Roots of the Contemporary Epistemological Model
in Mesopotamian Mythology

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Abstract- This paper asserts that the mental model of a social system is shaped by the conditions at the time when the society gains its identity and unity, and its basic traits are maintained to a great extent through the subsequent social evolution. Based on this assumption, some basic traits of the epistemological system of today's civilisation are expected to have their origins in the mental model of early agricultural societies. Various Mesopotamian myths are analysed to identify the roots of some fundamental epistemological problems of the contemporary society.

Résumé - Ce texte éxplique que le modèle mental d'un système social est formé par les conditions qui prévalent au moment où la société acquiert son identité et son unité, et ses traits fondamentaux sont maintenus à une grande échelle par l'évolution sociale subséquente. D'après cette supposition, quelques traits fondamentaux du système épistémologique de la civilisation contemporaine sont censés avoir leurs origines dans le modèle mental des sociétés agricoles des temps anciens. Divers mythes mésopotamiens sont analysés pour identifier les racines de quelques problèmes épistémologiques fondamentaux de la société contemporaine.

I. Introduction

Any system capable of maintaining itself can be said to possess some form of a 'model' about its context and itself. In relatively simple systems this 'model' is indistinguishable from the underlying physical, chemical etc. principles. In complex animate systems, however, the 'model' gains the character of an increasingly symbolic representation which opens up new degrees of freedom and seems to find its peak in human beings in the form of 'thought'.

Complex animate systems with high agency construct model-based strategies to achieve their goals. Yet even the goals are in some sense model-dependent since they ultimately serve the purpose of maintaining the 'self' as defined in the 'model'. Changes in the environment, which may even have been induced by the actions of the system itself, require modifications in the 'model'. The circular dynamics between the "model" and the context may or may not lead to an equilibrium, depending on the balance between the system's level of agency and its ability to adapt its 'model'.

However, the initial form of the 'model' at the time of emergence of the system constitutes an important restriction on its adaptability. This initial form obviously carries the imprints of external conditions at that time, and its basic framework cannot be altered much during subsequent adaptations, just like biological evolution –though introducing huge innovations- cannot alter the fundamental body architecture specific to a phylum.

The application of this idea to human social systems constitutes one of the central assertions of this paper: *the mental model of a human society is shaped by the conditions at the time when the society gains its identity and unity, and its basic traits are maintained to a great extent through the subsequent social evolution.*

Human species has started its existence in a hunter-gatherer mode of survival and remained so until the end of the last Ice Age (around 11,000 B.C.). In such a mode, which depends strongly on natural dynamics, human societies need a very good model about the environment. Indeed, studies on the few remnant societies, which have maintained this life-style, reveal that all their members have an extensive knowledge about their habitat[1]. Such societies typically have an animalistic/shamanistic belief system which reveres the natural order as the highest divinity. The self-model of such social systems can be formulated as *those who try to learn and harmonise with the divine order*. An idealised memory of this trustful existence as part of the whole has been preserved in the Sumerian myth "Adapa", the story of the wise and pious priest:

> "…
> *clever, extra-wise, he was one of the Anunnaki,*
> *holy, pure of hands, the pasisu-priest*
> *who always tends the rites.*
> *He does the baking with the bakers of Eridu,*
> *he does the food and water of Eridu every day,*
> *sets up the offerings table with his pure hands,*
> *…*
> *At the holy quay Kar-Usakar he embarked in a sailing boat*
> *and **without a rudder** his boat would drift,*
> ***without a steering-pole** he would take his boat out*
> *into the broad sea.*" [2]

Yet one day, when the South Wind blows strong and sinks his boat, Adapa gets angry and brakes the wing of the wind:

> "*South Wind...*
> *send him to live in the fishes home.*
> > '*South wind, though you send your brothers against me,*
> > *however many they are,*
> > *I shall still break your wing!*'
> *No sooner had he uttered these words*
> *than South Wind's wing was broken;*
> *for seven days South Wind did not blow towards the land.*" [2]

According to the myth, as a consequence of his furious act, Adapa loses the chance of becoming immortal. In order to shed some light on the symbolism of the extremely compact story of Adapa's drastic transformation, we need to consider the initial stages of sociological evolution.

