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Biological Precursors of Ethics and Religion. Antonio Damasio and the Homeostatic Imperative

Precursores biológicos de la ética y la religión. Antonio Damasio y el imperativo homeostático.

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ABSTRACT: The biological individual and the precursors of ethical-religious action: The most recent reflections in the field of biology and the philosophy of biology have highlighted how complex and little obvious is the idea of a personal, individual identity in the world of life. On one hand, having lost a geno-centric reading, life, right from its first manifestations (bacterial, cellular), appears endowed with subjectivity, which is expressed in multiple and increasingly complex forms; on the other hand, the individual man appears to be the result of the interweaving of several living forms.

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Using the reflections of Antonio Damasio, the article will try to understand the "precursors" of man's ethical and religious action – that is, all those biological premises, such as strategies of cooperation and altruism, which emerge as preconditions for a human life. On the other hand, to understand the discontinuities and the specificity of man's advanced and personal action, which are expressed in cultural life, artificial in general and particularly in ethical and religious interiority.

KEY WORDS: altruism, Damasio, Ethics, homeostasis, imperative, Philosophy of Biology, reductionism, religion.

RESUMEN: El individuo biológico y los precursores de la acción ético-religiosa: Las reflexiones más recientes en el campo de la biología y de la filosofía de la biología han puesto de relieve lo compleja y poco evidente que resulta la idea de una identidad personal, individual, en el mundo de la vida. Por un lado, al haber perdido una lectura genocéntrica, la vida, ya desde sus primeras manifestaciones (bacteriana, celular), aparece dotada de subjetividad, que se expresa en formas múltiples y cada vez más complejas; por otro lado, el hombre individual aparece como el resultado del entrelazamiento de varias formas vivas. A partir de las reflexiones de Antonio Damasio, el artículo intentará comprender los "precursores" de la acción ética y religiosa del hombre, es decir, todas aquellas premisas biológicas, como las estrategias de cooperación y altruismo, que surgen como condiciones previas para una vida humana. Por otro lado, comprender las discontinuidades y la especificidad de la acción avanzada y personal del hombre, que se expresan en la vida cultural, artificial en general y, en particular, en la interioridad ética y religiosa.

PALABRAS CLAVE: altruism, Damasio, ética, filosofía de la biología, homeostasis, imperativo, reduccionismo, religión.

1. ETHICS AND THE RISK OF BIOLOGICAL REDUCTIONISM

When Van Rensellaer Potter (1970; 1971) coined the term «bioethics» in 1970, he could not have foreseen the widespread global acceptance it would garner, nor the ways it would be used. Potter aimed to emphasize the need for a new form of ethics (Beauchamp, 2003; Reichlin, 2021), which would derive evaluation criteria directly from life and the biological sciences. He further intended to scientifically advocate for a harmonization between ecosystems for species survival. In other words, Potter envisioned a kind of

biological ethics. Today this is primarily addressed by an evolutionary bio-philosophy (Borghini, & Casetta, 2013; Minelli, 2007; Pievani, 2005; Sterelny, & Griffiths, 1999), which could be a fundamental prerequisite for tackling bioethical issues.

Within the neo-Darwinist framework –long dominant over the past century and known also as the Modern Synthesis (Depew, & Weber, 2013)– the approach to topics like ethics and morality has been largely *genocentric*. While Darwin identified individual organisms as the primary units of natural selection, later thinkers, especially Dawkins and proponents of Wilson's socio-biology (Wilson, 1975), shifted focus. For them, the main players in evolution are genes, the genetic heritage. Organisms merely act as *vehicles* for gene preservation and propagation (Dawkins, 2017; 1989). Survival revolves around the gene, implying that organisms compete primarily to maximize their genetic dissemination: "individuals, in this perspective, then become passive carriers of the fundamental units of evolution, the genes" (Pievani, 2005, p. 16). The inherently *selfish* gene, seeks to replicate itself to dominate over others. Thus, behaviours that might initially appear as cooperative or altruistic are merely veiled forms of *indirect* selfishness. From a sociobiological and evolutionary psychological standpoint, complex social and cultural behaviours are viewed similar (Barkow, Cosmides, & Tooby, 1992).

