



# WHATEVER HAPPENED TO HUMAN NATURE?

## BETWEEN DIGIT-DIRECTED PERCEPTION AND THE REDUCTIONIST INTERPRETATION OF GENETIC HOMOLOGY

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Humans are living beings of extraordinary complexity. It is clear that we have our own particular nature –as do all animal species– but the fact that such definitions of our nature do not suffice seems undeniable. There is something in man that drives us to seek a non comparable uniqueness which sets us apart from each and every living species around us, a matter in which language plays a crucial role.

In Plato's allegory, not only do the inhabitants of the cave perceive insignificant images, but they also perceive them only partially as only two senses (sight and hearing) seem active. Plato could never have guessed that the representation of sensory perception would go beyond sound and visual images. And indeed the illusion-creating paraphernalia was limited to these for a long time. One could even speculate that reducing the range of senses to sight and hearing is one of the key elements demonstrating the perceptual and cognitive shortcomings of Plato's prisoners. We could ask ourselves whether the cave would be less cave-like if, as well as the vague images in the form of shadows and echoes, there were the equivalent sensations of smell, touch and taste. If we think that perception conveyed merely by digits is characteristic of a mechanical entity, like a sophisticated robot, the generalization of this kind of perception to the five senses has lead some people to draw analogies between human nature and artificial entities.

All models drawing analogies between the way humans and machines work clash against common sense, which tends to spontaneously rebel against such reductionism (just as reducing the human spirit to purely a state of animation is rejected). But nowadays they come up against an indisputable scientific fact,

«WE HAVE OUR OWN NATURE AS DO ALL ANIMAL SPECIES, THAT IS, EVERY COMMUNITY IN WHICH INDIVIDUALS ARE SUBJECT TO GENETIC EXCHANGE THROUGH VIABLE REPRODUCTION»

namely that we are animals and that the uniqueness of each animal is determined by the genome, in which the complexity of life is crystallized, devoid of analogy when it comes to complex machines. This uniqueness of life means no model of the human condition which lacks the vital reference is acceptable. And here I am compelled to allude to a current issue, because as I write this J. Craig Venter has just published an article in *Science* about a bacterium harbouring an artificial genome. As is well known, some newspapers heralded it as the «creation of life». Luckily, Venter himself did not at any time support this interpretation, stating merely that a synthetic cell had been obtained.

And some didn't hesitate to point out that it was not even a cell but rather a synthetic genome (what was synthesized was inserted into a bacterium of another species, whose reproductive activity was effectively controlled, replacing the original genetic material). If we also consider that to synthesize the genome of a unicellular being like a bacterium is not the same as synthesizing the genome of a multicellular organism and, above all, that the genome was copied from another bacterium that had previously been sequenced... then creating artificial life is not what this remarkable breakthrough has achieved.

On the left, Jesús Martínez Oliva. *Musée de l'homme exotique*, 2010. Variable measurements.





Certainly, mankind is not only a living being but, furthermore, a creature of extraordinary complexity. Thus, I would suggest that any discourse on human beings that over-emphasizes analogies with artificial beings (based, for instance, on the alleged intelligence of the latter) while ignoring the variable «life» must be regarded doubtfully. Without this implying reverence for the reductionist view, which confers to humans only species-specific «horizontal» differentiation, *i.e.*, that which enables us to avoid confusing the gorilla with the chimpanzee or the orangutan.

Of course, we have our own nature as do all animal species, *i.e.*, every community in which individuals are subject to genetic exchange through viable reproduction (assuming that this is not the case when the exchange takes place between individuals belonging to different species). It seems, however, unquestionable that such a definition of our nature is not enough. There is something in man that drives us to seek a non comparable uniqueness which sets us apart from each and every living species around us.

#### ■ CONTEMPORARY CRITICISM OF THE «TABULA RASA» CONCEPT OF HUMAN BEINGS

Let us imagine that the mind were, as they say, a sheet of blank paper, without any mark upon it, void of ideas. What has to happen for it to acquire them? How does it become that vast store of unlimited and intense activity that man has inscribed upon it with almost infinite variety? Where does the stuff comprising reason and knowledge come from? I'll answer this with a single word: experience.

