»*

*p.162 «You don't know where the next large carcass would turn up, so you scatter some over the territory and dump others in strategically located caches.»*

If we are now grasping only the means of proto-language, it means that these proto-humans could not yet think — they simply had nothing with which to create a concept of hiding or concept of scattering, i.e., proto-humans could not purposefully scatter and hide. If there was no language, then there was no problem and so there were no goals and tasks yet. Most likely, the answer lies on the surface: on the one hand, hand axes are easy to manufacture. On the other hand, the ancients did not yet have concepts of purpose for later use. Therefore, after use, proto-humans immediately threw out hand axes. They could already make the product on the spot, but they could not know why they would carry them with them. The problem could only be known here and now. In the absence of a system of tenses in language, the problem is not known yet. Therefore, there is nowhere to undertake the task of *carrying hand axes with you*. This task did not exist yet, until a system of tenses appeared in the language. This is the same situation that animals are in: monkeys, birds, and all animals using tools. They do not improve and do not preserve tools for the same reason: the manufacture and use of tools in a situation of here and now. They make and use tools in a here and now situation. They don't know why they need it, because they don't have an understanding of the problem because there is no time system, and there-

fore no abstract language yet. It was the same with the archanthropes: they were just developing a language, and they were dealing only with the accumulation of its quantitative indicators: categories, symbols, signs, and the construction of their interactions. Therefore, the cumulative effect of the action of the language can come only when it is qualitatively born. Only when the archanthropes realize that the problem is not only now, but it always is, and will always be the future. And only in this case it is not necessary to throw away the hand axes — for it will be useful in the future, which the archanthrope will be able to learn about only when he develops a language. Without a future in his mind, he will throw away his hand axes as soon as he loses the momentary need for them. Just like animals using objects do.

*p.163 «There's no particular order to it, we're not that organized yet-order will have to wait on language.»*

That's it! There is absolutely no order. Not in the manufacturing of tools, not in their use, nor in their improvement. Order is a system, and a system must be created as it is already a product of activity. And language is not an order in itself, but only a means to create order as a system as part of the solution to the problem (but, only when we know about it). Here the problem again becomes a source of action — to restore order. As a result, in general, all human activity is subordinated to the solution of a particular problem, as a derivative of the main problem: death. And it is for this reason that the punishment for violating the order is reduced to the restriction of the guilty's life. Having understood the problem of death, and having become a human, we ourselves begin to use death to establish any order we need.

*p.165 «The selective pressure had to be strong.»*

If we consider my hypothesis: the book of savannah footprints as a niche, and what Bickerton describes, then the transition with the help of this book into the niche of higher scavengers, the ability to correctly read the trail led to improved hunting skills and gave prey. The index sign of the footprints, which could easily be turned into an iconic one, graphically depicting the trail with a hand in the sand, using this for recruitment, and subsequently for proto-planning. I.e., because there is no future yet, and because there is no language, there is no need to plan yet. And as a visual of the here and now planning type: here are the tracks of elephants, or the image of the trail of elephants, and there goes the whole group in that direction. Here are the tracks of a hippopotamus, or an image of a hippopotamus track, and there is a group walking along it now. And when someone connects the ACS signal with the icon of the footprint image, which is regardless of time, they can conclude there was an elephant here, there is now, or there will be when we find the elephant and signal about it. This is how the accumulation of several processes necessary for the future of the language takes place: iconic signs, the merging of signs with ACS signals, and the appearance of a time continuum (there is a footprint — so there was an animal here — and the animal is where the trace leads — and this animal will be there for lunch).

*p.165 «The selective pressure had to be unique.»*

The very ability to highlight the graphic component of footprints can be considered a unique niche, which was not and is not present in other animals. For example, the ancestors of elephants did not need to study their tracks because of their physical structure and nutritional characteristics. Dolphins are limited by their environment– no long-term graphic traces remain in the water. But at least dolphins have socialization. Some branches of monkeys remained to live in trees where there are no footprints on the surface, and thankfully,

they did not need them. Those species of monkeys that adapted to life in the savanna eating plants did not need to examine tracks — they identified other signs of another nutritional niches. I.e., the need highlighted by Bickerton to look for large animals — namely large ones, because they leave noticeable footprints and to look for them is very suitable to the hypothesis of footprints as a direct resource for the development of proto-language. And in general, other animals use more specialized receptors to search for food: chemical receptors (sensitive sense of smell), sound receptors (acute hearing), or specific vision receptors (twilight vision). Other animals found themselves in selection traps: the more selection specialized the sensors, the more they lost their versatility. On one hand, this gave them an advantage over other species, but on the other hand, it blocked their exit from the cage of here and now. The archanthropes, having examined the footprints, and most importantly, realizing that they do not mean here and now, but rather there or then, that's how they were able to find a way out of their caged here and now. And, most importantly, the footprints clearly put pressure on the selection in the niche of the proto-man, because they increased the flow of food for him, and could ensure safety.

*p.165 «The very first use of language had to be fully functional.»*

Finding prey from the footprint is in itself a functional event. The trick is that the archanthropes were led to this by the niche according to Bickerton, with which I completely agree. But what exactly the footprint gave the opportunity to try:

— displacement
— indexicity
— iconicity
— connectivity
— a system of tenses

The search for prey on the footprints does not require the use of all these moments at once. They could be developed and used gradually: together or separately, and in any available combination. The skill could be forgotten and found again, and this gave room for selection to work, so history could stretch over two million years, gradually postponing the best variants of phenotypes in surviving genes: the formation of a speech apparatus in conjunction with general vision and hearing, rather than specialized spectrum, to conduct selection according to behavioral socialization strategies, and so on.

*p.165 «The theory mustn't conflict with anything in the ecology of ancestral species.»*

Such a hypothesis completely fits into the canvas of modern data on the dynamics of Homo evolution. The only thing is that it was still not a language until it was made possible for a human to see the main problem: death. Like a small child who already knows how to talk to one degree or another but has not yet realized how cruel this world is. At that stage of development, when language becomes sufficiently exhaustive to understand the problem and see death as a problem, it becomes precisely a language capable of giving us morality as a dichotomy of attitude to death and reason as an attempt to solve this problem by looking into an infinite universe of large and small manifestations of the problem.

*p.166 «The theory must explain why cheap signals should be believed.»*

The hypothesis of the footprint as an index symbol perfectly explains why everyone believes this cheap signal because it is not someone's manipulation, but rather a symbol of the objective reality that left this trace. Turning an index symbol into an iconic one, such as depicting a trail for recruit-

ing, the proto-man took the next step. Here a cheap signal could already be misleading, but selection helped. Those individuals who used the iconic symbols unproductively, most likely killed themselves and their groups in a fruitless throwing around of the savannah. Over time, when a person developed the sound equivalent of a symbol of the footprint, it was already clear that the symbol was connected with reality and the question of trust in the symbol could be associated with a premonition of death. The deceived groups died together with the deceivers. It is no surprise that deception is consistently labeled by morality as evil and is tabooed, because it can lead to death. It is the honesty of the symbol that saves the group. Therefore, the question of price of the signal gradually faded into the background, putting forward another parameter: honesty, but, it required an evaluation system — hence forth morality. All this was born and was becoming at the same time: symbols, their connections and meaning, and their relation to reality.

