

LAW AND HUMAN NATURE : THE SOCIAL-ADAPTIVE FUNCTION OF THE NORMATIVE BEHAVIOR

Abstract: The objective of this article is to offer a critical (re)interpretation of genesis and evolution, object and purpose, as well as useful qualified methods for interpreting, justifying and applying modern practical law, all with the intention of putting philosophic thought and contemporary formal theory of reason at the service of hermetics and juridical argumentation. Law is no more—no less—than an *social-adaptive strategy*, evermore complex, but always noticeably deficient, used to articulate argumentatively—in fact, not always with justice—through the virtue of prudence, elementary relational social ties through which men construct approved styles of interaction and social structure, i.e., to organize and ethically improve political and social life in such a way as to permit that no free citizen—rich or poor—should fear the arbitrary interference of other social actors in his life plan.

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1. Problems in an analysis of the law from the perspective of the nature/culture interaction

Many centuries of debate on the origin of the law (and ethics) could be reduced to the following alternative: either ethical and juridical precepts, such as

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Justice and human rights, appear thanks to human nature with the results that there are some innate rules on the behaviors and some universal morals determined by our nature, or these ethical and juridical precepts are socially constructed human inventions in the sense that nothing exists in the world of the law and ethics outside human agreement and disagreement.

The distinction, as we will see further ahead, assumes something more than a mere mental exercise for jurists and academic philosophers. The choice of one of the hypotheses makes an important difference in the way in which we see ourselves as a species, establishes a measure of the legitimacy and the authority of the law and the normative announcements, and determines, in the last instance, the conduct and the sense of practical ethical juridical reasoning.

The doubts still to be solved about the origin of the law present an apparent problem: the search for alternative means between natural law and juridical positivism – but above and beyond both - has generated an explosion of productive creativity in very diverse investigation areas (ranging from philosophy to science of the law, and juridical argumentation, sociology, juridical hermeneutics and many others) and have attracted the attention of a growing number of investigators of recognized prestige and removed the jealousy from the different disciplines. This is a problem because, as often happens when the structure of an area of work and investigation alters suddenly and radically, consternation and disorientation have been generated. The new concepts and the arguments about them have proliferated to the point that, on the one hand it has become very difficult, if not impossible, to maintain an informed and global perspective. Furthermore, the general evaluation criteria that permit judgment of these new concepts and arguments have become weak and vulnerable. The result of these inconveniences can be seen, for example, in the intellectual revolution that the cognitive sciences are causing. Something similar is happening with innovating speed in philosophy and science of the law.

In the midst of this torment of academic production, the extraordinary proliferation of investigations and publications that in the last decades has directed interests towards the reflection about the relationships that exist between cognitive science and evolutionary biology on the one hand, and sociology, social normative philosophy, anthropology and cultural evolution on the other, deny the existence of

unviable frontiers in the territory of science and question the idea that the “cultural reality” is constructed outside the natural determinations.

Although much of the social sciences and many of the law operators still remain outside this new multidiscipline reality, it has started to jeopardize much of the traditional theoretical concepts of the normative social sciences and of juridical science itself. It makes the proposal viable (and even the demand) that new criteria for the knowledge sectors in law should be revised in the light of recent studies from evolutionary psychology, evolutionary biology, primatology and neuroscience.

Flexible behavior facilitates the acceptance they hypothesis that the juridical, social and human sciences will obtain more benefits if they set out from a vision linked to the biological nature of man, following in the steps of the transformation of philosophy of the mind as part of the cognitive sciences, that if they remain in the theoretical and methodological isolation since the juridical professionals pay little attention to the foundations of human nature and no interest whatsoever, in practice, to its deeper origins. In other words, the theoretical gaps that are a problem to these professionals have been imposed by the little attention they have given to individual behavior that originated from the intersection of sophisticated cognitive problem with the social and cultural environment in which we move.

2. Why does the law exist?

If the need to change a paradigm is accepted, it seems reasonable to sustain that all operative forms destined to evaluate the problem of the juridical phenomenon from the perspective we could call naturalist should begin with a question: how is the law possible? or in other words, what is the function of the law in the context of human existence?

The conventional Neo-Darwinian explication sustains that the possession of behavior norms is an adaptive advantage, so that the original question about why we create the law, becomes what has constituted (or constitutes) the selective or adaptive advantage of the law. Not being able to answer this question, the presence of the law in the universe of human existence will continue to be an enigma open to the most disparate suppositions.

The truth is that such a focus could be qualified as extreme adaptationalist. Perhaps the norms of the law are, in their origin, a subproduct of other unknown adaptive functions on which they rest. But it is certain that, if the juridical proposals need determined brain mechanisms to be processed, the reason for the existence of these mechanisms must be explained.

Moral and social behavior is guided, in deepest terms, by our integrated cognitive architecture functioning in specific modules or dominions, whenever we understand these as neuronal networks that link various zones of the brain. In most part this architecture is innate, but it needs environmental stimuli originating in the first instance from the social and linguistic surroundings to be completed during the ontogenetic maturity of the individual. Thus only interactionist models between the innate substrate and the environment can accurately describe phenomenon of obtaining the neural structures whose functional behavior is translated into facts such as the juridical morals, the values assumed by an individual and decision making, with the juridical values in the first instance because of the focus of this study.

