Numanities - Arts and Humanities in Progress 16

Roberto Marchesini
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Critical Ethology and Post-Anthropocentric Ethics

Beyond the Separation between Humanities and Life Sciences

Springer

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Volume 16

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ISSN 2510-442X ISSN 2510-4438 (electronic)
Numanities - Arts and Humanities in Progress
ISBN 978-3-030-74202-7 ISBN 978-3-030-74203-4 (eBook)
https://doi.org/10.1007/978-3-030-74203-4

This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Introduction

This volume offers an updated analysis and discussion on some of the most debated theoretical, epistemological, social and ethical issues within that very young field of study called "philosophy of ethology" or "philosophical ethology" (Lestel 2001; Lestel, Brunois, Gaunet 2006; Chrulew 2014; Buchanan, Bussolini, Chrulew 2014; Bussolini 2016; Marchesini 2016; Celentano 2018).

As its name suggests, this field of investigation compares philosophical reflection and ethological research into the questions raised by one of the most important scientific breakthroughs of our times: the discovery that, besides Man, many other animals can think, invent new techniques, develop cultural traditions and manifest individual differences in their aesthetic sensibility and expressive ability.

This book has three main aims:

- to contribute to the development of a philosophy of ethology and an ethical reflection based on a both post-genocentric and post-anthropocentric approach;
- to promote an overcoming of the traditional division between life sciences and humanities;
- to attempt a critical (and self-critical) integration of these two scientific traditions.

We believe it is necessary to develop ethology as a comparative study of the behaviour of all the living species (not just animals), aimed at fully overcoming the mechanistic and predominantly nativist setting of classical ethology and develop a critical approach to the study of psychic and cultural phenomena that could archive the prejudices of anthropocentrism and anthropodenial (de Waal 2016) and open up to a horizontal (non-hierarchical) comparison between human minds and cultures and all other, past or present animal minds and cultures.

The first part of the book which presents three essays by Celentano, illustrates this approach by likening it to the historical progression from Darwinian proto-ethology to cognitive and cultural ethology, and from neo-Darwinian formulations of a theory of evolution to its most recent renditions in light of the discovery of epigenetic inheritance and the birth of Evolutionary Developmental (Evo-Devo) Biology.

The first chapter reconstructs the process which led from Darwin's revolution to contemporary ethology, emphasizing the topicality and fruitfulness of the pluralistic

approach to the explanation of the animal and human mental evolution that Darwin assumed from the 1870s.

The second chapter focuses on the analysis of the affinities and bonds between the two different attempts to reformulate Darwinian theory in a "cognitive" way which have profoundly renewed evolutionary studies: Evolutionary Epistemology, first promoted by ethologist Konrad Lorenz in the 1970s, and Extended Synthesis, or the post-genocentric synthesis of Darwinism, towards which a large part of contemporary evolutionary biology is converging. An ongoing synthesis to which, in the last three decades, authoritative members of the Konrad Lorenz Institute for Evolution and Cognition Research (Klosterneuburg—Austria), such as Werner Callebaut, Gerd Müller and Massimo Pigliucci have made important contributions.

The third chapter illustrates the projects of *Interspecific Cultural Studies*: a metadisciplinary area which aims to contribute to a self-critical refoundation of both humanities and behavioural sciences, as well as to a new organization of university and post-university education and basic and applied research enabling it to offer the development of skills that are transversal to the traditional bipartition between human and life sciences. The first goal of Interspecific Cultural Studies is in fact to train generations of scholars capable of profoundly renewing the Humanities, critically inserting the brief history of human cultures into the much longer history of animal ones, which has endured for hundreds of millions of years (differentiated cultural traditions are in fact already observable in bony fish that have existed for more than 400 million years). In various respects, this is a project very close to the radical self-reform of humanities proposed in Martinelli's *Manifesto of Numanities (*Martinelli 2016) that, precisely because of this affinity, in our opinion finds its ideal location, and a precious source of comparison, in this Springer editorial series specifically dedicated to the Numanities, to which we are very proud to contribute.