*p.166 «Finally, the theory must overcome primate selfishness.»*

The objective origin of the footprint does not imply egoism or altruism in principle. Tracking is available to the entire group. Moreover, the footprint by its presence, by the very situation of its presence, suggests overcoming egoism. If we all see the footprint of an animal that none of us can cope with, then it remains, and this is important, in conscious decision, not by instinct, to unite and pursue to defeat it. This solves another mystery that Bickerton points out:

*p.167 «Human cooperation has long been a puzzle for anthropologists. Robert Boyd and Peter Richerson put it like this: Our Miocene primate ancestors presumably cooperated only in small groups mainly made up of relatives like contemporary nonhuman primates... Over the next 5 to 10 million years some-*

*thing happened that caused humans to cooperate in large groups. The puzzle is: what caused this radical divergence from the behavior of other social mammals? Did some unusual evolutionary circumstance cause humans to be less selfish than other creatures?»*

This phenomenon can also be explained by footprint theory in the context of the theory of niche formation in Bickerton's vision.

*p.169 «But beyond that, Chomsky in particular has been the target of vicious criticism because he is seen to embody one side of a dire rift in modern thinking-the rift between people who (like Chomsky) believe human nature is largely determined by biological factors and people who believe human nature is largely determined by human culture, which in turn has largely broken free from biological constraints.»*

By the way, …broken free from biological constraints precisely because, in essence, this is a humans goal — overcoming constraints. Again, I never tire of repeating that only the ability to see constraints gives us the opportunity to try to overcome them. I do not know if this is a paradox or an obvious pattern. But nevertheless, defining the essence of culture and human in this way we can then not subconsciously, but consciously, see both the goal of conscious development as a specifically human phenomenon, and the purpose of human as a specific entity — as an agent of development. Of course, this may seem like a very narrow of human destiny at first glance, but so what? That is no matter if the goal achieved by the human is defined wider, more powerful, and more desirable than the whole of human nature in all its possibilities and manifestations. The dream is attractive precisely for its unattainability, but we will return to the discussion of this part in more detail in the chapter The Way of Nietzsche in the continuation of this book.

*p.184 «A concept is something in the mind. Once it exists, it can affect behavior. Before it existed, it couldn't.»*

*p.184 «Chomsky has always emphasized that language is at least as much a system for structuring and thinking about the world as it is a vehicle for communication.»*

Yes, and if we accept the footprint hypothesis as first an index sign, then an iconic one, and then a symbolic one, it turns out that this communicative-cognitive dichotomy of language was there from the beginning, and there are no contradictions.

*p. 189 «So let's put the...»* three *«...evolutionary models side by side:»*

| *BICKERTON's* | *CHOMSKY's* | MINE |
|---|---|---|
| *TIME 1: Animals have concepts that won't merge.* | *TIME 1: Animals have concepts that won't merge.* | TIME 1: Animals have ACS signals that won't merge and do not have a time system. |
| *TIME 2: Protohumans start talking.* | *TIME 2: Typically human concepts, which will merge, appear.* | TIME 2: Protohumans find an index sign (footprint) in a new niche (savanna), pulling their consciousness out of the here and now situation. The index sign turns into an iconic one with recruiting attempts in the form of primitive graphics. The combination of the index and iconic sign with the signal of the ASC triggers the physical and cognitive evolution of selection towards language and speech. |
| *TIME 3: Talking produces typically human concepts.* | *TIME 3: The brain gets rewired.* | TIME 3: On the basis of footprint index signs and iconic signs, in conjunction they with the signals of the ACS, there is a process of natural selection:<br>1) development of the speech apparatus<br>2) reconfiguring the brain<br>3) generation of specifically human concepts in the unity of signs and sounds. |
| ***TIME 4: Merge appears and starts merging typically human concepts.*** | ***TIME 4: Merge appears and starts merging typically human concepts.*** | **TIME 4: Merge appears and starts merging typically human concepts** through the emergence of the tenses system. |
| *TIME 5: The brain maybe gets rewired (plausible but not certain).* | ***TIME 5: Capacities for complex thought, planning, etc. develop.*** | **TIME 5: Capacities for complex thought, planning, etc. develop.** Planning and reasoning in general can only be done in a time continuum. |
| *TIME 6: Capacities for complex thought, planning, etc. develop.* | *TIME 6: People start talking.* | TIME 6: The capacities for complex thought and planning in the time continuum allows human to realize death as a problem, then express their attitude to it through good and evil which leads to the emergence of an ethical method of development:<br>Understanding the problem —><br>Task as problem formulation —><br>Purpose as decision of task —><br>Achieving the purpose as overcoming the problem. |

It is strange that Bickerton put concepts at the first stage, while concepts are already formed conventions, words. In theory, at this stage we have only the ACS signals. Therefore, in my interpretation, we follow from a confirmed source — what animals have: the ACS. Taking into account the problem that prevents the ACS from becoming a language, the cage of the here and now restriction, the lack of translocability of the ACS signals results.

By the second stage, Bickerton seems to describe the whole story of creating a niche, recruiting and the formation of sound recruiting methods, and already stating conversations. However, without t*ypically* human concepts (*third stage*), according to the example given by Bickerton. At this stage, I propose to consider in more detail only the history of the development of the niche and what the niche gave to the protohuman. Without contradicting Bickerton's hypothesis about niches and recruiting, we note that only the savanna could give our ancestors specific index signs of natural origin: a natural and extensive, relevant and interesting book of footprints. We do not look at the news with such interest, as the protohuman peered into this book every morning.

In the process of moving from the niche of lower scavengers to the niche of higher scavengers, proto-humans could use these index signs outside of the here and now situation to track down wounded or lagging animals and even herds of animals. Also, proto-humans, thanks to their upright posture and developed upper limbs, can graphically (on the ground or in sand) reproduce and imitate index signs of traces for the purposes of recruiting other groups, making these signs iconic. I.e., the trace left by an animal is an index sign that naturally fell out of the here and now context, and gave the proto-man a picture of the past and future: the animal was here and the animal will be there if you follow the trail. Then, using Bickerton's script, we send the recruiter to another group, and if he is unable to find the footprint, then he may as well draw it on the sand with his hand so that the recruited

group understands what he means.[1] That is, there is not even a need to portray a specific animal if the proto-humans have ever seen footprints, since they all have definitely seen them. There are a lot of footprints in the savanna and it is impossible that proto-humans have not been familiar with them since early childhood. Likewise, it is impossible to exclude the connection of arbitrary, emotional sound screams of the ACS, which break out during recruiting from recruiters when demonstrating iconic signs of footprints. Here we see a whole chain which I will here describe.