II. Desecration of the Natural Order

Under the pressure of changing environmental conditions and confrontations with other cultures, most human societies have eventually changed their mode of survival into what can be generally termed as 'food production'. With a very rough categorisation, food production has lead to two distinct forms: half-mobile life style of animal breeding pastoral nomads and settled life style of agriculturists. As far as the level of agency and the associated belief system are concerned, the settled life style of agriculturists marks a categorical departure from the earlier way of existence, deserving the name 'Agricultural Revolution', while the transition to pastoral

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[1] DIAMOND Jared (1998), Guns, Germs and Steel, Vintage (London).
[2] DALLEY Stephanie (1989), Myths from Mesopotamia: Gilgamesh, the Flood, and Others, pp. 182-188, Oxford University Press (New York).

nomadism (a mode of survival that still requires a great deal of harmony with the nature) can be considered as a smoother one.

If environmental conditions are not suitable for the cultivation of crops, or as it happened in Mesopatamia, if suitable conditions change after human colonies start a settled, cultivation-based life, a lot of human intervention may be necessary to create the sufficient conditions for maintaining this life style (in Mesopotamia these efforts included construction and control of a complicated canal system). Thus, the settled life of an agricultural society is deeply marked by domestication, which is used here in a general sense to denote the *asymmetric relationship* to the environment; a framework, within which human societies manipulate the natural dynamics of plants, animals and the rest of the environment, in a way that suits their own benefits. Though the immediate environmental impact of such human intervention has always been huge (even at that time), the way it has shaped the mentality of the emerging societies had much further reaching (up to our day) consequences. Applying the central assertion stated in the first section to human societies, which have gained their identity and unity at the time of the Agricultural Revolution, their mental model is expected to carry strong imprints of the paradigm of domestication.

At that point it is worth considering a myth that seems to describe the transition to domestication, as it may have been perceived in a hunter-gatherer or pastoralist state of mind:

Dumuzi belongs to a very ancient circle of deities. One of the Sumerian myths related to Dumuzi tells the story of how he, as the husband of goddess Inanna, came to spend half of the year in the netherworld and the other half on earth, providing an aetiology for the yearly cycle of the vegetation. The yearly reincarnating consort of the goddess has also been worshipped in Babylon under the name Tammuz, in Phoenicia and Greece under the name Adonis, and in Phrygia under the name Attis, as the god of vegetation and fertility, responsible for crops and regulating the seasons, as well as the god of the underworld. Yet Dumuzi is also known as the 'lord of the shepherds'. In one of the myths he represents the interests of pastoralists against the god of irrigation and cultivation.[3]

Like many ancient deities, Dumuzi has undergone many transformations during cultural evolution. As a consequence, myths related to him typically contain an anachronistic variety of components rendering interpretations quite difficult. Here I will focus on a particular myth, "Dumuzi's Dream", which exhibits a somewhat different character than other Dumuzi myths.

The story tells how Dumuzi's nightmare, which is interpreted as a catastrophic sign by his wise sister Geshtinanna, comes true. Evil men approach on a river barge with some tools in their hands: "*wood to bind the hands*" and "*wood to bind the neck*". Upon her sister's advise Dumuzi runs away and hides his head in the short grass, then in the tall grass and finally seeks refuge in the ditches of a nearby desert. Dumuzi is chased by the men (in later parts of the story they are replaced by demons) and caught in the desert.

> "*The men surrounded him and drained the standing waters.*
> *They twisted a cord for him, they knotted a net for him.*
> *They wove a reed howser for him, they cut sticks for him.*
> *The one in front of him threw missiles at him,*
> *The one behind him […]*
> *His hands were bound in handcuffs,*

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[3] BLACK Jeremy and Anthony GREEN (1992), Gods, Demons and Symbols of Ancient Mesopotamia, The British Museum Press (London).