Our evolution as a species took place, as far as we know, by Darwinian mechanisms and according to Darwinian limitations. In consequence, the nature of the human being on the ground circumscribes the conditions of possibility of our societies, in particular, guiding and limiting the institutional and normative set that will regulate the social relationships. The norms and values assumed by human beings appear within a very complex adaptation process (Darwinian), to the everyday world. Unless we accept some theological proposals about the supernatural origin of axiology, any normative social (or juridical) theory that intends to be worthy of credit nowadays must sustain itself in a Darwinian model about human nature (Rose, 2000).

3. Neuronal bases of social and moral behavior

If we accept the previous statement, we arrive at the causal chain that justifies part of the process of the appearance of the law. It has to do with circumstances and phylogenetic evolution, fixed already in our ancestors of the Homo genus, from some brains big and complete enough to sustain the cognitive architecture that allows us to make evaluative choices regarding behavior. But the undoubted obtainment during human phylogenesis of some bigger and more complete brains shows an enigma. Given that the neural tissue is the most expensive in terms of biological and energetic needs (Aiello & Wheeler, 1995), it cannot be believed that it was obtained accidentally. There must be important benefits derived from the possession of larger brains. About what are these benefits? What do they consist of?

The response can be found searching for the appearance of phylogenetically fixed behavior. Other species with a certain social complexity solve their adaptive needs by other means. Extreme altruistic behaviors have appeared during the evolution of living beings on our planet at least four times in the so-called “social” species: the hymenoptera (ants, wasps, bees, termites), the parasite “prawn” of the anemones and sea corals (*Synalpheus regalis*, Duffy, 1996), the hairless “rates-moles” (*Heterocephalus glaber*, O’Riain, Jarvis & Faulkes, 1996) and the primates (with human beings as the best example). Neither the social insects, not the rats nor the parasitic skunks have a language like ours. Their means of communication can be very complex. Bees, for example, perform a specific dance exercise to transmit information about food location and quality. The animals in the species closest to the humans, the chimpanzees, have a variety of gestures, shouts and other conducts to show or dissimulate fear and aggressiveness, and at times show a certain sense of justice, show desires to congregate and maintain complex sexual relationships (de Waal, 1996). But they never use a double articulation language with syntactic structure.

Language can thus be considered the key to tracing the adaptive benefits capable of assuming an adaptive pressure on the big brains in the human beings.

The linguistic ability unique to our species, that is the most important tool for culture transmission, brings us certain clear advantages in the strategy of social survival that the more simple communication systems could not sustain. Without doubt we follow, without knowing why, the adaptive advantage of the human language is great to the point that we are allowed to know “who did what to whom”. We can predict in terms of well-defined conduct the consequences of our congeners but, at the same time, we are not able to give a precise definition of justice or to decide in which aspect the theory of natural law is preferable to that of a more tranquil positivism.

To try to understand and overcome the traditional obscurity of theoretical discussions on analysis of law whose best perspective is functional, that is, that which starts from an assumption of (and sometimes reductionist and/or eclectic) axiological, sociological or structural perspective, without trying to elucidate only for what the law serves in the environment of human existence. The functional starting point does not oblige us to resort to the rhetorical expedient (the traditional relativist) of conditioning juridical knowledge to the obscure limits of the revelation of some theories that transcend understanding and the human experience itself. It is not necessary to assume the existence of independent juridical truths that our intelligence is not able to process and understand, nor do we have to assume as unapproachable the reason that justify the existence of the law as one of the essential aspects of group life.

Once the establishment of the law is situated in an evolutionist and functional dimension, it seems reasonable to start from the hypothesis (empirically fertile) that the law appears and is justified by the need to compete successfully in a complex social life. When our hominid ancestors faced the adaptive problems associated with complex group life, the selective pressures appeared in favor of cognitive processing organs capable of managing the universe of norms and values. We insist that this is a hypothesis. But it is at least the same that justified the type of social behavior and cognitive abilities of other primates (Humphrey, 1976). Thus the functional and adaptive optimization of the interaction mechanism would appear of certain elementary forms of sociability that seemed to be rooted in the structure of our mental architecture.

What would be these forms?

When trying to answer many of the questions about the way in which the organization of the human mind affects social relationships and conditions our moral institutions, Alan P. Fiske (1993) stated that there are four elementary forms of sociability, for elementary models by which human beings construct some consensual way of social interaction and social structure. The four elemental models proposed by Fiske are the following: 1) communal sharing; 2) authority ranking; 3) market pricing; and 4) equality matching. These four structures are found in a very extended form in all the human cultures examined by Fiske and are part of the more important areas of social life. As the only possible explanation of this fact, the author suggests that they are based on the structures of the human mind.

As it seems unthinkable to treat the juridical relationship (or rather, the personal relationships of the human individuals that the juridical discourse identifies as such) without taking social interaction as reference, a simple examination of the characteristics of the four types of relational social ties proposed by Fiske allows us to discover firm articulation of these forms of social life: agreed ways of combining them, of enhancing and cultivating their best aspects, and mitigating and judging their destructive and dangerous aspects. This practice has an important consequence: as one admits that the law and "order" are relational in character, the realization of the law from an instrumental, pragmatic and dynamic perspective comes to be conceived as an intention, as a technique to solve determined practical programs related to behavior and intersubjective interference of the individuals (Kauffmann, 1997; Atienza, 2003).