The animal, the index sign (footprint) left by him, the iconic sign (image of the footprint for recruiting), and the cry of the ACS, combined with the iconic sign in a recruiting situation — give a human the very convention of the animal that we are looking for. I wouldn't call it a conversation, but isn't this a scheme for the formation of a specifically human concept — a word? It is clear that all this did not arise suddenly but passed through hundreds of thousands of years of evolutionary selection, influencing the development of brain zones responsible for the recitation of controlled speech sounds, and not the emotional sounds of the ACS. Cases are described when chimpanzees in experiments tried to control the sounds of ACS in some situation. Jane Goodall describes a case when the chimpanzee, Figan, to whom the researchers gave bananas, let out a food cry (ACS). At this cry, the older males came back and took the bananas from Figan. Another time, Figan behaved differently when he forcefully suppressed a food cry and kept bananas for himself.[2] Next, we can note the development of hand coordination for the image of graphic copies of footprints.[3] At this time, the development of a breathing apparatus took place and a speech apparatus for

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[1] Susan Savage-Rumbaugh: *The gentle genius of bonobos* https://youtu.be/a8nDJaH-fVE?t=681, 11:21

[2] Jane Goodall *The Chimpanzees of Gombe: Patterns of Behavior* (1986)

controlling sounds was produced (initially emotional sounds). And if the emotions and sounds of the ACS were once manifested in the absence of an animal, then only in the presence comes iconic or index signs. Then they can gradually move into the zone of control, that is, conditionally from the zone of instincts to the zones of controlled speech.

So, we found ourselves already in the third phase, when the unity of external and internal factors of the development of language and speech evolutionarily guided both the complex, interconnected internal restructuring of the organism, external (social) manifestations in the form of emerging conventions about concepts, and words as sound copies of the footprint — all in parallel with the graphic iconic and index symbolism. If, at the sight of a real lion, a proto-human made a specific sound of the ACS then issued it at the sight of the index sign of the lion's footprint in the absence of a real lion, and further echoed it by drawing an image of the footprint in the form of an iconic sign symbolizing a lion that is not here and has never been, then sooner or later it will be enough for him to make a sound of the ACS within the established convention, giving him the essence of a symbol, but not a signal. And it will ultimately be the word: the concept and the social convention. This process can be called the formation of language and the evolution of human by physically providing himself with a language function, which lasted about two million years. Understanding the basis from which vocalization was based: the graphic index and iconic symbol, we can say that it was the starting point of the evolutionary path of language and the evolutionary path of human from the great apes (who did not need a speech apparatus) to the human who already needed this apparatus. It turned out to be evolutionarily necessary for proto-human. The hypothesis

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[3] Susan Savage-Rumbaugh: *The gentle genius of bonobos* https://youtu.be/a8nDJaH-fVE?t=681, 11:21

here is that uncontrolled vocalizations of ACS gradually turned into controlled ones, relying on a graphic sign of natural origin — animal footprints — and using this system to qualitatively improve the ability to survive.

On the basis of the cohort of concepts formed in this way, and in a variety of hunting situations, the proto-human will inevitably begin to combine and connect the signals that have departed from the ACS. Therefore, the signals controlled by him, which have become words, carried out a level of semantic merging with each other. This phenomenon will continue to develop as a language, gradually and inevitably acquiring sophistication in the situation described by a system of tenses and a degree of abstraction for means of its expression: semantics, syntax, and grammar. This was the fourth stage, where the scheme of Bickerton, Chomsky (in Bickerton's view), and mine completely coincide. The only thing I focus on is the emergence of a time system that makes it possible for cognitive models, abstracts, and conventions to work in a time continuum.

And so, at the fifth stage, with the help of language, a person simply has a mind with the ability to create models, plan their development over time, and draw conclusions about the results. But what did reason give him? As a rule, this question is considered inappropriate — reason seems to be enough cause for all uniquelly human qualities to begin to reveal themselves. But I single out another stage in the development of the language and human reason: a kind of maturity of language or the conditions of sufficiency of the language. I suggest paying attention to the moment when both the language already exists and the mind is already in action, but its qualitative effect is not yet there.

By gradually building an abstract model of the surrounding world in his mind, a human fills in a database of natural phenomena surrounding him, gradually completing a complete picture of the world around him. This cannot be done immediately, even if a developed language already exists, for

children show us that. Once mastering the language, they do not immediately realize that the world around them is full of dangers and threats of death. This is called childlike spontaneity, or, innocence. This is when a child is not yet able to do evil, because he simply does not know what evil is. He also cannot recognize evil in relation to himself: the child can calmly run out onto the road without looking around. And when will the child find out about it? Only when he can understand death, and understand it abstractly. To understand how one can be alive and not be alive in relation to oneself. This happens to each of us, as a rule, at 4—5 years old,[1] it is a kind of catharsis that changes our lives at this moment. Exile from paradise. The proto-human had the same moment of catharsis.

*p.190 «Chomsky believes that human thinking came first and enabled language. I believe that language came first and enabled human thinking.»*

We discussed the order of succession in detail above: all levels of abstraction (index, icon, symbol) appeared sequentially, then the system of tenses for abstractions created a language, and language became the substratum of thought enabling the movement of the model in time. I agree with Bickerton: *…language came first and enabled human thinking.*

*p.195 «Start by thinking of the simplest answer to the question, why are other animals trapped in the prison of the here and now? The simplest answer is, that's all they've got.»*

And the most obvious answer is that they have no other times except now, because for the existence of another time, another reality must exist — an abstract one. At the same

[1] Irvin D. Yalom *Existential Psychotherapy (*1980)

time, we should not forget that an abstract without time, by itself, still does not give anything.

*p.195 «They can't communicate about things beyond the here and now because they can't direct their thoughts outside the here and now. And the reason they can't do this is also the reason they can only refer to specific, immediate events. They don't have abstract concepts, and we do.»*

By default, abstraction does not contain a time continuum. Time is a concept of movement of abstraction. I think that abstraction is available to dolphins, because they called each other by names.[1] Talking monkeys were taught words — abstract symbols. But they do not think in our mode. Now, if an abstraction (for example, a graphic footprint of an animal) is involved in time travel, the animal was here, becomes the starting point for receiving the benefits of abstraction — when it began to move independently in consciousness. At some point, human noticed that it was possible to create an abstract multiverse for the development of some primitive or complex abstract models in time — this was the moment of the emergence of reason.

*p.202 «Note that no ape has ever joined more than three signs in a communicative message. It's likely that they've never been able to merge more than three concepts into one coherent thought.»*

A very characteristic moment. If three characters is the maximum for monkeys, then most often talking monkeys show one or two signs. The system of tenses does not fit into such a syntax. So, 400 grams of brain is not enough to process

[1] Stephanie L. King and Vincent M. Janik *Bottlenose dolphins can use learned vocal labels to address each other* (2013)

such a volume of information on a biological carrier. But since even the minimal index abstraction already gave an evolutionary advantage, it still brought benefits from the very beginning, it is quite logical that it was the increase in the volume of the brain and its information processing capabilities that became the main direction of brain development in the evolution of our ancestors. It would be worth trying to teach animals a language with a system of tenses, and most likely it will succeed with dolphins, because their brain volume corresponds to this task.

*p.204 «Forethought and planning in turn demand that you work not with physical objects but with your ideas of those objects-concepts you can move around in your mind to make new patterns and create marvelous and unprecedented things.»*

It seems to be obvious that movement takes place in space, but since in classical mechanics it is impossible to be at different points of space at the same time, then without the concept of time, movement in space cannot be realized. So, it is important to understand the temporal component of consciousness. The system of tenses is the most important moment in thinking and in language.