Critics argue that such interpretations overly simplify parallels with eusocial world of bees, ants, and other insects (Damasio, 2017; Cavalli-Sforza, 2004)[2]. Still this viewpoint has persisted and retains interpretative potency. Human behaviours and the ethical codes governing them are understood as adaptations to ecological and environmental contexts. Yet, in our evolving ecological, social, and cultural landscape, these adaptations risk leading to "mis-adaptations" and "counterproductive instincts" (Pievani, 2005, p. 220). Savulescu and Persson's objection, which advocates for moral Bio-Enhancement (Persson, & Savulescu, 2014), is firmly rooted in this misalignment: common sense morality, with its codes and behaviours, is tied to a group or

[2] Regarding the limits in the economic sphere, of a narrow anthropological theory, see Mocellin (2011).

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tribal ethic[3]. As such, it is ill-suited to address major current and future challenges -chiefly climate crisis and international terrorism- which are inherently "global" (Persson, & Savulescu, 2012, p. 9) in nature. Addressing these challenges require a form of cross-border altruism, clashing with an anachronistic disposition, both behaviourally and biologically. This disposition is anachronistic, because the original adaptive function for which certain traits were selected, no longer guarantees efficiency in a world with entirely changed rhythms, scenarios, and context. As Konrad Lorenz argued several decades earlier, we remain primitives with tribal instincts, yet armed with weapons of mass destruction (Persson, & Savulescu, 2012; Lorenz, 1973).

The hazard of a post hoc and ad hoc argumentation, aiming to elucidate every individual human trait, predisposition, or behaviour, by tracing back to its original adaptive function, is apparent. As highlighted by John Dupré, socio-biology is prone to the temptation of reversing the sequence of events -given a tendency, "e. g. polygamy", its adaptive function is sought. The 1979 essay on the spandrels of San Marco by Stephen Jay Gould and Richard Lewontin (1979) stands as a somewhat definitive critique of *adaptationism*, the idea "that every arbitrarily selected trait of an organism should be an adaptation, that is to say, should have some function that would justify its selection in the course of evolution" (Dupré, 2001, p. 23).

In response, evolutionary psychology shifts attention from individual behaviours to cognitive and psychological mechanisms. Avoiding a *retail* evolutionism, it attempts to explain not specific actions, such as moral ones, but a series of psychological, and mental modules (Dupré, 2001) that humans draw upon to face a variety of situations. In other words, we are equipped with fundamental cognitive modules, mechanisms, shaped by natural selection and limited in number, which can give rise to diverse and varied responses depending on environment stimuli. Thus, there would be effective "moral modules" (Cosmides, & Tooby, 2008) that humans would automatically resort to in *social exchange*, situations. These modules can account for a plethora of moral behaviours, even those that may seem contradictory to one other.

[3] See the foreword to the Italian translation (Lavazza, & Reichlin, 2012).

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Despite their differences, "what socio-biology and evolutionary psychology have in common is the idea that ethics is a bio-program, that is, it should be traced back to the biological –if not even genetic– endowment of the human being" (Severini, 2020, p. 23), therefore an approach to all reductionist effects. Spiritual, religious, moral, cultural behaviours, or at least the cognitive and psychological bases for them, are outcomes of selective processes that have favoured them for their adaptive fitness. Competitive, cooperative, and altruistic behaviours should also be interpreted within this framework[4]. The *game theory* proposed by Maynard-Smith, the concept of group selfishness, and the idea of reciprocal altruism (Maynard-Smith, 1976), which have garnered support from various quarters, all endeavour to elucidate seemingly counterproductive behaviours in terms of individual, parental, or group utility. Altruistic actions might unveil their inherently selfish nature, provided that such selfishness is calibrated on a broader scale than the individual –such as the group, the family, or population– or on a time scale that extends beyond the immediate present. An act that might seem altruistic in the short term can, in a broader context and over a longer duration, reveal its selfish underpinnings[5].

2. Elementary altruism: eukaryotes and prokaryotes

The utility of gene competition as an explanatory paradigm become contentious when the entities under investigation in relation to altruistic dynamics are not genes or mesoscopic (Borghini, 2013, pp. 150-155) individual organisms, but rather cells and early multicellular organisms. By shifting our focus from macro-organisms and macrobes to microbes –protists, prokaryotes, viruses– we can underscore the inherently collaborative nature of life. This reformulation places selfishness and competition into a broader and less warlike overall dynamic.