> *His arms were bound in fetters.*" [4]

In his desperation Dumuzi begs his brother-in-law (Inanna's brother), the sun god Utu, to transform his hands and feet into snakes (in some translations: into gazelle hands and feet) and thus he manages to escape. The same scenario is repeated every time he is captured. Yet when they find out his last hiding place, Geshtinanna's holy sheepfold, they burn and rob it. The last scene shows Dumuzi's nightmare coming true:

> "*The churns lay (on their side), no milk was poured,*
> *The drinking cups lay (on their side), Dumuzi was dead,*
> *the sheepfold was made into the wind.*" [4]

The motif of mistreated and killed hero as an allegoric description of the cultivation and processing of a plant for food or beverage production is not a rarity in the folklore. One of the longest surviving examples is known in Britain: the ballad of "John Barleycorn", the personification of the barley grain. The life-cycle of the barley grain in the process of beer brewing is described as a series of mistreatments and torturing and subsequent murdering of John Barleycorn. Yet he resurrects every year in his full strength.[5]

Sir James Frazer recognised in this ballad the ancient belief in a vegetation spirit killed for the sake of fertility of the crops, a symbolism that can be traced back to the yearly dying and reincarnating vegetation gods of the ancient world. At that point, it is worth noting that the periodic death and resurrection of a vegetation god is governed by seasonal dynamics of the nature, while the fate of John Barleycorn (and the like) is governed by a man-made cycle of cultivated plants (although this has to overlap with the seasonal cycle – at least unless a level of technology is reached capable of creating artificial environmental conditions). Agricultural societies seem to have modified the aetiological myth related to the yearly vegetation dynamics and applied it to their own production cycle.

Yet "Dumuzi's Dream" differs from other ancient vegetation god myths (including other Sumerian myths about Dumuzi) also in another point: it contains no indication about the god's possible resurrection. Both the dream and the sequence of events seem to refer to an ultimate death. One may ask what an ultimate death can mean for a being, the mode of existence of which is defined as perpetual dying and resurrecting. A clue for an answer can be found in Geshtinanna's interpretation of Dumuzi's dream:

> "*(Your) holy drinking cup being torn from the peg where it hung (is)*
> *you falling off the lap of the mother who bore you.*" [4]

In the light of these verses, the myth seems to account for how agriculturists have torn the crops from 'mother nature's lap by gathering the grains before they shoot roots (note how Dumuzi escapes several times when the sun god turns his hands and feet into snakes). Capturing the grain before it restarts its natural life-cycle is the first step towards men's dominion over its reproduction. The narrative tone in "Dumuzi's Dream" is quite different than that in "John Barleycorn". As opposed to the humorous style of the ballad, which presents the violent human intervention in the natural dynamics of the plant as a routine act, "Dumuzi's Dream" is full of mourning over a

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[4] BLACK J.A., CUNNINGHAM G., FLÜCKIGER-HAWKER E, ROBSON E., and ZOLYOMI G., (1998-), Dumuzi's Dream, *The Electronic Text Corpus of Sumerian Literature* (http://www-etcsl.orient.ox.ac.uk/) (Oxford).

[5] PALMER Rob (ed.) (1986), English Country Songbook, p. 192-193, Omnibus Press (Musselburgh, Scotland).

heavy and irreversible loss. It is quite probable that "Dumuzi's Dream" is an aetiological myth about the emergence of domestication (of plants) or more probably about the arrival of some agriculturists, presented from the perspective of a hunter-gatherer or pastoralist society.

If this interpretation is correct, "Dumuzi's Dream" marks the beginning of a path, which turns the eternal rejuvenation of the vegetation into the production cycle of cultivated plants. It is the path leading to man's dominion over the reproduction, up to today's genetic technology, which produces plants that cannot reproduce more than once such that seeds with patented DNAs have to be acquired to start a new reproduction cycle.

In societies, which owe their existence to domestication, the 'self' seems to be modelled as something that imposes itself upon others. Such a model of the self is indeed enough to destroy the delicate balance between model-based agency and adaptation of the mental model, in favour of the former. The mental model of such societies has the character of a 'self-fulfilling prophesy', as opposed to the epistemic mode of hunter-gatherer and pastoralist societies, which is based on learning the natural order.

Another important point is the positive feedback inherent to the domestication-based mental model. An order, which is a forceful realisation of a self-centred 'model' rather than an equilibrium emerging from the mutual adaptation of the 'model' and environmental conditions, creates a destabilisation, which, in turn, asks for the expansion of the domain of control. On the other hand, parallel to the expansion of the domain of control, the 'self' (ie. the social system), as a protection against self-created destabilisation, needs to be isolated from the rest, turning into an *external controller*. This alienation to the natural dynamics, such departure from the whole, may be the root of another trait of the modern epistemological system: the assumption about the *external observer*.