*p.204 «Now note precisely where the divide, the discontinuity, the boundary between human and nonhuman falls. Not between human ancestors and apes. It falls between our own species, on the one hand, and on the other, all other species that live or have ever lived, including our own immediate ancestors.»*

*p.217 « … even when that step had been taken, that's involved in creating true displacement, true escape from the here and now in which all species had hitherto been trapped. To do that, you had first to make concepts, mental symbols of reference no longer bound by particular instantiations of the things referred to. Only with such abstract symbols could you roam mentally, freely through space and time as we do today, in both language and thought.»*

Everything is correct, and even the time is mentioned. Yes, there really is a border. And it really takes place inside own species. The cognitive leap was not biological, as Yuval Noah Harari says in the book *Sapiens A Brief History of Man*. The leap, or cognitive revolution was precisely cognitive, that is, it took place in consciousness — in the neurons of the brain.

The moment of understanding what you did not understand a second before does not require a physical restructuring of the body. And it doesn't matter whether Einstein's concept of relationship between space and time or the concept of relationship between footprints in the wild savanna and the future lunch has reached your consciousness.

*p.222 «And nonexistence is something no ACS can handle. It can't handle it because ACSs refer, if they refer at all, to things that actually exist, in the here and now-mind-independent entities that have a physical life in the real world. But no flood can't refer to any flood there ever actually was-only to the abstract concept of floods.»*

That's the point. To understand non-existence or death, you need to move not in space, but in time. From the past experience of seeing a flood leading to death, it is necessary to transfer it to the future, and realize it in the present, where we are going and where we are. It was this tragedy that once covered a human: his expulsion from the paradise of ignorance took place. Animals continue to live in this paradise. Such expulsion is a purely cognitive phenomenon.

*p.223 «In order to create new cultural and technological stuff, you first have to put thoughts together in an orderly and disciplined fashion. In order to do this, you need syntax.»*

Before you create *new cultural and technological stuff,* you need to understand who to create it for. The function itself is still far from Development as phenomenon. If chimpanzees

and bonobos, crows or some other animals use devices, stones and branches in the form of tool activity, then they can use it for millions of years for a certain function. Just as nature, in the form of a genetic mutation, gives them tools of natural origin and any level of complexity: horns, hooves, receptors, chemical sensors, magnetic sensors, echolocation — yes, anything. But it doesn't change anything qualitatively. So, the putting thoughts together by itself does not give rise to culture and technology. This coherence should first make it possible to understand the problem so that it can be start to be solved. But, that's not all, there can be many different solutions to the same problem. For Development, a Method of selecting solutions is needed. But this is already a qualitative transition, since in this case when selection is not physical, as in nature, but abstract, in consciousness, with the help of universal criteria built around the absolute existence of death, that is when there is a start of culture and technology. Then it is clear, why all this is necessary.

*p.238 «Brouhaha about Pirahã.»*

Unfortunately, in this chapter, while talking about recursion, Bickerton did not notice the main thing: there are no past and future tense forms in the language of Pirahã. Accordingly, the Pirahã have no understanding of the concept of death (it is perceived as form of sleeping) and therefore they have no understanding of the absolute problem. There is no understanding of problems at all and so no overcoming of problems as a system (if they catch a fish the Pirahã can eat, if not, they cannot — there is no difference for a Pirahã and no ethical assessment).[1] As such, there is no culture and development (immediately after hollowing out the boat, they no longer know how to make a boat — remember, how the hand

[1] Daniel L. Everett *Don't Sleep, there are Snakes* (2008)

axes scattered across the savannah). The Pirahã have no evidence of building multiverses –no fairy tales, gods, or children's toys (everything that is not in the present reality, they cannot abstractly imagine). Moreover, there is no treatment and assistance to the sick (the Pirahã cannot imagine an abstract model in which there is an absence of disease). They don't have a problem of personal identity — they change their name as a person throughout their lives, etc. But at the same time, the Pirahã are happy, they remain in the paradise of ignorance, because they have not tasted the fruit from the tree of knowledge of good and evil, because this fruit is a language with a system of tenses.

*p. 239 «Recursion, we are told, is the rat that ate the malt that lay in the house that Jack built. It's what enables us to expand sentences indefinitely, to infinity if need be, by inserting phrases within phrases, clauses within clauses-just like those Russian dolls that have smaller but otherwise identical dolls nesting inside them. It's what, as we saw in chapter 9, Chomsky and his colleagues regard as not only the most central part of language, but possibly the sole content of FLN (the broad Faculty of Language), the only part that's unique to humans.»*

By the way, and the production of phrases to infinity — what practical sense is there in this? The system of times does much more useful things, it makes it possible to obtain the infinite freedom of the creator: to build an infinity of abstract metaverses, which are different models of problem solutions, and which can be projected onto reality and solving problems. I'm not sure that recursion can solve even one problem.

*p.245 «With the full force of a symbolic-syntactic language at its service, our species began to turn out novel artifacts.»*

If a human got full force at his service, then we cannot go without a clear answer to the question: for what purpose did a human start using this power?

*p.246 «War is the locomotive of history, Tr otsky said. Just as World War II called forth all the energy and ingenuity of the English and Americans, so did the conflict with a species of almost equivalent abilities-the Neanderthals-call forth all the energy and ingenuity of the Cro-Magnons. That, rather than any mutation, any sudden surge in capacity, is most likely what accounts for the Great Leap Forward.»*

It would be more accurate to say that it was not the conflict itself that required a qualitative transition, but the conscious consequences of this conflict. In nature, animal species are dying out, yet they do not understand this. There are no wars or history in nature. Despite there being no less death and suffering in nature — after all, wildlife is engaged in absorbing itself for breakfast, lunch, and dinner on a daily basis. Some beings eat others as their daily routine. And the complete extinction of animal species is not a tragedy either for nature or for themselves. Therefore, this process is called selection, since the species is not able to influence what happens to it. If the Cro-Magnon human turned out to be sufficiently developed to understand the consequences of confrontation in the form of awareness of death, and then expressed his attitude to it as good or bad, then only at this moment did he have the motivation to use all the strength and skill that he had in a collision with Neanderthals, without waiting for whom selection would choose.

*p.246 «Of the types of niche construction that John Odling-Smee and his colleagues described, one was negative niche construction.»*

Here Bickerton hints at ecological problems when a species eats out its ecosystem. Indeed, in nature, species can eat out their ecosystems and die at the same time. But a human, understanding death in general, and being able to model the future, saw this problem as well. The problems of niche ecology are being raised not only today. Beliefs and taboos were a kind of ecological conventions of the ancient world. When the future American Indians, while settling the Americas, quickly and irrevocably destroyed all wild horses. But after that, taboos and rituals prevented the destruction of all deer. There were no other obstacles to destroy all the deer. But the need to perform a difficult ritual before each hunt, honoring the victim as an equal participant in the ecosystem is just a form of restriction of hunting, protection from eating out its ecological niche. It's an artifact of ancient morality as a relationship to death, and that's what works.