[4] In this regard, see the position of Tomasello (2009).

[5] For example, in game theory, in the long run, altruistic behaviour would reveal its essentially selfish character, increasing the fitness of the altruist.

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Biologist Leo Buss, for example, emphasizes that without cooperative dynamics and symbiosis, the formation of complex organisms would be impossible. These organisms necessitate the transcendences of selfish tendencies by their constituent cellular populations (Pievani, 2005; Buss, 1987). Excluding tumoral dynamics, which are fundamentally selfish, altruism predominates, driving aggregation that is crucial for the evolution and transition towards more complex systems. According to Dupré and O'Malley, the time has come "to frame selfishness in a broader context, and to focus attention on a broader perspective of life understood as a collaborative enterprise" (Dupré, & O'Malley, 2013, p. 19). By moving away from a life definition predominantly based on complex living organisms -a perspective vulnerable to the vertebrate bias (Wilson, 1999) - the Darwinian paradigm of competition acquires a more nuanced form. They argue that both:

> Selfishness and cooperation are understood in a framework of collaboration. By collaboration we mean the interaction between components of a system that leads to different degrees of stability maintenance and transformation of the system itself […] Collaboration covers a continuum of interaction processes that can include both cooperative and competitive activities (Dupré, & O'Malley, 2013, p. 19).

By moving the focus away from the conflict between organisms –a perspective often conveyed, for instance, in certain interpretations of the human immune system (Esposito, 2020; Gagliasso, 2013; Pradeu, 2012; Tauber, 2002)– we discern the fundamentally collaborative function of life in its most basic dimensions, of which competition is an integral aspect.

Among the first to challenge the so-called "dogma of competition" (Margulis, & Sagan, 1986) is undoubtedly Lynn Margulis, a collaborator of James Lovelock, the author of the "Gaya Hypothesis" (Lovelock, 1979). Today, this hypothesis is particularly relevant due to the interpretation of the Earth as a "super organism" and its significant environmental and climate impact (Capra, 1996, p. 45). In her view, life gained dominance on Earth due to its ability to establish interrelationships and forge cooperative ties among fundamental life forms. Specifically, microorganisms, especially bacteria –which reigned over

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the planet for the initial two billion years– stand as a testament to the fundamentally symbiotic origin of life (Sini, & Redi, 2019; Yong, 2016). They ingeniously developed, owing to a form of "ancient and high biotechnology" (Margulis, & Sagan, 1995, p. 49), various chemical, metabolic, respiratory, and locomotive processes that enabled them to establish a cooperative network on a planetary scale. A noteworthy development is the pathway leading to differentiation between prokaryotic and eukaryotic cells.

Prokaryotic cells are those without a nucleus, in contrast to eukaryotic cells which possess a nucleus bounded by a membrane, within which the genetic material is contained. These eukaryotic cells, characteristic of animals, plants, fungi, protozoa, and all complex organisms, contain not only a nucleus but also a series of organelles, each surrounded by a membrane and responsible for performing essential functions for the survival of the eukaryotic cell. Notably, mitochondria –which also have their DNA– serve as energy powerhouses facilitating cellular respiration, and chloroplasts, which, through photosynthesis, convert light energy into chemical energy. The presence of these essential organelles, each with its membrane and genetic material, would suggest a symbiotic union between bacteria of varying sizes and the incorporation of one by the other. In other words, the eukaryotic cell may have originated from the engulfment between two prokaryotic cells, or more precisely from the phagocytosis of one (mitochondria and chloroplasts) by the other, which then evolved into a mutual beneficial cooperative relationship.

In essence, the ingestion of a smaller cell led to a form of collaboration, through which the new cell learned to harness the energy functions of the mitochondria and, conversely, the mitochondria integrated themselves into a broader process. This gave rise to a form of mutualistic cooperation, enabling, 2 billion years ago, one of the most significant revolutions in the evolution of life: the emergence of eukaryotic cells (Damasio, 2017). Resistance to initial incorporation paved the way to a form of tolerance and later collaboration, laying the foundation for the appearance of a new biological entity. According to Margulis:

> The descendants of those bacteria that three billion years ago swam in primitive seas breathing oxygen are present today in our bodies in the form of

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> mitochondria. At a certain moment the ancient bacteria combined with other microorganisms […] providing for the elimination of waste and the supply of energy derived from oxygenation processes in exchange for food and protection. These "fused together" organisms then evolved into more complex, oxygen-breathing life forms (Margulis, & Sagan, 1995, p. 51).