In this state of mind there is no room for a divinity defined in terms of the natural order. Instead, divinity is transposed to the celestial realm, representing the unimpeachable mental model, the plan of a world yet to be constructed by man. Here we already recognise the foundations of the *dualistic world-view* handed down to our day.

With the emergence of societies having such a mental model, the surplus values produced in the expanding domain of control were dissipated in the formation of a new organisational structure:

In Near East, following the transition to settled agricultural life style around 8,500-8,000 B.C., the path of increasing complexity lead to the development of hieratic city states (from 4,000 B.C. onwards), with a ziggurat at the centre -an axis mundi connecting the city to the sky.

The new organisational structure promoted the development of complex division of labour, urban industries, bureaucracy and sophisticated control systems, eventually allowing the emergence of even higher organisational structures of states and empires: Sumerian Early Dynasties, the Akkadian Empire, Sumerian-Akkadian Ur Empire, Old Babylonian Empire, New Babylonian and New Assurian Empires…

While the social system evolved towards a nested hierarchy of 'external controllers', human virtues shifted from justice and harmony towards power: first physical and then mental: the power of man as a system-maker.

It is not a coincidence that societies, which have gained their identity and unity at the stage of Agricultural Revolution, have been carrying the 'banner of progress' –a

steady drift from equilibrium, up to a catastrophic point. On the other hand, in societies, which have gained their identity and unity at an earlier stage, the transition to agriculture has not resulted with such a drift.

III. Desecration Justified

An emerging social system with a new identity needs a new 'model', which not only accounts for the present state of affairs but also for the past, in a way to justify the necessity of the new system. The solution at that point is a very common one. Almost all myths of origin of settled and organised societies start with an initial lack of order, a state of complete chaos, typically represented as a dragon or a beast, that needs to be slaughtered and used for the construction of an ordered system.

In various versions of the epic of Gilgamesh, Huwawa, the guardian of the Cedar Forest serves this purpose. The half-god hero Gilgamesh decides to make a campaign against him. Strangely enough, no argument is given explaining why he deserves to be killed or what kind of a threat he constitutes for Gilgamesh. Instead, Gilgamesh's motivation seems to be based on a longing for fame and glory. In the earliest version of the epic, the Sumerian poem "Bilgames [6] and Huwawa", Gilgamesh does not seem to have initially intended his death. And when, in the sequence of events he is killed by Gilgamesh's companion Enkidu, gods of heaven blame the two:

> *"Why did you act in this way?*
> *Was it commanded that his name should be wiped from the earth?*
> *He should have sat before you!*
> *He should have eaten the bread that you eat,*
> *and should have drunk the water that you drink!*
> *He should have been honoured [by] you!"* [7]

Huwawa and his forest may represent a more ancient social order in harmony with the natural order, which was still remembered at Sumerian times as something divine. Its destruction is presented as a collateral damage rather than a deliberated result. Even in the latest version (Standart Babylonian Version) of the epic Huwawa is still recognised as the guardian of the Cedar Mountain appointed by god Enlil. But there he is already hated by Shamash, the sun god, patron of the rising Babylon. After Gilgamesh's victory over Huwawa, a mature tree cut from Huwawa's mountain –the symbol of his broken power- is carried on a raft on Euphrates to make a temple door in the holy city of Nippur. Divinity cannot be created but only transferred.

In the Babylonian creation myth "Enuma Elish" the destruction of an older system and usage of its parts for the construction of a new order is presented in a much fiercer way. Here, after a huge mobilisation and a bloody battle, Marduk, the young and aggressive god of Babylon, slaughters the goddess Tiamat, who is associated with the initial chaos, and uses parts of her corpse to construct the universe:

> *"He divided the monstrous shape and created marvels (from it).*
> *He sliced her in half like a fish for drying:*
> *Half of her he put up to roof the sky,*
> *…*
> *He placed her head, heaped up [   ]*

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[6] In Sumerian texts the Akkadian version of the name Gilgamesh appears as Bilgames. To avoid confusion the hero will be referred to as Gilgamesh throughout this paper, except for quotations.

[7] BLACK J.A., CUNNINGHAM G., FLUCKIGER-HAWKER E, ROBSON E., and ZOLYOMI G., (1998-), Bilgamesh and Huwawa, *The Electronic Text Corpus of Sumerian Literature* (http://www-etcsl.orient.ox.ac.uk/) (Oxford).