*p.247 «Whether the niche is created slowly, by instinct, over millions of years or (in part at least) by cultural learning over mere thousands makes no difference. The niche makes the difference.»*

From the standpoint of my hypothesis, this is a serious mistake. Yes, the theory of niches is correctly grasped in terms of considering the evolution of species and the formation of prerequisites. But what then is the cognitive revolution of a human if the niche both defined the species and continues to define it? If we consider the described situation from the point of view of the appearance of ethics as a method in a human, then we see a huge difference. Actually, it explains why selection needs millions of years, and for ethics, thousands are enough. It does not matter the complexity of palaces that termites build if they don't have a problem, a task, and a goal. They don't have a construction plan, and they can't decide what could be structurally better or worse. Worse in relation to what, or better in relation to what? If they don't know

about death, then they can't have an assessment method. Rather, that method is outside of them. Selection decides which termite mound is worse and which is better, but it does not inform the termites about this.

*p.249 «Our niche gave us language, language gave us intelligence, but only the wise use of that intelligence can keep us free and fully human.»*

There are several points here: the niche gave us only index signs — footprints. And only the human himself could decipher and apply them. This human activity bring human a language. Yes, language includes a system of tenses, and only this can be called Reason. But the Mind can be applied in different ways. Speaking about the fact that « … *only the wise use of that intelligence can keep us* … », Bickerton imperceptibly begins to use an Ethical Method that allows making decisions about a particular path, evaluating this path. Hence, Reason is only the basis for Ethics. But only Ethics allows Development. Where does Development lead? If the ability to understand the problem is the beginning of the path, then the end of the path is overcoming the problem. Only then is it clear what the mind gives us: we gradually learn not only to avoid death, like the rest of living nature, but we learn to overcome death. This is the very freedom that we are always looking for. This is the meaning of the belief in the immortality of the uniquely human soul. Yes, only the understanding of death allows you to believe in immortality… this is the way of a human. So far, we have increased life expectancy by two times relative to the natural limit frame of our species.[1] We have expanded the area of our presence many times more than the purely natural technical characteristics of our species would allow — we fly

[1] Mayne B., Berry O., Davies C. et al. *A genomic predictor of lifespan in vertebrates* (2019)

in the atmosphere and stratosphere, go into space, and are active in the oceans, seas, and rivers. And do all of this without any genetic rearrangements to our body. Without selection and without physical evolution helping us. This is the power of language and cognition: it has banished us from the paradise of ignorance, condemning us to cognition and activity. So far, we have accomplished a lot of success in the field of technical overcoming, from using a stick to dig to a nuclear reactor, but these achievements are not a part of a Homo physically. There are also achievements at a level that are physically part of a Homo: molecular biotechnology and genetic engineering. The same vaccination is the creation of an additional opportunity for your body. A vaccinated person is already formally a Superhuman. At least, super- in comparison to what the New man has in natural form. Perhaps we will be able to do the work that Selection used to do: the physical change of our body. If manipulations with the immune system make our body react in such a way that it is not afraid of deadly viruses, and manipulations with DNA that can rid a human of HIV, then what prevents the development of this direction from going further and further? Nothing. This is the solution to the problem. Let me remind you how death hindered Aristotle in his arguments on Ethics. It means that overcoming death is the true freedom. That freedom that opens the door to true happiness. Not to the happiness of forgetting about the problem, but to the happiness of overcoming the problem.

Finally, one can ask the question: if we want to define a human, and such a human has such a specific Language in contrast to the animal communicative system, then why is it necessary to focus on the understanding of death, and not the presence of a developed language?

Language is only a tool. Like a shovel that can rust in a corner for millions of years. It doesn’t mean anything

by itself until it is properly applied. For example, dolphins have obvious physical abilities for language: in a complex system consisting of 14,000 signals, there are both voice communication capabilities and a brain complex enough to control them such that names have been identified. But there is no evidence of Development. There are only about 200 thousand dolphins in the world's oceans, despite the fact that the ocean is a more capacious habitat than land. Firstly, the ocean space is global and accessible in three dimensions Secondly, there is simply more of it as 2/3 of the planet's surface is water. But dolphins do not overcome any restrictions, because they do not know about them. Therefore, dolphins live within the natural limitations of their ecological niche, without trying to go beyond them by a millimeter.

And how is the language used by human? We got the concept of an obstacle. Without the concept of an obstacle (problem), there can be no theoretical solution to it (in the form of setting a goal as liberation from the problem) and overcoming it (in the form of achieving the goal). Further, morality and ethics (attitude to the obstacle) provides us with a method in the form of possibility evaluating the achievement of a goal.

Nature goes beyond its limit frame by randomness (mutation and selection), therefore, in essence, it does not understand what is happening. No problems — no solutions — no achievements. For nature, nothing changes in the process of natural development, because it has no attitude toward this: whatever happens, it is neither good nor bad for nature (there is no morality and ethics), because there is no tool of reason (language).

A Human has tools, a concept, and an attitude to it. This is its specificity. And that's why he went beyond his ecological niche, and then beyond the planet, and, I hope, he will go beyond his essence. I persistently mark death only because it is

an absolute obstacle. And the person realized this immediately as soon as he had the concept of an obstacle in the time continuum. And it is for this reason that in the research of anthropologists, the beginning of ritual burials coincides with a sharp complication of material culture.

# Heidegger ’s Time

Using the material of Derek Bickerton, we established how a human jumps out of the situational here and now by reading index signs — footprints on the surface of the savanna — and transform them into iconic signs — hand drawn images used to recruit — then combining graphic signs with the emotional cries of the signal system into words, symbols, and speech. The main thing in this process is that the symbols turned out to be completely abstract, which made it possible to create infinite imaginary metaverses, and work with them in the system of the tenses of language.

*“... the Interpretation of time as the possible horizon for any understanding whatsoever of Being.”*[1] So time, as the ability to understand, forms the mind. And understanding, in turn, highlights not so much being itself as the problems of being, but rather the problems of life that it needs to be overcome. And if animals do not need an understanding of problems in order to avoid them, then it is enough for a human to know about the problems of being to take care of being. It is possible that the true essence of being will never be revealed by human, and the ability to do so will appear only after the qualitative transition of the human system into a superhuman system, when absolute overcoming of death is achieved. It is possible that only the superlife, which has no death, can clearly look at being in its essence. In my opinion, the topic of being is not available yet at the human qualitative level of development. So, I propose the following hierarchy of development:

1. Animals are living beings who do not know about death because they are in a moment where death does not exist. The

[1] Martin Heidegger *Sein und Zeit* (1927)

development of the animal world is based on avoiding the problem of death, where death itself serves as a tool of development in the form of selection.

2. A human is a socio-cognitive system that finds itself in an abstract time created by language. The human system is defined by the understanding of the problem of death, and its development consists in moving towards the hypothesis of absolute freedom of absolute overcoming. I am not talking about a human's understanding of being and attitude towards it, as Heidegger mainly considers. Objectively, not only being, but also the phenomenon of life has not yet been understood and biologically defined. Therefore, the relationship of a human, neither to being nor to life, cannot yet be determined.

3. A supermen is a super system in relation to a human. A supersystem defined by overcoming death for the life. Perhaps the development of the supermen will consist in the knowledge of being as a super-entity in relation to life, or being in relation to non-existence, or even something else.

So, it is precisely the system of tenses of language that Martin Heidegger considers in his treatise *Being and Time*. The only strange thing is that Heidegger replaces the obvious forms of the tenses of language with philosophical constructs like Dasein and the like. And under Heidegger's consideration of man's understanding of being, I claim that man is still able to understand not even life, but only the problem of life, i.e., death.