This not only elucidates the symbiotic nature of the elemental building blocks of human life, but also reveals how competitive activity is transient –not an endpoint– and how such a propensity to compete fosters commitment to construct new levels of collaboration (Dupré, & O'Malley, 2013).

Antonio Damasio seems to largely share this perspective and reconstruction. Cooperative strategies

> Are possibly as old as life itself and were never more brilliantly displayed than in the convenient treaty celebrated between two bacteria: a pushy, upstart. bacterium that wanted to take over a bigger and more established one. The battle resulted in a draw, and the pushy bacterium became a cooperative satellite of the established one. Eukaryotes, cells with a nucleus and complicated organelles such as mitochondria, were probably born this way, over the negotiating table of life (Damasio, 2017, p. 235).

Cooperation, in this light, appears as a counterpart to competition, as a form of innovation that favoured the selection of organisms exhibiting the most productive strategies. Consequently,

> When we behave cooperatively today, at some personal sacrifice, and when we call that behaviour altruistic, it is not the case that we humans have invented the cooperative strategy out of the kindness of our hearts. The strategy emerged strangely early, and it is now old hat (Damasio, 2017, p. 236).

3. BACTERIA AND THE ANTECEDENTS OF *MORAL ATTITUDES*

In nutrient-rich environments, bacteria can operate with relative autonomy. However, when faced with resource scarcity, they tend to aggregate. These bacteria sense group size, assess collective strength and resilience and act cohesively against potential threats. They can create formidable barriers –such

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as those against antibiotics– evidencing antecedents of capacities akin to conscious feeling and deliberative reasoning (Damasio, 2017). This suggest that they behave as if endowed with such faculties. Though bacteria possess an intelligence "without a brain or mind" (Damasio, 2017, p. 54), they are adept at perceiving their surroundings, responding intelligently, communicating among themselves, making decision based on environmental evaluations, and demonstrating memory and coordinated social behaviors.

Furthermore, enriching this dynamic is their ability to cooperate, hinting a proto-*moral attitude*. To tackle adversity, bacteria collaborate and sideline those that shirk defensive duties. These *defectors*, despite their affiliation, are marginalized –yet not permanently– ostracized. Such "non-cooperative turncoat bacteria" (Damasio, 2017, p. 20) still tap into the group's reserves, while the collective works collaboratively, in the same direction, towards survival. Of course, it's reductive to equate such foundational dynamics to the intricate moral behaviors observed in humans. Nevertheless, even in these primordial life forms, there is an inclination to trade individual autonomy for shared benefits, those "common goods" (Damasio, 2017, p. 54) deriving from cooperative ventures. Conversely, it would be remiss:

> Not to recognize that simple bacteria have governed their lives for billions of years according to an automatic scheme that foreshadows several behaviours and ideas that humans have used in the construction of cultures […] Our natural behavioural tendencies have guided us toward a conscious elaboration of basic and no conscious principles of cooperation and struggle that have been present in the behaviours of numerous forms of life (Damasio, 2017, p. 21-22).

In bacteria, one discerns the rudiment of several human disposition encompassing the moral sphere.

4. THE *HOMEOSTATIC IMPERATIVE* ACCORDING TO DAMASIO

Illuminating the nexus between human cultures and non-human biological origins is paramount, both for comprehending the underpinnings of ethics and

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religion, and as an *antidote* against the increasing divergence of ideas and emotions from their inherent functions. Now, according to Damasio, what underlies and unites both the *behavioural codes* of bacteria, as well as those of insects –with their construction of cities, administrative systems, and efficient economies– and of man, with their gods and explicit moral codes is *the homeostatic principle*.