The best way of obtaining the shaping the elementary forms of sociability - communal sharing, authority ranking, market pricing and equality matching - would be to develop suitable juridical instruments for their fair and balanced articulation. It is, definitely, a way that leads to considering the law as argumentation and assumes, uses and in a certain way, gives meaning to the other theoretical perspectives related to the structural, sociological and axiological dimensions of the juridical phenomenon. Consequently it seems reasonable to assume that a new theoretical proposal of juridical discourse should consider the circumstance where the argumentation is made in juridical life is, in essence, an argumentation on the various means by which the four forms of social life are articulated based on the

complex structure of the human mind and irreducible among themselves (Atahualpa Fernandez, 2002).

A Darwinian explanation of the evolution of the law understood in this manner assumes that the conduct norms (in this case, of a juridical nature) will represent a selective or adaptive advantage for an essentially social species, such as ours, that otherwise would not be able to prosper. Such norms shaped the need to possess an operative mechanism that would publicly enable our innate capacity to infer the mental states and predict the behavior of individuals. In this way social knowledge would be increased among the members of the group and the ability to solve social conflicts developed without having to resort to forms of hierarchy and social organization typical of many animal species, such as aggressiveness. A juridical normative mechanism assumes the possibility of offering solutions for the practical and active problems surrounded in a non conflictive way the fields in which the individual interests can be valid and exercised socially (Ricoeur, 1999).

4. The perspective of the “other”: advanced cooperation

There is a key element that deserves analysis to obtain in the human phylogenesis a mind/brain set to capable of producing, understanding and using the normative universe as a tool for individual adaptation within the group and of that group itself within its environment: the understanding and anticipation of the reactions of the “other”.

Recognition of the other in social life is linked to the recognition of the self. The ability for self interpretation is inseparable from the acquisition of the ability to interpret others, to read their minds, to understand them and understand ourselves as intentional beings. Although reflective individuals, we come to know ourselves in part through the eyes of others, and when we observe ourselves in relation to the others a very important part of our experience is our imagined vision about how the other members of the group see us.

This ability for self observation through someone else's mirror is one of the bases of human social life and the essence of the true meaning when we call ourselves social beings. Indeed it is also a crucial point in some of the refined mathematical models of the evolution of the social agents. For example, Nowak and Sigmund (1998) offered a simulation model of the development of corporative groups in which indirect reciprocity in help was obtained by effective cooperation and by thanks of counting on a cooperator "image" (Nowak and Sigmund, 1998, Wedekind, 1998). We will immediately return to this point.

We can only speculate on how the mental faculty of identifying the "other" as an intentional being was fixed in the hominid evolution, but there is signal that the need to adapt to new open habitats in the African savanna by the use of stone utensils in hunting and *carroñeo* tasks could be assumed to have been sufficient selective pressure to establish strong social tendencies and favor the ulterior advance of the cognitive abilities related to communication and symbolic association. This is the same as saying that the neurophysiological basis for language, thought, purposeful intercommunication and mind reading could have begun not in the final stage of hominization, with *Homo sapiens*, but rather in the initial moments in the *Homo habilis* species (Tobias, 1987a; Tobias, 1987b). Besides it may be the correct model of early acquisition of individual and distinctive cognitive abilities in the *Homo* genus, it is certain that within this genus and especially from *Homo erectus* extra allometric increases were produced in the brain (greater than that of the increase in body size). Terrence Deacon has made even more precise the hypothesis pointing to certain changes in the frontal cortex -already in *Homo sapiens* - as responsible for the appearance of the complex human cognitive abilities (Deacon, 1997; Deacon, 1996).

The frontal cortex houses functions such as planning and decision-making that seem to be derived more from the need to interact with the members of this complex social group than the need to solve other problems related to the environment. It could be said then that one of the main pressures that led humans to evolve in the form in which they have were humans themselves in their social dimension. It has always been much more difficult, since the beginning, to be able to predict the behavior of the person beside you than the succession of the seasons in the year, repeated systematically throughout the centuries. The same reasons as

those that we mentioned before regarding the need to justify the appearance of expensive brain tissue apply in greater force to explain the last expansion of the modern cortex in human beings with modern appearance.

It is probable that the best reason for the great neocortex development in *Homo sapiens* should refer to a cognitive phenomenon linked to the recognition of the other and the valorization of his behavior: the treatment of reciprocity understood as humans “own function”.

The idea of “own function” was coined by Ruth Millikan in 1984 and refers to the essential and exclusive constituents of the manner of acting of our species, that is considered linked to the nature itself of any human being regardless of temporal or geographic differences. According to Domènech (1998), the last Hayek was very concerned with the implications of such a concept, because he saw in the existence of “own functions” of our moral institutions a threat to the ultraliberal social order defended by von Hayek. As he said : “man’s innate instincts are not for a society such as that in which we live. Instincts are adapted to life in small groups (...). Civilization has brought only individualization and differentiation. Primitive thinking consists basically of sentiments common to the members of the small groups. Modern collectivism is a fallback to this savage state, an attempt to reconstruct the strong ties that are found in limited groups” (von Hayek, 1983: 164-165). But the discomfort that a concept like this may produce is not the real problem. The essential question is how much own functions can be detected and documented in the origins of human socialization and to what extent these functions continue to mark the territory of moral intuitions as a group living system. Because of this, the intention of avoiding the “wild state” meaning “natural” could become not only a great but also very dangerous mistake.