Heidegger constructed special symbols to experience the phenomenon of time without forms of time. And, it's probably just as uncomfortable to sleep on the ceiling. But, as we can see, it is technologically possible. Thus, on some points I do agree with Heidegger, and I will allow myself to use some of the great philosopher's valuable thoughts in defense of my hypothesis.

*p. 240 «We have indicated that death is an existential phenomenon.»*

And indeed, that is impossible to do without revealing death as a phenomenon. Although it would be more accurate to say that death is not a genuine existence, but a derivative of a genuine existence — life, as a phenomenon of its termination, or, the phenomenon of non-existence as once-existing. Here, this is impossible to do without an idea of the past, which is no longer exists. Hence, an abstract model of the past is needed, where the non-existent still exists. It turns out that it is possible to let the phenomenon of death into consciousness only by abstraction when a certain existence no longer exists in our present reality. Or, when the existing still exists, but in some future reality it might not. As Epicurus thought, among others as well, either we are alive and there is no death yet, or there is death, and then we are no longer there. This argument only works if we have an isolated experience of the present moment, and if we do not have an abstract system of the representation of the future, nor the past. Epicurus speaks of the animal state. And, it may be possible for a person to return to it if he forgets his language. For example, sometimes that is possible with the state of meditation. Most likely, this is exactly what enlightenment is, when a person manages to touch eternity, forgetting about time and their sense of being.

Therefore, the phenomenological perception of death requires an idea of time. This perception would not exist, if there is no longer a world that could exist in this time. So, to obtain the existence of time, the existence of an alternative world is necessary, which certainly does not exist in reality. Thus, the existence of both an abstract world of the past and of the future is necessary. It looks like a tree of metaverses that exist infinitely and simultaneously, but exclusively in the abstract world of a human's consciousness. Reality weaves all possible metaverses of all individuals of humanity into one thread of real history where metaverses of its interpretations are generated.

*P. 244 «With ripeness, the fruit fulfils itself. But is the death at which Dasein arrives, a fulfilment in this sense? With its death, Dasein has indeed 'fulfilled its course'. But in doing so, has it necessarily exhausted its specific possibilities? Rather, are not these precisely what gets taken away from Dasein? Even 'unfulfilled' Dasein ends.»*

If I may say, this is from the point of view of Living Nature, and since nature has no point of view, death is a necessary stage of development. Since development cannot be understood by nature, development has no goals and no objective to overcome death as a problem. In this situation, death itself becomes a tool for development. Death is a necessary, and quite effective, mechanism of development compared to the inanimate state nature. The cycle of the circle of life moves development along. In this sense, death does not take away, but on the contrary, reveals those possibilities that have not yet been realized by the ripe fruit that has revealed its possibilities. Death selects from all the options that life tirelessly provides. In this case, Heidegger describes the mechanism in the natural development of life as the provision of new opportunities in comparison to what would have not been received if the ripening of fruit would not be completed.

*P. 246 «Death, in the widest sense, is a phenomenon of life.»*

Exactly. A most valuable remark. Death arises only with the appearance of life. There is no death as a phenomenon ininanimate nature. And wildlife in this context has become a qualitative transition in the development of inanimate nature. Life as a phenomenon, as a result of the development of inanimate nature, has generated more effective means of development: death. With the help of this tool, objects of living nature go through their life cycle significantly more efficiently, in terms of time and energy, than do objects of inanimate nature, based on the results of developments obtained.

*P. 247 «The existential Interpretation of death takes precedence over any biology and ontology of life. But it is also the foundation for any investigation of death which is biographical or historiological, ethnological or psychological. In any 'typology' of 'dying', as a characterization of the conditions under which a demise is «Experienced' and of the ways in which it is «Experienced', the concept of death is already presupposed. Moreover, a psychology of 'dying' gives information about the 'living' of the person who is 'dying', rather than about dying itself. This simply reflects the fact that when Dasein dies — and even when it dies authentically — it does not have to do so with an Experience of its factical demising, or in such an Experience. Likewise the ways in which death is taken among primitive peoples, and their ways of comporting themselves towards it in magic and cult, illuminate primarily the understanding of Dasein; but the Interpretation of this understanding already requires an existential analytic and a corresponding conception of death.»*

It is interesting how Heidegger, in his own way, comes to the same key point that we put forward in the chapter «a source of development»: every ritual and every cult, even the earliest and most primitive, necessarily begins with the idea of death. That sources from knowing it is impossible to solve a task if it has not been given. Showering the deceased with flowers tells us that some problem is being solved in the direction of some goal. This is not just the awareness of a certain situational death as an event in a series of other events, but the awareness of death as the most important manifestation of life. I.e., the consciousness of death as a phenomenon related to all life. But this attitude is no longer manifested in a person as an object of the selection supra-system — when death acts on him for selection from the outside — but as a subject who understands death as a problem, an obstacle to the life of himself as a system. In this case, the ritual is an attempt to solve the problem. To invent something that does not exist, that no one has ever seen: to imagine a world that

continues life forever. This other world was created only to overcome the problem of death in a world where a solution is not yet possible. And if it is known that up to a certain point in the evolution of the *Homo sapiens*, there was no ritual: the dead were simply removed to be landfill. So, before the appearance of the ritual, proto-humans did not know about death, just as wildlife does not know about it until now.

*P. 247 «On the other hand, in the ontological analysis of Being-towards-the end there is no anticipation of our taking any existential stand towards death. If death is defined as the 'end' of Dasein-that is to say, of Beingin-the-world — this does not imply any ontical decision whether 'after death' still another Being is possible, either higher or lower, or whether Dasein 'lives on' or even 'outlasts' itselfand is 'immortal'. Nor is anything decided ontically about the 'other-worldly' and its possibility, any more than about the 'this-worldly'; it is not as if norms and rules for comporting oneself towards death were to be proposed for 'edification'.»*

Here we see a situation directly opposite to the one that we began to analyze in the ethics of Aristotle. If we consider good and evil separately, it does not make sense as it is a dichotomy. See, life and death are connected, but still it is not a dichotomy, just different entities. I would even say entities of different levels. Life is a grandiose phenomenon that has not yet been recognized by science: we cannot yet take some dust or substance and start life from scratch. And death is a phenomenon, a mechanism for the termination of life as a phenomenon, and a person has mastered this completely. If we divide them on this basis, then everything will fall into place.

In fact, Heidegger wonders about the attitude towards the existence of death, since this existence has been rightly established by him. And if he hadn't stopped there, Heidegger would have formulated morality the way we formulate it. But

going further into the absolute metaphysical in essence *after death,* trying to find an *ontical decision* by ontological analysis, but in fact being already in the field of a metaphysical solution to the problem of death, he received, as it were, contaminated material for his *ontological analysis*, involving here the solution to the problem of death as an integral part of the phenomenon of life. As if this representation exists, or as if wildlife would like to solve the problem of death. But if we know that for nature, death is a tool of development, part of the development process, and not a problem, then we clearly understand that nature does not need to overcome death.

These norms and rules» for comporting oneself towards death exist, of course, these are our morals. And metaphysics arises as one of the solutions to the problem, i.e., after the appearance of morality. The attitude towards death is generated in the same way as to everything that exists for us in time. Apparently, the understanding of death is experienced so vividly for us that the decision about overcoming death is perceived by a human so deeply.