This principle, akin to Kant's categorical imperative, governs all that life forms, permitting no exceptions: "Homeostasis is the powerful, unthought-of, unspoken imperative, whose discharge implies, for every living organism, small or large, nothing less than enduring and prevailing" (Damasio, 2017, p. 24). In essence, this ensures life remains within a range conducive to survival, fostering flourishing and projecting continuity, thus endorsing that augments growth. Such an imperative, on one hand, pursues a dynamic form of stability through progressively intricate, dependable, and consequently cooperative structures – diverging from mere thermostatic mechanisms. Conversely, it intertwines with the fundamental survival directives (homeostatic imperative) like metabolic regulation, and cellular repair… linking it inseparably to an array of behavioural codes.

The core hypothesis posits that even the most intricate "behavioural code", fostering social cohesion and cooperation, are deeply rooted in the homeostatic imperative, aiming to mitigate, threats and enhance biological well-being. The quintessential human cultural mechanisms likely evolved in response to these imperatives: "cultural homeostasis is merely a work in progress often undermined by periods of adversity. We might venture that the ultimate success of cultural homeostasis depends on a fragile civilizational effort aimed at reconciling different regulation goals" (Damasio, 2017, pp. 31-32).

Feelings –which for many contemporary thinkers play pivotal roles in morality, often countering strictly rationalist ethical frameworks[6]– are foundational for Damasio. Primarily, they evolve to discern homeostatic aberrations and pinpoint states worthy of pursuit. Moreover, they act as barometers for the success or failure of biological and cultural endeavours, offering insights into

[6] Both the utilitarian tradition and the Kantian tradition fall, in different respects, into this tradition of a rationalistic type. See: Kohlberg (1971); Songhorian, (2020, pp. 86-102).

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physiological states and motivating corrective actions[7]. Therefore, thanks to the body-brain-mind alliance (Damasio, 2017; 1994), they provide a real-time mapping of the surrounding world and of the organism itself. This aims at championing the homeostatic balance, propelling living entities beings toward states that consider both internal and external factors and their mutual evolution.

Emotions, thus, are integral to homeostatic processes, autonomously maintaining an organism's internal stability amid external variations. They resist the intrinsic tendency of matter toward entropy, advocating higher organizational tiers (Damasio, 2017). Emotions and feelings, therefore, have a positive or negative valence, to the extent that they reveal an alteration in homeostatic balance and make us aware of fluctuations in the vital state within a canonical range. Beyond this range, the organism moves away from a state of well-being, edging toward disequilibrium and eventually disease and death.

5. Cultural homeostasis

Contrary to Dawkins's assertion, therefore, it is life with its homeostatic imperative that harnesses genes, intelligent behaviours, and social dynamics, endorsing them in a homeostatic capacity. It is the homeostatic imperative that capitalizes on genes and fosters emergence, not the other way around.

From this perspective, the Kantian categorical imperative, manifesting as a moral command within collective life, might be seen as the indirect representation of a primordial biological and unconscious imperative. This imperative becomes cognizant within freedom and social existence. The profound social nature –with its inherent cooperative dynamics– which:

> Was an essential support of the intellect of *homo sapiens sapiens* and was so critical in the emergence of cultures […] is part of the tool lit of homeostasis […] Beneficial sociality is rewarding and improves homeostasis, while aggressive sociality does the opposite. (Damasio, 2017, pp. 113, 173).

[7] "Feeling work as *motives* to respond to a problem and as *monitors* of the success of the response thereof". (Damasio, 2017, p. 16).

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Cooperative social practices, like the evolution of nervous systems, the rise of consciousness, and emotions, have proven beneficial for life's homeostatic processes (Damasio, 1999). Codes of conduct, encompassing moral standards, emerged as invaluable tools to foster a homeostatically effective sociability[8].

Thus, human cultures, too, originated as a countermeasure to pain and suffering, which arises from homeostatic deviations revealed by our emotions. Clearly, the concept of such continuity between biology and history, nature and culture, wasn't universally accepted until recent centuries. It only gained traction post-Darwin (Darwin, 1859). The notion that biology leveraged history and culture only became clear when the rigidity of the Modern Synthesis no longer dominated as a singular paradigm. This shift was influenced by authors like Adolf Portmann, Stephen Gould, Richard Lewontin and more contemporary philosophers (Jaroš, & Klauda, 2021; Gould, 1983; Portmann, 1969). Post Montaigne –who viewed nature as a link between humans and non-humans– and Rousseau –who believed nature and culture were intertwined in a quest for unity with all life forms– the "great division" (Descola, 2005, p. 73), as termed by Philippe Descola, transpired. By the 1800s, this division became ingrained with the establishment of cultural anthropology. Here *culture* was uniquely human, declined in the singular and represents the distinctive character of the human, in contrast with nature. The epistemological claim to endow human sciences with the precision of natural sciences further estranged nature from culture.