Can these human “own functions” be documented?

The needs to infer and predict the behavior of the others, maintain social cohesion and intragroup cooperation and solve routine problems of survival, reproduction, social interchange in group life in our species have led to the fixing of very subtle mechanisms to assess group attitudes. The problems the existence of egoists camouflaged as altruists present to a group of cooperators and the need to identify and punish who assumes a such social role, is an aspect which has been discussed frequently in sociobiology and ethology. Indeed studies by Cosmides et

al. suggest that natural selection could have fixed certain circuits in the human brain specialized in analysis of social interchange, capable of detecting deceitful behaviors (Cosmides, 1989; Stone, Cosmides, Tooby, Kroll & Knight, 2002; Sugiyama, Tooby & Cosmides, 2002). Thus the establishment of co-operative contracts would be more than a universal cultural tendency: it would suppose a human trait characteristic of our species, as characteristic as language and abstract thought. It would indeed signify the main factor of conditioning and development of the cognitive abilities of people, relationships, motives, and the emotions and the intentions that are manifested in social environment.

According to Ridley (1996), reciprocity weighs like the sword of Damocles over the head of each human being: obligation, duty, debt, favor, adjustment, contract, exchange, business ... there is no shortage of ideas of reciprocity and social exchange in our language and our lives. What the others do with (and for) us and think of our behavior is very important for our moral attitudes. Thanks to the principle of reciprocity and reasoning in terms of social contract, cooperative relations have become a practical base of social life. The sense of debt, of the need to return any gift or favor, seems to be universal and probably corresponds to an innate predisposition evolved in a language, in the *Homo* genus, whose social ties were established in a hunter-gatherer world where daily survival depended on the degree of social interchange and strength of the cohesion of the social ties created among the members of the group.

In truth, one of the most important consequences of the pioneer experiments by Cosmides referred to previously is the fact that they obtained firm indications that the formation of a contract is not the product of a single rational faculty that operates equally through all the agreements established among the parties that negotiate. The process includes an ability, the detection of deceit, that has been developed to exceptional levels of acuteness and fast calculation. The detection of the “deceiver” stands out over the detection of the simple error and raises the basic question of the establishment of social relationships, altruistic or not. Thus a contract is an implication of the form “if you want to obtain a benefit, you have to meet a requirement”. The deceivers who intended to take the benefit without meeting the requirement (Pinker, 2000) should be able to be detected.

The ability to detect is set in motion as a computational procedure only when the costs and benefits of a social contract are specified. More than the error, more than the good reasons, and more even than the margin of benefit, what calls attention is the possibility that others deceive us: something like this activates our moral intuitions and feelings and is the main source for the appearance of hostile attitudes; in short deceit imbalances the four relational social ties 1) communal sharing; 2) authority ranking; 3) market pricing; and 4) equality matching in our social interchanges. Thus the human mind seems to possess a lie detector with its own logic: when the standard reference “clean game” and result of the lie detector coincide, people usually act (although not always) following the rational logic established by the *Homo oeconomicus* model; when the references and the detection are different, another type of thought appears to punish the deceivers. In reality the concept of deceit can reach very subtle values.

Let us consider the so-called ultimatum game, where a first actor A1 must offer to a second actor A2 part of the sum of money that was offered to the first, so that if the second accepts the offer both obtain their reward but if he refuses it both end up without anything. An idea of rational human logic would lead to the understanding that A2 should accept any quantity that A1 offers; after all, it is always be more than nothing. But it does not happen like this; because below a certain percentage share, the subjects of the experiments refuse the agreement. Perhaps the most interesting regarding the identification by Sanfey et al. (Sanfey, Rilling, Aronson, Nystrom & Cohen, 2003) of the brain areas implied in this root decision directly linked to a sense of justice: the result are the same as, in the model by Damasio of the somatic marker (Damasio, 1994) are part of the neural network of frontal limbic interconnection.

Our minds, say Sober and Wilson (2000), were formed by psychological mechanisms that evolved to favor adaptive behavior related to the interest in the well-being of others and with the typical predispositions of any species designed to be social, trustworthy, and cooperative. Human beings are immersed in social instincts: they come into the world equipped with the predisposition to learn to cooperate, to distinguish the just from the deceitful, to be loyal, to earn a good reputation, to exchange products and information, to share work and to model their individuality and social ties from the reactions of the other. In this respect we are

unique. And in large measure we are this way thanks to the way in which our brains function.

5. Mental Modularity

How do they do it? One of the most complex and also one of the most interesting aspects for any investigation that aims to study the functions of the human brain is its modular character. The most decided hypothetical proposal about the existence of brain modules to process determined mental functions was carried out within the so-called “cognitive functionalism” by Fodor and Chomsky. It weighs the great differences that the module theory of one and another establish (see Cela Conde & Marty, 1998), the main points in common that should be considered for the purpose of this article are (1) the mind is a functional state of the brain (that implies denial of any dualism that, as Cartesian, gives the mind an ontological statute separate from the biology of the brain and independent from it); (2) brain events that lead to mental functions take place by computational processes (they are therefore based on the “activated” or “deactivated” state of the basic elements that interconnect: the neurons); (3) each cognitive function can be considered a “module” of our mental architecture (the equivalent of a dominion-specific “organ”: language, numerical capacity, etc.);(4) the modules function from mostly innate brain components (they also need environmental elements to reach maturity of the mental organs during the ontogenesis of the individual).