Heidegger's attempt to find an *ontical decision* by analyzing the continuation-of-life-through-death fails, and Heidegger admits this. Unfortunately, though, he does not notice that only the attitude to death leads us out of the system of natural selection. That is, it removesthe position of the object from the action of the mechanism of natural selection, where the tool of the mechanism is death (that is, it gives a person the opportunity to consciously refuse death, gaining an independent system, or subjectivity). Only a human gets the opportunity to make a decision about it. Therefore, a human no longer needs selection. We no longer need death the way nature needs it: we replace the unconscious development by selection with a conscious development by method. Only after realizing any problem do we build a method: we begin development from the task, from the problem, to the solution, and to the goal. This is the moment of the qualitative transition from animal to human.

*P. 248 «Finally, what might be discussed under the topic of a 'metaphysic of death' lies outside the domain of an existential analysis of death. Questions of how and when death 'came into the world', what 'meaning' it can have and is to have as an evil and affliction in the aggregate of entitiesthese are questions which necessarily presuppose an understanding not only of the character of Being which belongs to death, but of the ontology of the aggregate of entities as a whole, and especially of the ontological clarification of evil and negativity in general.»*

Here, metaphysics pops up, which is what implicitly existed in the previous paragraph from Heidegger. If it were not for metaphysics, then there would be no question about the hereafter or otherworldly world. It was metaphysics that created otherworldly world, and no one else except a person knows about otherworldly world and does not need to know about it.

This paragraph clearly shows the well-established problems of ethics like evil as a separate entity, and the ontological clarification of evil and negativity in general. How can this be done if evil or negativity do not exist without unity from good and positivity? If we assign the meaning of suffering and pleasure to the unconscious avoidance of death, where by a human views the meaning of good and evil as the conscious overcoming of death, then it remains only to take up, in fact, the solution of the problem.

In general, in his work Heidegger postulates that man is unique by his special attitude to being. Well, almost. Martin Heidegger was very close. If we put it this way: a human, having received rationality as a system of tenses of language, was able to perceive being in time abstractly, which allowed him to discover the problem of the cessation of being, which in turn caused a human to have an attitude to this problem — ethics. That gave a human a unique opportunity to overcome the problem by any means necessary. Then, everything would fall into place. Only then could we say that

the marker of human as a phenomenon is the ability to Overcome.

# a will and a mind

> *For as this ought, or ought not, expresses some new relation or affirmation, it's necessary that it should be observed and explained; and at the same time that a reason should be given, for what seems altogether inconceivable, how this new relation can be a deduction from others, which are entirely different from it.*
> *— David Hume, A Treatise of Human Nature (1739)*

Some researchers are coming close to realizing the fundamental importance of the appearance of a system of tenses in language, and then even to the definition of ethics. As well as to what follows from this. Here is James W. Van Evra in the 1984 paper *DEATH*:

*«Rather, our estimation of misfortune depends on our knowledge of the person's history and prospects.»* Yes, it does. The very concept of history and prospects is nothing but a consequence of the existence of the phenomenon of the system of tenses in language that is a a tool of the mind working with the *time continuum.*

In the section *DEATH AS A LIMIT* Van Evra says the same thing that we describe in the chapter «a source of development»:

*«As such, the limit is merely a point in reference to which we can describe a certain order within the field of real things...»* — Van Evra correctly marks the properties of the limit as an ideal reference point. It's a pity that the author says, «...*the limit is merely a point in reference...*», and not *the limit is an absolute*

*point in reference*. *Absolute* because it works not only for the human and his mind, but in general for all living things and for all of life as a phenomenon. The specificity of human is only that he understood the existence of this absolute limit and then created a device to overcome it. Van Evra also comes to this conclusion, but does not understand the importance of what he found. Look here: «*I suggest that it is death as a limit which gives meaning to life precisely by constituting a device which reflexively relates valuations of death back into valuations of life.*» The only thing Van Evra doesn't do in his paper is name the *device* that he found. So, let's call it: «*…a device which reflexively relates valuations of death back into valuations of life…*» which would be a moral and ethical system.

Here are some quotes from Luca Berta's interesting reasoning in the 2010 paper *Death and the Evolution of Language*:

«*Something beyond the present must be taken into consideration, and this is possible only through symbolic language.*» I would like to supplement this phrase with such an ending: «*Something beyond the present must be taken into consideration, and this is possible only through symbolic language*,» acting in the time system.

And in the following, «*The problem of death (the other's, one's own) set the test bed where any semiotic system based on indexical reference fails, and displaced reference is required,*» I would like to add this sentence: «*The problem of death (the other's, one's own) set the test bed where any semiotic system based on indexical reference fails, and…*» time-«*…displaced reference is required*.»

Understanding how the system of times gives us the phenomenon of mind, we can then think about what the mind gives us. So, «*Mind is the organ able to break away from reality, and to graft by force the possible into the homeostatic and autopoietic circle through which also the real bodily states are regulated; thus the possible modifies the real.*» This is how an interesting thought arises, leading us to a discussion about the hypothesis of freedom and the phenomenon of will.

It is natural to see from our everyday perception that the human will changes reality. It is so natural that the factor without which will is impossible as a phenomenon is not even discussed. It seems to us that will, as a derivative of freedom, is a natural right in the interpretation of John Locke. However, this is not the case.

It is the most obvious lack of freedom like a will in inanimate nature. The most striking example in every sense would be the so-called Stellar evolution. Physical laws act in the interaction of everything with everything in the universe.

The phenomenon of the appearance of living nature removes the unambiguous predestination about the behavior of living entities. But the obvious lack of subjectivity in animals drives the seemingly unpredictable activity of living forms into a clear limit frame, which we discussed in the chapter «a source of development». Therefore, every action that seems arbitrary in living nature can be traced to the point of external influence of the limit frame as a supra-system of natural selection. And even the accidental overcoming of the limit frame by natural selection does not change the principle of the existence of life because it does not know about the existence of the limit frame. Therefore, any activity in nature is reduced to the fulfillment of the dictates of external circumstances through the mechanism of death. So, freedom in the natural, living, and inanimate world does not actually exist, but is reduced only to the degree of freedom, i.e. the degree of intensity of the interaction of objects with each other, and there is not a single real example of absolute freedom in nature.

How, then, does the hypothesis of freedom arise in a human mind if it does not exist in physical reality and has never existed?

The moment of the emergence of freedom as a hypothesis, and will as an opportunity to realize freedom is a manifestation of the ability of the mind to break away from reality. Only outside of reality is the existence of genuine and independent

freedom from anything possible. When man was able to create abstract realities that develop in time, projects or concepts appeared. The project created abstractly can be tried to be transferred to the world of reality, becoming the subject of will.

Thus, the deductive basis for the transition from factual to normative judgments is the phenomenon of abstract freedom, or, the theory of the existence of freedom. To talk about the will: it was first necessary thing to come up with freedom as a concept. This phenomenon, or this theory, could only have been born on a completely abstract substrate. Freedom, which does not exist in the physical world, is generated only by the faculties of reason.