The second part of the book entitled *Knowledge, Subjectivity, and Intelligence in Non-Human Animals*, presents three essays by Marchesini and tries to clarify the methods and contents of a holistic and post-mechanistic approach to the study and understanding of animal minds. The chapter delves into three deep fundamental aspects of animal life: (a) learning process, (b) subjectivity and (c) intelligence. The phenomenon of learning represents one of the most important processes of behavioural identity development in animals. Starting from the mid-nineteenth century, there have been many explicative proposals and models aimed at describing this process. Nowadays we are faced with a number of models, often forcedly juxtaposed even when incompatible: this was the case with associationist, psychoenergetic and cognitive models. The question is whether this abundance could be replaced with a unique model able to subsume the different occurrences and resolve the inconsistencies still present in all these explanations. As a second aspect, this chapter wants to show how the issue of animal subjectivity has been addressed in many ways over time: the different explanations had come from the anthropomorphic assimilative interpretation, supporting a projective view by which animality is just a declination of being human, to the break operated by René Descartes, who assimilated the animal condition to mere *res extensa*, thereby annihilating any hint of its subjectivity and depicting the non-human as a mass of deterministic mechanisms. I would

like to deal with the issue of animal subjectivity avoiding any recourse to a mere projection through which conscience is considered the decisive element that causes subjectivity to emerge out of nothing, like a rabbit out of the hat. Finally, we come to intelligence: despite its multiple possible interpretations, Western tradition has restricted the act of knowing to a principle of disjunction from corporeality, in a sort of detachment and contemplation of the world ascribable to the res cogitans and to the exclusion of mere fruition. Knowledge, understood as a neutral and objectivizing act, as something neither participatory nor emerging from the relational predicate, has engendered a diaspora between the knowing and the known: a dichotomy that reflects in a fractal producing other dichotomies in turn. The author tries to develop the last path described here, referring to Lorenz's view on the adherence of cognitive tools to the configuration of reality. The issue is also to try to understand how to reconcile an interpretation based on an animal being's subjectivity, full of perspective protagonism in any interaction with the world, with an epistemological framework that accounts for the phylogenetic declination as a given dimension.

The third part of the book discusses the contributions of ethological research and behavioural epigenetics to furthering the exploration of two topics that the authors consider equally important for contemporary ethical debate. One is the *critique of the anthropocentric moral tradition* by contemporary anti-speciesist ethics; the other is the refutation of the theoretical presuppositions of *behavioural, social and moral determinism* re-proposed in recent years by leading exponents of evolutionary psychology, now sanctioned by the developments of the research on epigenetic inheritance.

The aims to which the studies here presented are oriented imply, in fact, together with the effort to understand both human and non-human minds and cultures in a non-anthropocentric and non-ideological way, the commitment to defend their autonomous existence. In other words, the comparative study of human and non-human animal traditions and forms of thought requires, as one of its indispensable correlates, *an active participation in the struggle to protect them and the natural environments in which they have evolved from the destruction and extinction* that many of them are undergoing due to anthropic impact and dominant destructive forms of economic exploitation of both human communities and natural resources.

The essay opening this part (chapter 7), written by Celentano and entitled *Contributions of Ethology to the Birth of a Post-Anthropocentric Ethics*, documents the role that ethological research has played in promoting the birth of post-anthropocentric and anti-speciesist ethical movement taking on this fight. Therefore, this chapter highlights the historical and cultural link between two ongoing revolutions one scientific, introduced by ethology and one ethical, proper of current anti-speciesism.

The eighth chapter, written by Marchesini and entitled *A Re-evaluation of animal interests starting from a critique of Maslow's Pyramid*, shall demonstrate that understanding the subject of interest as an intentional entity is not enough to infer sentiency neither from welfare parameters nor Maslow's Pyramid, and compassion or sympathy are not even enough, interpreted in the etymological way of "being of the same dispositional feeling". In order to preserve the interests of the non-human animal as a subject, it is indispensable to: (1) accept the existentiality of him/her and avoid the

mechanicism of heritage; (2) carry out an empathic approach, that is the ability to reproduce a condition or an inclination different from ours, that requires a suspension of the anthropomorphism. It is possible to know the intentional dimension of non-human animals if we apply Darwin's criterion of adaptative resemblance and distinction. But in order to do that it is necessary to strengthen scientific knowledge and ethical reflection because neither approach explains how the interest subjectivity emerges.