JOHN LOCKE (1690), *An Essay Concerning Human Understanding*

This text by John Locke has served the American linguist and psychologist Steven Pinker as a springboard from which to launch a triple crusade against the theories designated by the expression *blank slate*, or *tabula rasa*, and characterized by the denial of human nature. In essence these theories state that mankind lacks any previous structure which in spirit can shape culture. And in this regard, Pinker cites the statement by Ortega and Gasset, according to which man has no nature but has history.

Humanity responds to a nature that is diversified in accordance with circumstances and which, through what geneticists call polymorphism, explains the irreducibility of the behaviour of one individual to another individual. Genetic research programs in which Steven Pinker and other contemporary thinkers are involved have, among other things, extended the



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In humans, the position of the larynx is lower than in other animals. This makes us prone to choking or even drowning while eating. However, even though this might seem like an evolutionary mistake, it enables us to articulate sounds and to develop one of our most distinctive features: language.

mapping of genes (such as FOXP2) found to be linked to the emergence of language. In fact this ambition is precisely what prevents Pinker from being considered a reductionist thinker. The Harvard professor is well aware that language has laws that transcend the demands of that from which it arises, laws that make it a sort of exception in the economics of life.

Is human language a mere instrument to convey information (which equates man with numerous animal species that employ sign codes)? We know that this is radically denied by Noam Chomsky, who, since 1966, has been claiming, with increasing scientific acuity, the Cartesian theory of innate ideas (which would constitute the semantic support of language and the mark of human irreducibility to the natural condition of immediacy, *i.e.*, that which is triggered in response to external factors alone and does not emerge from reasoning in the true sense<sup>1</sup>). But the issue goes back

<sup>1</sup> One should recall that in 1966 when Noam Chomsky's *Cartesian Linguistics* came out, the French linguist Emile Benveniste picked up on his 1952 article, which began with the following statements: «Applied to the animal world, the notion of language only is used due to terminology abusus. It is known that, so far, it has been impossible to establish that animals have, albeit in a rudimentary form, a mode of expression that shares the features and functions of human language [...]. The fundamental conditions of sensible language communication are found absent even in the world of higher animals.» (Benveniste, 1966).



to an idea that is founded both on what we call science and what we call philosophy, and I am referring to Aristotle

### ■ FROM «SAPIENS» TO «LOQUENS»: BASIS FOR CONTEMPORARY HUMANISM

Only the ways in which the unique relationship between human beings and their environment are defined, *i.e.* the notions of genus, species or individual, can take us outside this ambit of continuity with nature that characterizes animal life. Animals attribute particular traits to individuals, thus distinguishing among them; therefore animals have empirical knowledge (adapting to individual differences). Animals see but do not perceive *man*, *house* or *dog*, in terms of understanding the concept, the universal, which is forged by a mind gifted with the ability of matching an idea to a sign (the capacity for *eidenai*, the ability to understand or specify).

Perhaps this view, set forth in Aristotle's animalism at the beginning of his *Metaphysics*, is the most difficult to accept or even to understand. Well, how can one imagine that a being «distinguishes» without having an «idea»? Animals are in this situation and not even supposedly intelligent machines achieve as much.

Animals can distinguish between individuals who affect them positively or negatively. A condition that, without intercession by a universe of meaning, fashions that «primary consciousness», unconnected with elements like thinking (understood as reflection on representations) or language. By contrast, in humans (semantic mind) the linguistic realities soak their whole perception, to the point that in his *Topics*, Aristotle wrote this abysmal statement: «for the man who perceives, judges in a certain way».

A human being is a creature of reason to all intents and purposes and in all circumstances. This means that, even in the motives that are largely shared universally with animals, even in our need for individual and specific preservation, aspects have emerged that perturb these and which are dependent upon reason. All animals instinctively feel hunger for self-preservation, but perhaps no human hunger is the expression of that instinct alone. For just as we distinguish between the purely syntactic and the

*semantic* connection, we must distinguish between strictly biological affection and this same affection when it is mediated by concept or definition –influenced by semantic features–.

Machines have no feeling and, as their «mind» is limited to computing, they do not have thoughts strictly speaking. Animals lack concepts and, although they have feeling, they do not give them meaning, do not interpret them, do not judge them (we do it for them).

Humans, under all circumstances, interact with their environment through semantic and grammatical structures that are rooted in our biological uniqueness and that can, therefore, be considered innate. Innate in the trivial and indisputable sense that at birth we receive them in our genetic code; and we alone receive them. This has implications when considering what must be done with a newborn human being in terms of the *paideia* or educational process.