Mental modularity has been understood in many ways, as we say, by the different authors of computational functionalism. The most interesting exposition of the effects that are dealt with in this article is by Noam Chomsky, for two reasons. The first, that its cognitive architecture is highly compatible with the findings of the neurosciences. The second, closely related to the first, is that there are empirical descriptions about the neurological components of such mental organs. But before entering in details it is interesting to consider a crucial aspect: the interaction among

the brain processes and the formed environment, that in our species refer to a group in strict social living.

Let us consider a very well-known mental function: language. The Chomsky model of development of the linguistic competence passes through the presence some of the abilities in the genetic components of human nature that give any newborn the possibility of developing a determined language. These components must be strong and complete enough to allow the language creator of great syntactic and semantic precision to be installed in a very short time - a few years - and without a specific learning program. But the innate components cannot be so wide as to impose the grammar of a particular language. Any child, of whatever that ethnic group, will learn the language of the group in which it grows up in. The social dimension of language therefore imposes its rules.

Can the same competency development model be extended to other mental models/organs? The reply seems to be affirmative. The brain reaches maturity during ontogeny also regarding any other mental module or “organ” and not only by that of language. It seems reasonable to admit, therefore, that our valorizations are, for the most part, the result of the dominions in a permanent state of interaction:(A) a set of genetic determinations that stimulate us to maintain moral attitudes, to assess and prefer, and that belong to the common genome of our species; and (B) a set of moral values of the group that is a cultural construction so that this value construction (and transmission) takes place historically in each society and in each epoch. A universe of preferences results from the interaction where one is not free to take just any path. Our valorizations are determined in by great traits by the innate tendency to determined conducts, that can be considered the true source of human values. It is important to bear this in mind because shared moral and juridical valorizations have the most likelihood of success in the future. It seems convenient to use this fact, as far as possible, at the time of elaborating ethical and normative precepts.

As Antonio Damasio (2001) stated, ethical values constitute strategies acquired for the survival of the individuals of our species, but such acquired skills have a neurophysiological support in the base neural systems that execute the instinctive conducts. The brain processes that are related to the emotions are deeply articulated with those that perform assessment calculations, on the establishment of

neural networks that connect the frontal lobe with limbic system. Thus if the ethical-juridical choice is based on assessment reasoning and also on emotion and moral sentiments done by the brain, it cannot be considered as totally independent from the constitution and the functioning of this organ acquired in the evolutionary history of our species.

Therefore we find ourselves with the very important role of social life: that of directing the innate human component towards certain specific dominions. Imagine many evolutionary banners under which a similar scheme, of interaction between the individual nature of beings that live in a group and the presence of collective cultural values, provide *ingentes* adaptive advantages. But within this multitude of hypotheses there is one that should be considered immediately: the law as part of the social environment. The “juridical certainty” can be understood very well within the model as a social and cultural solution for the adaptive problems related to the capacity and need to predict the actions of the members of the group and their consequences.

The origin and evolution of our “contractual behavior”, that is, of the law as an artifact of culture, allows us to understand that the moral precepts and juridical norms are the result of a long road of adaptation and to the long time passed since the appearance of our species. Cultural transmission has been adaptive since its origin by permitting that the individuals diminish time and costs necessary for learning a conduct in terms of evolutionary efficacy (Boyd and Richerson, 1985). The same can be said regarding the cultural artifact called law.

6. The natural universe of the law

As intentional beings, any human action, that is, any movement, any thought, any sentiment or emotion that is intentional, responds to the specific form as natural selection modeled our brain giving us an adaptive advantage. The objectives

of our actions are reached by strategies directly linked to human nature, without loss – clearly - of admitting wide variations resulting from insertion in the social cultural group in which we live. Culture influences both to accentuate or decrease the most deeply rooted tendencies of human nature.

This double action of nature/culture has produced, during the long course of our evolutionary process, some strategies and mechanisms designed to solve determined adaptive problems. If they fulfill their purpose, we say such mechanisms and strategies are valuable (they are good) and as such, are capable of accumulating traditions that, always in a continuous line of renovation, are transmitted from generation to generation based on individual actions of people influenced by this triple set of elements from nature, culture and history both modern and ancient, of humanity.

Given this situation, of such ample temporal and cultural diversity, the hypothesis that all human beings without significant exception tend to valorize as good the same thing will lead to the statement that it cannot be because we have not all agreed on the goodness. Such a shared value would be based on the natural psychology of the human species by giving an effective solution to the adaptive problems of the moment.

Do such universal values exist that are either positive or negative? All human beings seem to valorize, for example, intragroup cooperation, but at the same time distrust intragroup cooperation when the proposal comes from outside. We value group cohesion, kinship relationships, submission or obedience to a leader, the ability to rise in social hierarchy, altruistic conduct, child protection and education, strategic alliances, friendship, sex, moderate unruliness, exchange relationships, controlled risk; we value sincerity, but also reciprocity and safety and we hate deceit and injustice - at least when they affect us personally. There is only one explanation for this: because evolution by natural selection produced a human mind with the parameters necessary for us to behave in this way typical of our species.