The ninth and final chapter, written by Celentano and titled *Behavioral and Cultural Epigenetics. Social Biologisms Refuted by the Developments in Biology*, aims to clarify that the theoretical framework of the contemporary evolutionary biology, and the experimental evidence on which it is based, allows us to definitively refute and dismiss all approaches to the study of animal and human behaviour based on genetic determinism. In fact, much data accumulated over the past thirty years show that, in the course of phylogenesis, three kinds of selection, heredity and variation, respectively, *epigenetic, behavioural and cultural* ones operated alongside the slow processes of genetic variation, and much faster than it, in tight conjunction with environmental inputs.

As far as our species is concerned, this data shows that, as already understood by Darwin (Darwin 1871a), for a long time it has been human *social* history that has guided and shaped human biological history, not vice versa. The analysis proposed in this chapter shows that it is now anachronistic to hypothesize a "human nature" rigidly codified at the genetic level and substantially unchangeable in its fundamental mental and behavioural propensities, as some exponents of evolutionary psychology still do (Pinker 2005; Tibayrenc and Ayala 2016).

A large amount of experimental evidence in fact demonstrates that social context can, through experience and its epigenetic, behavioural and cultural inheritance, either inhibit or implement the cognitive potentials and behavioural attitudes of its members with effects that are transmitted from generation to generation.

In other words, we can finally *refute old and new social biologisms*, or ancient and re-emerging genetic determinisms, *with the tools of biology itself*.

The authors wish to conclude this introduction by expressing their deepest gratitude to Springer editions, to Dario Martinelli, director of the Numanities Arts and Humanities in Progress series, and to the scientific and editorial board of the series for having considered this fruit of their work worthy of publication.

Marco Celentano
Roberto Marchesini

References

Bjorklund, David and Pellegrini, Anthony. 2002. The origins of human nature: Evolutionary developmental psychology. Washington (DC): American Psychological Association.

Buchanan, Brett, Bussolini, Jeffrey, Chrulew, Matthew. 2014. General introduction: Philosophical ethology. *Angelaki. Journal of the Theoretical Humanities.* 19 (3): 1–3.

Bussolini, Jeffrey. 2016. The philosophical ethology of Roberto Marchesini. *Angelaki. Journal of the Theoretical Humanities*. 21 (1): 17–38.

Celentano, Marco. 2018. *Interspecific cultural convergences (ICC) and Interspecific cultural studies (ICS).* In Ceccarelli, David, Frezza, Giulia (eds.). *Predicatbility and the unpredictable*. Roma: CNR Edizioni.

Chrulew, Matthew. 2014. The philosophical ethology of Dominique Lestel. *Angelaki. Journal of the Theoretical Humanities*. 19 (3): 17–44.

Darwin, Charles. 1871. *The descent of man.* London: John Murray.

de Waal, Frans, 2016. *Are we smart enough to know how smart animals are?* London: Granta.

Lestel, Dominique. 2001. *Les origines animales de la culture*. Paris: Flammarion.

Lestel, Dominique, Brunois, Florence, Gaunet, Florence. 2006. Towards an etho-ethnology and an ethno-ethology. *Social Sciences Information*. 45: 155–177.

Marchesini, Roberto. 2016. Philosophical ethology and animal subjectivity. *Angelaki. Journal of the Theoretical Humanities*. 21 (1): 237–252.