Educators are surprised by the fact that children can quickly start generating an unlimited number of semantically correct sentences they have not heard before and which, therefore, they have not been taught. This would be a mystery were it not for the radical difference in language between what Chomsky calls core or universal grammar, common to all languages, and peripheral grammar, particular to each language.

As we move from the peripheral to the core structure, all languages become more similar. Languages still retain differences, but these never reach infinity, since, by definition, *language* is a constitutive element of the core structure, *i.e.*, that which is common to all humans, differentiating us from all other primate relatives. There is a universal aspect of languages, surely resulting from biological order but not reducible to the structure of life, as this is irreducible to mere laws of physics.

### ■ EVOLUTION CONCURRING WITH LINGUISTIC DEMANDS

We share with other animals certain organs that have a well-defined biological function, such as teeth or throat, which have been shaped according to biophysiological demands and have evolved markedly in our adaptive capacity.



HUMAN NATURE

MONOGRAPH





Sometimes, however, the configuration and location of some organs cannot be explained with mere reference to biological adaptation. This has been pointed out repeatedly by Eric Lenneberg (1985): in some cases, organs do not evolve to facilitate functions such as breathing or eating food, but to facilitate linguistic articulation. Such changes in purpose can (and indeed do) give rise to radical changes that make certain human organs differ greatly from what is found among closely related animals such as chimpanzees: the larynx has been considered the paradigmatic example of this evolution, in other words the non-standard. The larynx is located in the neck between the hyoid bone (above) and the trachea (below). The larynx is an organ of phonation, but it is also part of the respiratory apparatus air flow system.

It is known that, during swallowing, when the food gets to the base of the tongue and posterior pharyngeal wall, several mechanisms prevent it from entering the nose or larynx. One such mechanism lies in the fact that there is a reflex whereby the larynx is then closed by the epiglottis. Failure of this mechanism would mean that bits of food might reach the trachea and the lungs instead of moving through the esophagus to the cardia, as they should. The larynx and vocal cords located there act as a kind of emergency trap door, which helps keep the airway clear.

However, to adequately fulfil its function in other animals (including chimpanzees and gorillas) the larynx is located in the upper throat, behind the tongue. This position helps to avoid, as we said, bits of food from entering the trachea, because as soon as they pass through the mouth they are caught. However, in humans the larynx is located lower down, which cannot stop any debris escaping from the mouth. So what is the consequence of this deviation? That man is amongst those animals at a higher risk of choking, and even of drowning, when swallowing food.

Thus, the question that immediately arises is: Why –in our case– has nature allowed evolution that entails potential risk? The answer is that the location of the vocal cords favours speech sound articulation. In other

animals the higher positioning of the larynx virtually excludes the existence of a pharyngeal duct (common to the respiratory and digestive systems) connecting the floor of the mouth with the opening of the vocal cords. However, this duct is used to produce sounds in a number of ways.

Firstly, resonance increases, which would otherwise be limited to that produced by the oral and nasal cavities. Secondly, it facilitates the emergence of distinctly guttural sounds. Following the musical analogy of the linguist A. Scovel, one might say that the baritone enriches the soprano and tenor voice. An additional advantage of this displacement of the human larynx is that it favours the production of subtle differences between vowel sounds (for example the words *look* and *luke*). In summary, if evolution seemed, in terms of positioning the human larynx, to have followed the wrong path, this is simply due to the positive trade-off between this variable and proper physiological functioning.

In as much as language is a core element of the human condition, essential ambiguity, malleability and ability to slide (expressed as literary discourse allows) make man largely unsuitable for the pure economics of natural order.

Further, in itself it is capable of setting up an order in which nature in its immediacy (animals included) is a means and not an end, that order which we term «spiritual life», which has at heart what Steven Pinker calls the «language instinct» and which would be the core instinct of human beings, a being as inherently ambiguous as it is unprogrammable.

A computer, possibly a robot, is perfect, unambiguous, programmed or even program limited. Sometimes such programming reveals gaps and that is a sign of failure. Such weakness has nothing to do with the porosity that language as a filter of human intelligence witnesses. For without such imperfection, language –pure and simple– would lack the resources (metonymy, synecdoche, etc.) that enable the emergence of poetic discourse, for instance, which are pointless for anything other than language itself. ☩

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