Natural selection modeled our brain with the result that we care more about some things than others. Our cognitive architecture - functionally integrated and dominion-specifically homogeneous for all human beings - imposes strong constrictions on the perception, storage and discriminatory transmission of social and cultural representations. In other words, the limits observed in the diversity of the

ethical and normative announcements are the reflection of the structure and functioning of our cognitive architecture. The biological characteristics of our brain establish the space of the norms of conduct that we can learn and follow. This principle, defended in the so-called “second social biology” (Lumsden & Wilson, 1983) follows from other proposals prior to the style of Waddington and the epigenetic landscapists. It implies that if the cultural solutions are contingent and are historical in character, they moved within some narrow possibility limits set out by human nature. We tend to valorize certain things in detriment to others and the values guaranteed by our conduct norms describe (in most part) our natural moral aptitudes: we value that which admits outside of our limited capacity to learn to value it.

Unlike that established by the *Homo oeconomicus* model, that encourages us to behave morally and juridically is not the deliberate calculation that doubt among the possibilities of obtaining a certain benefit on complying with an established norm and the risk run of being discovered and punished for error. Nor do we function on a conscious adhesion to rationally analyzed and accepted norms. Certain moral intuitions and sentiments come into play surreptitiously, spontaneously, without us realizing the error: empathy, remorse, shame, humility, sense of honor, prestige, compassion, companionship.

As we have shown, such intuitions are based on innate predispositions of our cognitive architecture for learning and manipulation certain inherent social skills inherent to brain biology, skills that appeared during the evolution of our hominid ancestors to avoid or prevent the conflicts of interest that arise in group life. These traits, that we could call tendencies more than characteristics, that best illustrate the origins and the reality of man’s moral and juridical behavior.

Indeed if men get together and live in society it is because it is the only way in which they can survive. In this way specific social values have developed: the feeling of belonging and loyalty to the group and its members; respect for life and property; altruism; empathy; anticipation of the consequences of actions ... they are practices that appear as necessary in the course of common daily life that later give way to the concepts of justice, moral, law, duty responsibility, freedom, equality, dignity, guilt, security and betrayal, among many others.

What counts in the end is the fact that the tendency to separation between the material and spiritual has led to the absolutism of some of these values - distancing them from their origins and from the specific reasons that created them and presenting them as transcendent entities above and beyond human beings, ethics and law only acquire a solid base when they are linked to our cognitive architecture structured in specific dominion modules, that is, from human nature based on genetic inheritance and developed in a cultural environment. It therefore could be said that the codes of the human species are a peculiar consequence of our humanity itself, and this, in turn, “constitutes the basis of our cultural unity” (Maturana, 2002).

The axiologic and normative project of an ethical community is no more than a cultural artifact manufactured and used to enable the survival, reproductive success and group life of the individuals. It also serves to express (and much to control and/or manipulate) our intuitions and our moral emotions, translating and composing in social adaptive formulas of living together the instinctive aspiration of justice that has moved us throughout the evolutionary history of our species. From this the juridical norms dictate sexual practices, foment certain types of social relationship ties in detriment to others, regulate freedom and equality and prohibit - under certain circumstances - aggression and violence.

It seems inescapable that we must accept the fact that we are the result of two different processes, whose confluence, if we can call it this, constitutes us as humans: a biological process of hominization (the sum of mutations, recombination and natural selection by which *Homo sapiens* is distinguished from the species that it descends from) and a historic process of humanization (by adding different keys to the purely biological: rules, moral, language, culture, civilization). The two processes are very juxtaposed as different and even antagonistic; the example of the position of von Hayek mentioned previously against the “own function” of the human being. It is probable, however, that this translation of the classical opposition *nature/nurture* developed from a mistake: that the historical cultural constructions and the biological evolution events are independent processes.

An interesting negation of this supposed isolation between nature and culture, sustained by the second social biology, establishing the appearance of both human nature and the cultural expressions of the values of cohesion of the group

through any coevolutionary model and coordinated evolution among genes and culture (Lumsden & Wilson, 1981). The model of coevolution sustains, for example, that the normative cultural representations related to subjects of sex, family and power trigger strong reactions and are more prosperous in terms of “genetic replication” because they concern aspects of great importance in our evolutionary past (Brody, 1996).

It is not easy to go beyond the theoretical model sustained by a strong mathematical apparatus by Lumsden and Wilson. How could you prove the empirical effect of the presence of social relationships on the fertility of the group of *Australopithecus*, for example? But it is also a speculative hypothesis, the sense of an evolutionary process of some beings who, from the small bands of 70 to 150 hunter-gatherers on the savanna, whose survival depended directly on the maintenance of social cohesion, progressively multiplied and concentrated themselves: first in small towns and later in large nations until transforming themselves in a “global society”. Indeed this is, except for the distances, the same scheme that led to the great ideal of universal citizenship by the illustrious Kant and Goethe and that, certainly, is very different from the neoliberal globalization process of our times.

In any case the phenomenon is accompanied by an accelerated increase both in the knowledge and complexity of the relational social ties and structures - especially what the existing information and communication systems do among the members of our species - that permits a much faster and wider interaction among the social groups and at the same time, requires a substantial increase in the integrating norms of common action. In the end, as has been said before, the progressive increase in the complexity of the reciprocal interchange required, (and continues to require) an adaptive strategy based on an ability to predict evermore sophisticated conducts.