Tibayrenc, Michel and Ayala, Francisco (eds). 2016. *On Human Nature: Biology, Psychology, Ethics, Politics, and Religion. Amsterdam, Boston, Heidelberg, London, New York: Elsevier.*

Contents

Part I
Towards a Critical Re-Foundation of Cultural Studies

Chapter 1
From the Darwinian to the Ethological Revolutions: An Ongoing Process

Marco Celentano

Abstract Like Darwin's works and theories, the studies and discoveries produced by ethology (a research area of which the great naturalist was the first promoter) inspired not one, but *two* scientific revolutions. The second is still in progress. As with the *first Darwinian revolution*, some of the theoretical, social and ethical implications of the *first ethological revolution* have long been distorted, partly even by its own promoters. It has been arbitrarily used to support forms of behavioural determinism according to which all aspects of animal and human minds and activities are substantially regulated by hereditary mechanisms that are scarcely modifiable through experience, education, culture and socio-environmental stimuli. One of the goals of this book is to demonstrate that this form of ethological mechanicism and social biologism can now be refuted with the theoretical and methodological, empirical and experimental tools of biology and ethology themselves. To this aim the present chapter contributes through a critical review of the two Darwinian revolutions, of the first ethological revolution, and of some of their interpretations that had a wide echo. It also introduces an analysis of some aspects of the second, ongoing ethological revolution, and of contemporary evolutionary studies, which are further examined in the following sections of the book, showing that developments in both these areas are converging towards a post-mechanistic model of animal behaviour and a post-genocentric explanation of evolutionary processes. In this chapter I try to show that, with respect to these developments, the *Darwinism of Darwin* is demonstrating a fruitfulness, a resilience, and an attitude to frame phenomena that at the time of its formulation were unknown, far superior to that of all the "*neo-Darwinian*" models which predominated in evolutionary biology after Darwin. That is to say that, at least since August Weismann's *Germinal Selection* (Weismann 1896), to Jacques Monod's *Le hasard et la nécessité* (Monod 1970), Darwin's Darwinism, although focused on the concept of natural selection, implied an explanatory pluralism and a series of (albeit critical and cautious) openings to the possibility of "Lamarckian" forms of inheritance rejected by subsequent neo-Darwinist models in defence of a supposed Darwinian "orthodoxy" only to be once again re-evaluated by contemporary epigenetics. In the following pages I attempt to summarize the outcomes both of the two Darwinian and the first ethological revolutions, highlighting their nature as flows of ensuing scientific-cultural events, the implications of which are in many respects still at stake, open-ended and ongoing. The scientific revolutions discussed

R. Marchesini and M. Celentano, *Critical Ethology and Post-Anthropocentric Ethics*,
Numanities - Arts and Humanities in Progress 16,
https://doi.org/10.1007/978-3-030-74203-4_1

in these pages are in fact only mere stages of a long, single, internally conflicting and composite revolutionary process that leads from Darwin's proto-ethology to contemporary ethology.

1.1 Introduction

Over the last sixty years many scholars and disseminators have referred to the concept of a "Darwinian revolution", but Patrick Tort, one of the most authoritative historians of Darwin and Darwinism has since the 1980s pointed out that it is more appropriate to talk about *not one, but two Darwinian revolutions.*[1]

In this essay I welcome Tort's suggestion and draw on his extensive reconstruction of Darwin's research path and the social processes that influenced his reception. Nevertheless, I will advance some criticisms of Tort's interpretation of the "second Darwinian revolution" and the risks of an *idealization* or a "monumental" reconstruction of the "*civilization*" process that in my opinion, it presents.

Like any other scientist and human being, Charles Darwin was of course not immune to the ideological conditioning and social prejudices of his time and social environment. Thus his theories are not lacking in limits, inadequacies, fluctuations or ambiguities.

However, among his contemporaries disseminating and renewing "transformism", he was at once the most sober, radical, coherent and far-sighted. A man inclined to subscribe to an optimistic faith in progress typical of his time, but also one of the most lucid scholars in glimpsing crucial issues arising from the social and theoretical implications of the genealogical perspective.

In a nutshell, as Karl Marx wrote to Ferdinand Lassalle in 1861, the first Darwinian revolution, consisting in the detailed exposition of the theory of natural selection contained in *The Origin of Species*, gave "a mortal blow to teleology" (Marx in Marx and Engels 1975–2004, 41: 246–247), making explainable the origin of all the living species without resorting to finalistic principles.