This relegated them to distinct realms, thus obstructing the productive interplay between biology and history and barring any interaction between biological and cultural evolution. However, as Damasio contends, "the gulf between the two sets of processes –biological evolution and cultural evolution– is so large that it makes one overlook the fact that homeostasis is the guiding power behind both" (Damasio, 2017, p. 158). It's this phenomenon that merits focus if we aim to discern the continuity extending form precursors to high-

[8] "The development of codes of conduct, regardless of where or when they appeared, has been inspired by the homeostatic imperative. Such codes have generally aimed at the reduction of risks and dangers for individuals and social groups and have indeed resulted in a reduction of suffering and the promotion of human welfare. They have strengthened social cohesion, which is, in and of itself, favorable to homeostasis". (Damasio, 2017, p. 28).

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er-order culture, encompassing the evolution of ethics and religion, thereby challenging the longstanding *great division* bias.

The patterns we have discerned in eukaryotic cells, in the institutional structures of insects, albeit formulaic, epitomize *primordial forms of culture* characteristic of pre-mental organisms. These contrasts with the *authentically cultural* traits of post-mental organisms (Damasio, 2017). Yet, both adhere to the identical homeostatic imperative. Hence, "we can venture that what we now consider true cultures quietly began in simple, single-celled life, under the guise of efficient social behaviour guided by the imperative of homeostasis" (Damasio, 2017, p. 185).

6. Homeostatic roots of religion

Properly defined cultures have had the merit of evolving a repertoire of emotional reactions and *pro-homeostatic strategies*. These strategies often innovative and predominantly in nature, are still subject to cultural selection. Thus, while they have roots in biological automatisms, they remain open to free and voluntary selection.

Every strategy, the cultural reaction, the primitive technology, and artificial tool –essentially everything we label as culture in the strictest sense– was established and expanded due to its ability to pursue and achieve homeostatic success. Regardless of how each cultural expression, be it art, philosophy, literature, or medicine, may later rise above its original function, Damasio argues for the undeniable "therapeutic function of culture" (Damasio, 2017, p. 173). On one hand, it seeks to alleviate both personal and external suffering, and to devise means for well-being; on the other it attempts to "tame the beast that has so often manifested itself in us and which remains alive, to remind us of our origin"[9] (Damasio, 2017, p. 174). Primarily, religion and morality[10] bear marks of this origin; they stand among the foremost cultural, pro-homeostatic, therapeutic cultural tools crafted by humans –driven biologically– to address the challenges of pain, violence, and mystery.

[9] Function that Damasio indirectly recognizes in Samuel von Pufendorf. See: Velkley, (2022).
[10] Both the term *ethos* and the term *religion* highlight their intrinsically social trait.

Following animistic religions, monotheisms, with their promises and hopes for a better life, became potent agents in mitigating pain[11]. This pain was perceived as bearable or even meaningful, in the context of an afterlife. With Christianity, suffering was rendered understandable, even socially acceptable, eventually to a tool for atonement and thus, salvation. However, for Damasio, the emotional and homeostatic origins of religious phenomena, are most evident in Buddhism. Here, liberation from subjective pain and suffering –more than their understanding and acceptance– is actively pursued through a process of self-liberation, overcoming both external pain and its indirect form of homeostatic anxiety.

Religious practices also serve therapeutic functions, offering comfort and consolation. They shield against dangers and violence stemming from fellow human but more so from nature –natural disasters, epidemics, earthquakes, and climate changes (Damasio, 2017)–; events beyond human control. These uncontrollable events prompt human societies to unite, cultivating cooperation and collaborative practices, which remain societal assets even after crises pass. Confronted with unpredictable disorder and violence –against which man feels defenceless and powerless– religious social practices restored order and promoted cooperation.

Thus, it can be posited that one of the most potent reasons driving humans –both as individual and collectively– towards the notion of *transcendence*, was a sense of powerlessness and despair against the mysteries, that render human life uncertain and painful[12].