Opened up springs: water gushed out.
He opened the Euphrates and the Tigris from her eyes,
Closed her nostrils, [   ]
He piled up clear-cut mountains from her udder,
Bored waterholes to drain off the catchwater.
He laid her tail across, tied it fast as the cosmic bond,
…" [8]

At the time of composition of the Babylonian creation myth "Enuma Elish", the new order was already well-established. Hence the destruction of the old system is presented as a well-deserved end.

Although both epics have the common point that an ancient system is decomposed down to 'building blocks' useful for the creation of the new order, "Enuma Elish" has a much more symbolic character that allows an epistemological interpretation:

The decomposition of Tiamat into building blocks can be regarded as the denial of the systemic integrity of the natural cosmic order. This represents the loss of a holistic understanding of the cosmic order, a precursor of the *reductionist* trait of the epistemological system that stretches down to our day. It is '*divide et impera*' at epistemological level. Universe reduced to decontextualised building blocks, there is free space now for the construction of a self-referential epistemology, not meant to model οντοσ but to serve as a plan for an οντοσ-to-be.

V. Man-Made Order Asking for Man-Made Immortality

A self-referential epistemology is open to the dangers of radical constructivism. There is no need for some external reality. Or, in a softer version, the external reality can be regarded as a bunch of things and it is man, who has the power and freedom to put them together as a system and assign them meaning.

However, what looks like "man's freedom to create" -put in the grandiose style of the modern era- is accompanied by a rather undesirable problem, one that seems to emerge the moment man ceases to identify himself as part of a cosmic order: the fear of death.

The search for immortality constitutes the central topic of the Epic of Gilgamesh. The Sumerian poem "Bilgames and Huwawa", one of the five early myths related to Gilgamesh, starts with an explicit statement of the problem:

"*The lord to the Living One's Mountain did turn his mind,*
the lord Bilgames to the Living One's Mountain did turn his mind,
he called to his servant Enkidu:

'O Enkidu, since no man can escape life's end,
I will enter the mountain and set up my name.
Where names are set up, I will set up my name,
Where names are not yet set up, I will set up gods' names.' " [9]

And later, when Gilgamesh has to justify his intended action to the sun god, he gives a more detailed explanation:

"… *'In my city a man dies, and the heart is stricken,*
a man perishes, and the heart feels pain.
I raised my head on the rampart,
my gaze fell on a corpse drifting down the river, afloat on the water:
I too shall become like that, just so shall I be!

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[8] Dalley, Stephanie (1989). Myths from Mesopotamia: Gilgamesh, the Flood, and Others, pp. 228-277, Oxford University Press (New York).
[9] George, Andrew (2000). The Epic of Gilgamesh, Penguin Books (London).

> *No man can stretch to the sky, no matter how tall,*
> *No man can compass a mountain, no matter how broad!*
> *Since no man can escape life's end,*
> *I will enter the mountain and set up my name....' "*

Gilgamesh goes to the mountain and captures Huwawa. After Gilgamesh's companion Enkidu, provoked by Huwawa's words, kills him, they are blamed for this deed. But the story seems to end with reconciliation after god Enlil rightfully distributes the booty, Huwawa's auras (radience or some kind of power), over the land.

The much later Standard Babylonian Version of the "Epic of Gilgamesh", the 12-tablet long colossal work of –apparently- a single author (whose identity is unknown to the contemporary world), consists of a very conscious ideological selection and composition of the older Sumerian material to justify the Babylonian system. In this version Gilgamesh's fear of death emerges after the death of his companion. The epic narrates Gilgamesh's fruitless attempts in search of immortality and ends with a praise of the city Uruk, the monumental work of man as a system-maker. The hope seems to be shifted from man's immortality to the immortality of his work: civilisation that will be constructed by establishing more and more control over the whole universe.

Due to limitation of space this younger and much more complex version of the myth will be left out of the scope of this paper. But the earlier Sumerian version asks for a deeper analysis:

As opposed to the man-made order isolated within the walls of Uruk, there is a working system 'out there', beyond man's control, a system of life and death. Is Huwawa an arbitrary target for Gilgamesh to gain an immortal name? There seems to be a deeper symbolism in the coining of the title 'the Living One' [10]. Huwawa, as the guardian of the sacred mountain and its trees, is part of the eternal natural order. In that respect, his title, indeed, represents immortality. After being captured deceitfully, Huwawa begs Gilgamesh to set him free and Gilgamesh is about to do so. But Enkidu warns Gilgamesh and eventually kills Huwawa, who was meant to live and be respected (as the gods put it when blaming the furious act). Enkidu's act is reminiscent of Adapa's breaking the wing of the South Wind.