Thus we arrive at the human laws, this blind cultural and institutional tool, virtually neutral and with potential linking ability to predict and regulate human behavior whatever nature or degree of imperativeness. It seems reasonable to suppose that, as happens now, there existed continuous norms for the exercise of rights in all human societies (although they were very precarious on occasion) on the part of the members of the group. Norms capable of establishing the rules of living

together regarding power, property distribution and use, family structure or some other community entity, work distribution and exchange regulation in general. Norms that, to solve certain adaptive programs, shaped the collective environment and historically conditioned our ability and innate need to predict the behavior of the others and justify our actions.

As it seems to have occurred with biological evolution, the evolution process of the norms did not take place linearly without trial or error. Human beings are characterized by trying different normative solutions and adopting those that seem most efficacious at a certain moment, until they are sustained by others. As flexibility in human contact and the diversity of the cultural representations are, although limited, wide and, on the other hand, given that the cultural alterations can be transmitted very quickly and efficaciously, the process of normative evolution is subject to great leaps and bounds and even, at times, significant declines. It is this, perhaps, the best evolutionist explanation of the so-called unjust laws.

Our relational social ties are, as a result that is difficult to deny, deficient and our ability to predict and anticipate the consequences of actions is far from perfect, but it is in any case better than nothing. Without norms we would not have evolved; at least not in the form that we did. But we have the law and, with it, we promote in some groups as complex as man the means necessary to control and predict good and bad actions, to justify the collective behaviors and what is most important, to articulate, combine and establish limits on the four elementary models of relational social ties, communal sharing, authority ranking, market pricing, and equality matching. Thanks to the juridical universe, shaped in the last degree on explicit codes, human beings manage in their own interaction of social structure a partition (Which should be called, with the necessary caution about the concept, "consensual") all of the rights and duties that arise in community life.

7. Consequences of the evolutionary concept of law.

The first hominids appeared as African monkeys in an environment that has been identified as the typical tropical forest both in the Rift Valley and South Africa (Rainer, Moon & Masters, 1993; WoldeGabriel et al., 1994). With bipedalism as the distinctive trait, millions of years later our ancestors became colonizers of the open African savannas in a process that coincided with the appearance of the first stone industries and the first examples of the human genus, that is, *Homo habilis* and its olduvail culture (Leakey, Tobias & Napier, 1964). A panorama like this indicates that the first evolutionary transformations fixed by natural selection took place under very different ecological and cultural circumstances from those we have today. But it was then that the process began of forming a mind equipped with modules that process all of the cognitive contents pertinent for adaptation in a group.

It is impossible to establish the origin of the law, even if understood in the most wide and flexible manner imaginable. But we have sustained that this origin has to do with an adaptive challenge that human beings faced: a challenge that came from the human need to understand and valorize his congeners behavior, to respond to it, to predict and manipulate it and, from this, establish and regulate the most complex relationships of life in a group. Other species such as the chimpanzee suffered very similar selective pressures and even so, did not develop our systems of norms established by explicit periods. There is little doubt therefore about the unique character of the law as a tool to solve group conflicts. But the distinctive character does not mean that the law is free from any type of trace that arises from the specific circumstances in which the coordinated evolution of the human brain, of the hominid groups and of their cultural solutions were produced. Moral sentiments derived from our innate cognitive architecture and from the ethical and juridical codes, that arose as products of the interaction of biology and culture.

But is an important to understand that it is a process of mutual inferences, so that the first normative expressions must have changed the development environment of social intelligence. Understood from this viewpoint, the laws are not simply a set of spoken, written or formalized rules that people follow. They represent the formalization of behavioral rules, on which a high percentage of people agree.

They reflect the behavior inclinations and offer potential benefits to those that follow them. When people do not recognize these potential benefits the laws are, frequently, not only ignored or disobeyed but their compliance becomes conditioned to authority that the laws impose by means of brute force (Margaret Gruter, 1991).

Similarly, we formulate value choices about the just and the unjust not by calculated reasons, as the games theory and the juridical interpretations theory express, but rather because we are equipped with certain innate moral intuitions and certain emotional stimuli that characterize human sensitivity and allow us to connect potentially with other human beings. Thus the virtues of tolerance, compassion and justice are not political formulas that we strive to reach but rather commitments that we assume and hope that others assume. If we understand the Law beyond the formal expression of the codes, is not an intellectual construction. It appeared as part of our nature from a long and tortuous evolutionary process and, to understand it, we should look to the inside, to the way the mind/brain set processes instincts and the predispositions that permit the creation and exploitation of the relational social ties already existing and whose genesis should then be reintegrated in the evolutionary history of our species.

If it was inevitable that Hobbes and Rousseau lacked an evolutionist perspective, it is less pardonable that some of their intellectual descendents also lacked it. The philosopher John Rawls - although at the time dealing with the problem of stability of the principles of justice starting from the assumption that certain evolved psychological principles are correct, at least approximately – asks us to imagine rational beings that come together to create a society from nothing, as Rousseau imagined a solitary and self-sufficient prototype human being. To be sure they are intellectual experiments but are they based on reasonable requirements. It does not seem so. To speak of a starting point prior to society is absurd. Current human groups were born from groups of *Homo erectus* and these from groups of *Australopithecus*, and these in turn, from ancestors common to humans and chimpanzees that were probably some animals with a certain social life.