7. CONCLUSIONS: A NEW BIOLOGICAL HUMANISM

In his exploration of altruism, Michael Tomasello differentiates *human culture* from the cultures of other species, emphasizing our unique capacity for cumu-

[11] As far as philosophy is concerned, just think of Boethius' *De consolatione philosophiae* and Arthur Schopenhauer's *The World as Will and Representation*. (Gadamer, 2003; Weizsäcker, 1987).

[12] On the connection between ethics, religion, and the human capacity to recognize a higher authority or point of view, our author refers directly to Nussbaum (2018; 2013). See too: Johnson (2014).

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lative cultural evolution and the development of social institutions governed by rules and behavioral codes (Tomasello, 2009). This *distinctiveness* is rooted in human-specific cooperative abilities and motivations, particularly the capacity to forge joint intentions and engagements within a cooperative framework[13]. Ethical and social norms –whether they pertain to moral judgements about the right actions or conventions of conformity– are constructed upon this We-mode, the collective consciousness. The perspective elucidates both our drive for symbolic communication and the imperative of play (Tomasello, 2009).

Play and cooperative desire, that underlie ethical and social norms are, in turn, so powerful precisely, only because they support homeostasis. It's the undeniable and compelling force of the homeostatic imperative that elevates cooperation and plays as essential instruments for a being with unmatched emotional-cognitive capacities. While humans exhibit a notable evolutionary advancement[14], it's pivotal to recognize that our foundational driving force remains the homeostatic imperative. Thus, humans concurrently inhabit two worlds: the realm of biological urgency –a *primordial* culture–, and the domain of the *genuine cultural*, adept at an innovatively addressing age-old necessities through culturally transmitted –be it orally, written, or behavioural–. The transformative quality of human lies in our "possibility of denying our genetic inheritance an absolute control over our fate, at least temporarily. We can directly and willfully counter our genetic mandate when we refuse to act on our appetite […]" (Damasio, 2017, p. 229).

This duality permits the cultural amplification, fostering or invention of conscious human strategies, like altruism, compassion, and gratitude, through education. Simultaneously, it perpetually accentuates the tragic or dramatic undertones[15] in human history. Indeed, while ethics and religion can serve

[13] Man would be a cooperative and mutualist animal, and "human beings who join forces in shared cooperative activities are the true creators of human culture" (Tomasello, 2009, p. 87).

[14] Leap that occurs with the development of a complex nervous system, a mind, conscious emotions, and feelings.

[15] It is interesting to note how Damasio sees in the birth of opera – at the end of the 19th century – and in the playful coda with which Giuseppe Verdi concludes Falstaff, the sign of a new way of approaching (Wagnerian) tragedy: a way that denotes a new form of balance with the blind laws of nature and evil emotions, more unbalanced in favour of the tape.

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humans as potent homeostatic tools, or even mechanisms transcending immediate homeostatic needs, they can also act as instruments for violence, repression, and chaos. This dual nature arises not from their inherent qualities but because, in humans, the homeostatic imperative metamorphoses into a moral imperative, with myriad possible manifestations. Through this lens, Damasio avoids the subtly finalistic biological trajectory underscored by Descola –a trajectory that spannings from Kepler, leads to Leibniz and Darwin, manifesting itself today as the *providential* homeostasis of ecosystems[16]–.

The emergence of conscious subjectivity situates humans within a dual culture[17]. For Damasio, grasping the biological underpinnings of emotions and the cultural mind is not merely a reductionist endeavor; rather it paves the way for a new vision of humanism grounded in biology.

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[16] Think, for example, of the Lovelock (1979) position: "Kepler, Boyle or Leibniz were not inconsiderable advocates of a conception of nature as a balanced totality and unity, whose posterity we recognize in Buffon, Alexander von Humboldt and Darwin. Probably, this filiation has in turn contributed in no small measure to the teleological orientations of a certain contemporary biology, marked by an almost providential vision of the adaptation of organisms or the homeostasis of ecosystems" (Descola, 2005, p. 86).

[17] As in Adolf Portmann, one of the founders of philosophical anthropology, and Philipphe Descola, theorist of a monistic anthropology, Damasio theorises a new form of humanism rooted in biology – called upon to deal with more than *anthropos* – after the one based on the great division has definitively waned. (Descola, 2005; Portmann, 1969).

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