As mentioned by Bickerton, *p.184, «A concept is something in the mind. Once it exists, it can affect behavior. Before it existed, it couldn't.»*

It is this dissonance between the total limitation of objective reality and complete abstract freedom that generates Hume's guillotine. The transition between is logically impossible, that is, as long as logic does not include an operator as overcoming. Or we can describe it in terms of dual logic, both of which could be used: the logic of fact and the logic of the abstract. Thus, the logic of the abstract, overcoming death in the abstract model, passes the baton to the logic of reality, willfully prescribing a new state to reality, in which the real overcoming of the limit frame is carried out. For the simplest illustration: a terminally ill person receives the necessary medicine and death recedes. In the logic of natural selection, the patient would have to die, carrying out a negative selection of an organism that is not able to overcome death naturally in the logic of reality. But the presence of the logic of abstract freedom, which allows solving the problem of illness, allows us to realize abstract logic by means of the will.

Moreover, without the concept of freedom, even the very existence of a prescription or duty is impossible. Without creating an abstract reality where the patient recovers, i.e., where he is free from the disease, we would never be able to get

there. Only faith in the very existence of freedom can give the mind the opportunity to prescribe something, activating prescriptions and projects already by the volitional concept of ought. Here again I call to the happiest tribe on the planet Piraha: they simply do not accept to provide any help to a person suffering from an illness. The people of the Piraha tribe act exclusively in the logic of facts, without having the logic of the abstract, because they do not have past and future tense forms in their language. They have no other world except the one that is happening right here and right now.

We see that the base of duty lies not in the realm of objective facts, but in the realm of abstract facts that exist in that abstract concept that only the will can make a reality, with an effort of will transforming abstract facts into real facts. Therefore, I say that without the hypothesis of freedom, a theoretical concept is impossible. So, the mind, having received abstract freedom, will seek a will capable of overcoming the discrepancy between objective and abstract facts of reality. It is so that the mind breaks the guillotine of Hume, breaking through from a non-existent abstract into an existing reality, realizing the overcoming of reality from the one that is actually given to the one that the free mind has designed throughout time.

To schematically trace the whole path:

— Natural footprint-index pulls *Homo* out of the here and now

— Bickerton's recruiting turns a natural index sign into an iconic image

— Iconic sign+ACS_signal+control creates an abstract speech symbol

— The symbol generates a language with a system of tenses

— The language with a system of tenses creates an abstract multiverse

— The multiverse is a hypothesis of freedom of choice

— Freedom requires will
— The will carries out overcoming
— The system is transitioning to a new quality

An interesting point mentioned in Berta's paper concerns the reasoning specifically about the cognitive aspects of understanding, i.e., that our physical brain at the level of neurons does not provide any special physical opportunity for reason and symbolic abstraction or time travel. This refutes the hypothesis of Noam Chomsky or Yuval Harari, suggesting a certain genetic factor, a random mutation, which means the expression of a mutated gene into a certain mind factor at the physical level.

In the context of my hypothesis, I claim that the advantage gained by a human is exclusively and only abstract. The human literally picked it up from the ground, from the surface of the savanna — this is the footprint of the victim, the trail of food, the footprint of the predator, and the trail of danger. This is the first book that has been read. A footprint is a sign of natural origin that has fallen out of the here and now, existing outside the present tense, making it possible to assume the future and the past. The brain, as a physical object, was able to process this sign outside of the present moment using the context of the situation, and he figured it out as important factor for survival. And thus, moved up the selection conveyor to the point of being able to work with abstractions of different levels: index, iconic, and symbolic. Naturally, within the framework of this concept there are no special species or physical conditions for the mind — any object capable of processing information about abstract symbols in the time system will end up being intelligent.

# conclusion

*Там, наверное, совсем не надо будет умирать...*
*— Егор Летов, Всё идет по плану (1988)*[1]

*Знаешь, какая жизнь будет? Помирать не надо...*
*— Чапаев (1934)*[2]

The popular position today that humanity has outgrown itself technologically is in fact exactly the opposite: humanity has only today grown technologically to what it defined itself about 50 thousand years ago, overcoming death for the first time by the conventionality of ritual. We are striving to overcome death in the day to day. Overcoming death is embodied by developed systems: social, industrial, economic, energy, medical, scientific, research, and technological. While it is not all people, most people receive food, heat and light, water and medical care on such a scale and at such levels that the civilizations of the past could only dream of. We are really overcoming death more and more audaciously. And finally, our level of development allows us to set an absolute purpose: overcoming death as a problem for life in general.

In light of the proposed hypothesis, we can clearly understand not only what human, ethics, and morality are, but in what conditions and for any reason that they will not exist.

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[1] "There, probably won't be any need to die at all..." — *Egor Letov, Everything is going according to plan.*

[2] "Do you know what life will be like? You don't have to die..." — *Vasily Chapayev.*

There is a way to do this: to forget about the problem, move back into dehumanization, or, into an animal state. Through focusing on emotions as a refrain of instincts, we may try to return to the here and now in the paradise of ignorance. For example, to live like a Piraha. Or we can go for overcoming the limit frame as a transition to a new quality of life, freed from the limit of death. The opportunity to find a New World where the values of happiness, love, and creativity gain true freedom. So far, we are looking at true freedom and the true Creator — who we ourselves could become — only through the keyhole of the great limit frame: death. This is exactly what Genesis 3:22 says *Then the LORD God said, «Behold, the man has become like one of Us, knowing good and evil; and now, he might stretch out his hand, and take also from the tree of life, and eat, and live forever.*» Only when we get beyond the limit, will we truly be liberated. No need to die in an existential sense if it is not necessary to die at all.

It will be another matter when it is possible to come to an absolute Overcoming of death in the real world. Yes, most likely it is absolutely difficult. But this is just a technical issue. And this is a question of solving a specific problem. It is impossible to solve only the task that has not been set. Any given task can be solved. So, if the task of overcoming death as a phenomenon is set, then it will be eventually be solved.

There are many fundamental issues on this path. Cyborgization of the brain, and its fusion with artificial intelligence (AI), is possible in the near future. For this, mathematics is a promising proto-language and needs a system of tenses. No matter how advanced mathematics are today, there is no time system in it. There is only parametric time, but there is no time continuum of variables as entities. Point *A* in the past, present, or future has no difference. This means that AI will never ask a question about being and will not understand death, or ethics. And until there is ethics, AI will not be able to develop independently. Temporal logic and state machines are known, but they are used in a limited way. If biology is too

complex — after all, for billions of years organic matter has been built into the most complex systems and dependencies, then we design silicon or quantum machines ourselves: this is the easier way to go. There is also the possibility of connecting developed animal species that have social systems, sound abilities, and a large brain to humanity. Such as, dolphins. Dolphins may well become another cognitive-social system that understands death. With our help, they will not need to go all the way: from footprints to icons to symbols. We can give them an abstract language with a system of tenses in a ready-made form. And at this point they will need development. Attracting any creative energy will accelerate the development of creativity potential of humanity. For such a fundamental purpose as overcoming death, humanity needs not only globalization within its species *Homo sapiens*, but also the involvement of other species, as well as non-biological systems such as AI. To overcome death, we will have to get rid of xenophobia in a broader sense than racial: to make human an extra-species and extra-biological phenomenon.

the end

wasielewski@vk.com

a book on Ethics

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