Thus it must be defended that between the world of the “is” and the world of the “should be” there is a manifest and intimate relationship, sufficient reason to consider our ethical faculty as an analogue of other mental faculties. Admitting that the dominion-specific diffusion of the ties of communal sharing, authority ranking,

market pricing and equality matching exists because they are incorporated necessarily in our cognitive architecture (forming ties that support the universal divisions in culture), is the safest way to discover the basis of the juridical means of explanation and articulation of social human conduct and of the relational social ties. Once it is admitted that all law has a relational character, and all juridical relation resides, in the final analysis, on a social relationship –that is one of the four elemental models of relational social ties established by man, which, in their turn, always have the individual as subjects, the function and finality of the juridical discourse consists both of the combined articulation of the referred relational social ties and of the duty of each operator to act in reason of the person and for the human person. In other words, law is no more and no less than a social adaptive strategy - ever more complicated but always insufficient - used to articulate by acts that are qualified as “valuable” the relational social ties through which humans construct acceptable interaction systems and social structurization

This kind of artifact induces - or should induce - the design of a normative and institutional model that prevents arbitrary domination and interference in a social environment full of asymmetries and inequalities, ensuring a certain material equality, and, in the last instance, stimulating and guaranteeing ownership and the exercise of rights (and performance of duties) of every inalienable point and that publicly acknowledges the existence of citizens as completely free individuals.

8. From natural law to positive law

The task of the juridical-interpretor is to give “hermeneutic life” to positive law derived from such a conception. A common mistake in the naturalist interpretations of the law - if they are of transcendent or Darwinian origin - consists in understanding that human nature contains what we could call the final product of the law. Such an explanation is rarely given, but it is a necessary conclusion whenever we expound the determination of moral conduct and the ethical choices regarding

supra individual instances, that are of genetic and theological order. If nature necessarily leads to a precise “moral sense”, then this moral condition is guaranteed without the need for any individual action.

The interactionist models we have studied and defended deny this dependency. The dominion of human preferences is, as we have said many times, the result of the maturation within a social group and with understanding of historical events, maturation that leads from the general constrictions to the perception and storage of the cognitive representations to the final -and very plastic – repertory of the activity patterns of our brain and those which emerge in our conduct.

Human nature imposes what we could call the “rules of the game” but not the final result. The most significant, however, of the naturalist approach is the possibility of fixing, within these rules of the game, certain high ranking values that stem from the character of the law as an instrument for social life. For much of the cultural diversity and the facility of acculturation allow the imposition of part of almost any juridical rule - and history shows us a catalog of proposals that led to monstrous situations - the “aberrant” rules are basically contrary to the moral intuitions fixed by natural selection. Given its evolutionist viewpoint, Rawls’ Theory of Justice is based on this assumption. The human being possesses a moral quantification system which permits him to qualify as good not any action he performs unless very concrete: those in which “good” means “good for everyone” (Tugendhat, 1979).

This does not mean that the “good for everyone” ideal has always been complied with, nor does it assume it will always be complied with in the future. But it establishes a line of moral progress: the one linked to the ever greater extension of the group called “everyone”. If in the Aristotelian epoch the moral doctrine included only citizens, and in the Putney Bridge debates citizens are the category which includes those without material possessions, it is not until the XX century that “everyone” means in at least countries - half of humanity: that there is the female sex. A line of progress around the universal concepts of “good” claims, for example, the intention to prevent or diminish human misery and unhappiness (that suffering is not produced when it can be prevented, and that inevitable suffering is minimized and effects the individual members of society, the citizens in moderation).

Indeed, the success or failure of humanity depends greatly on the way in which the institutions that govern public life are able to incorporate the perspective of

human nature in principles, methods and laws. Understanding human nature, its limited rationality, its emotions and its feelings seems to be the best way to formulate an institutional and normative design that, reducing human suffering, permits each one to live (to live with the other) in a search for a common humanity.

This means, in modest and more realistic terms, a specific and virtuous commitment - in the sense of Machiavellian virtue – on the part of the law operator at the time of defining and constituting institutional, normative discursive and social cultural designs as close as possible to the functions of our intuitions and moral emotions. And when this is not entirely possible, that they define institutional normative discourse and social cultural designs opposed to the always possible perverse manipulation of these intuitions and emotions. The institutional model that best reflects, of all those we know the ideal of this law generated by an evolutionary interaction of biological nature and culture is the democratic republic defended by the illustration.

And not only because the Republican tradition is capable of recognizing plurality in the motivations of human social life - something that assumes a notable initial advantage regarding the motivational monism of the Liberal tradition, - even because its open peculiar will of ethical-political model brings citizenship values and useful juridical political methodology to understand law as an instrument of social construction and, especially, to simulate the formal and material exchanges of the decision taking process within the fluid dynamic of the world of everyday life.

We are convinced that the time has arrived to transport the problem of law to a different and more fruitful plane. And although an evolutionist, functional and biological perspective cannot determine whether this exchange is adequate nor that measures should be taken to create, in the case of opting for it, a desirable mutation, it will certainly serve to inform on questions of practical relevance. Who operates the law can act in unison with human nature or against it, but he is more likely to obtain efficacious solutions (consensual and controllable) modifying the environment where human nature is developed than undertaking the impossible task of altering our nature by these means. In other words, it is the law that has to serve human nature and not the contrary.

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