Now that 'the Living One' is dead, the chance to gain the title seems to be lost. Yet even if Gilgamesh had set him free, could he possibly replace Huwawa's name by his own and gain the title 'the Living One' by simply fighting and defeating him? Gilgamesh, with his typical domestication-based mentality and in his role as the ruler of a city separated from the nature by the city walls, could not possibly be part of the natural order and deserve this title.

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[10] The translation of the first lines of the poem is quite controversial. The translation as '*the Living One's Mountain*' is due to Andrew George, who has used the literal meanings of the words, as he has stated in a personal communication. If one misses the point that Gilgamesh initially does not intend Huwawa's death but only wants to defeat him, the endeavour to kill 'the Living One' in order to gain some kind of immortality may appear as a paradox. Many scholars seem to have missed exactly this point. Thus they have tried to come up with different interpretations like "*Lord Bilgames decided to set off for the mountain where the man (meant: Huwawa) lives*". In spite of his translation as "*the Living One's Mountain*", also Andrew George seems to have missed the point about Huwawa's unintended killing. Thus, in order to avoid the paradox, he tends to identify 'the Living One' with Utnapishtim, the survivor of the Great Flood (an archetypic Noah), whom Gilgamesh visits in search of immortality, as narrated in a much later Akkadian version of the Epic of Gilgamesh. Yet in the Sumerian myths there is no mention of this character. The analysis of the text provides evidence enough to identify 'the Living One' as Huwawa.

His campaign slogan "*Where names are set up, I will set up my name / Where names are not yet set up, I will set up gods' names.*" exhibits a striking resemblance to the words of the leading cybernetician John von Neumann, who is extremely representative for the contemporary control-oriented world-view:

> "*All stable processes we shall predict.*
> *All unstable processes we shall control.*"

Both represent a mental model, within which the 'self' is defined as *the one, who imposes his model onto οντοσ*, either by force or by power of intelligence. Furthermore, there seems to be a clear correlation, an inseparable causal link, between the control-oriented mentality and the search for immortality. It is more than a coincidence that today cybernetics is the discipline, which deals most with the issue of immortality (in that respect, genetic engineering with its fashionable anti-aging projects can be considered as a daring application area of cybernetics). Indeed, there is a whole school of computer scientists, who make futuristic projections involving some kind of 'cybernetic immortality'. The causal link between the paradigm of control and the search for immortality seems to be a circular one: while people try to escape death by establishing more control over natural dynamics, increased control not only destabilises the natural order up to a catastrophic point but also alienates man to the ontic unity and isolates him in an epistemic solitude, making him prone to the fear of death.

VI. Conclusion

In view of the mythological evidence for the ancient roots of modern reductionist, materialist and control-oriented world-view, civilisation's claim of 'progress' seems to be of purely technological nature, while man's identity as defined in his epistemological model is still the same as 10,000 years ago: *the one, who imposes his model onto οντοσ* -an unfortunate stagnation.

But are we supposed to condemn control and refrain from all blessings of technology? Can we propose Adapa's initial state, his utopian mode of total surrender, as a viable solution?

Between Adapa's utopian initial state and his furious final state, where he tries to punish powers of nature when they do not suit his plans, there must be a mid-way solution: that of a normal helmsman (κυβερνητησ), who steers his boat through unpredictable waters. Neither in total surrender, nor in complete isolation, but in a state of partial autonomy - like any natural system. A good helmsman, embedded in the dynamics of nature, controls his own boat, while trying to steadily improve his model about the sea and to find intelligent solutions in face of the unpredictable, and eventually changes his route.

This, however, requires a task, which is quite hard in the context of a control-oriented culture: a shift of the self-model towards an identity as *a part of the whole ready to learn* –learn from past errors-, ready to open the stabilising negative feedback loop of experience.

Only then can science and technology cease to be a thread for mankind and the whole nature. Only then can they serve the goal of seeking an equilibrium, a dynamic steady-state, where the mental model can be improved rather than accumulating material goods. Only then can cybernetics adopt the skills of a real κυβερνητησ.