With his second revolution, of which the works *The Descent of Man* (1871) and *The Expression of Emotions in Man and Animals* (1872) were the heralds, Darwin obtained at least three important results:

[1] Curiously, the wide diffusion of the concept of a "Darwinian revolution", recorded in the last sixty years, took its cue in 1959 from the title of a biography of Darwin, written by the historian Gertrude Himmelfarb (1959), which radically opposed to the theory of natural selection and tried to refute it. Since then, the formula "Darwinian revolution" has been taken up by numerous scholars and advisers, appearing in the titles of many volumes and articles, predominantly but not exclusively aimed at emphasizing the scientific relevance and the still current aspects of Darwin's theories and studies. I will limit myself to recall: Michael Ruse (1979), Patrick Tort (1983, 1992); *Journal of the History of Biology*, 38 (1) 2005, entirely devoted to this theme with contributions pro and against Darwin written by many well-known scholars, and David Sloan Wilson (2019).

- the abolishment of the traditional metaphysical man-animal dichotomy, having shown that almost all mental capacities for millennia considered exclusive to man are also widespread in other animal species;
- the foundation of a new field of research: the comparative study of animal expression, behaviours and abilities, which also includes the human species, and their evolutionary history;
- a critique and an overcoming of the *ethological determinism*, improperly referred to as a "social Darwinism" (Tort 1999), which had become very widespread in the previous decade.[2] Darwin rejected the Spencerian belief that human moral and social traditions were the product of a natural selection that only preserves what is really "useful", proposing the alternative hypothesis that, in the history of human customs, *education and social control* have supplanted and replaced "natural selection", becoming largely autonomous from it (Darwin 1871: 404).

Of course, both Darwinian revolutionary turns left some problems open. Undoubtedly, however, as a whole, Darwin's work opened a new phase in Western thought, helping to demolish prejudices rooted for centuries and, in some cases, millennia.

In fact, the Darwinian revolutions produced the effect of reconnecting humans to other animals and to their natural history, introducing a change no less radical than that caused by the Galilean revolution, reconnecting Earth and sky.

Daughters of the Darwinian ones have been the two ethological revolutions that crossed the twentieth century:

- The first goes from the birth of classical ethology founded in the 1930s to human and cognitive ethology, which arose in the Sixties and Seventies.
- The second, still in progress, is the transition to a post-genocentric and post-anthropocentric turning point that in the last three decades has led to a new "philosophy of ethology", to important developments in cultural and cognitive ethology, and to the emergence of new areas of research such as behavioural and cultural epigenetics.

As is documented in the concluding essay of this volume, these changes, inherent to behavioural sciences, converge with the concurrent developments in evolutionary studies. Both indeed move towards a vision of evolution that is not only characterized by external selection and genetic mutations, but also by an organisms' active search for more suitable living conditions in driven by epigenetic, behavioural and cultural inheritance forces of evolutionary processes.

Both in evolutionary and ethological studies, evolution is today conceived as a selective process in which organisms are protagonists, and animals are considered,

[2]For a critical approach to "social Darwinism" and an analysis of its multifaceted character, see: La Vergata (1999, 2001, 2005). La Vergata shows how social Darwinism became a pseudo-scientific justification of different ideological positions. Among these, a prevalence was granted to those supporting the "elimination of the unfit", providing biologistic and pseudo-naturalistic justifications to political cynicism and to economic exploitation of men and nature, but other brands of social Darwinism existed, such as "a liberalist Social Darwinism, a statist-conservative one, a militaristic one, and then one pacifist, one socialist, one anarchist" (La Vergata 2005: 21).

not as Cartesian "machines" or Dawkinsian genetic "robots", but as sentient and intelligent beings who learn from experiences, transmit them, and actively transform their environments, orienting their ontogenetic and phylogenetic history.

The scientific revolutions discussed in these pages are actually stages of one, ongoing process: a single, long, revolution, internally conflicting and composite like any revolutionary process.

Developments are ongoing because of the immense scope of the yet to be studied phenomena concerned and the ethical and social implications they bring about, too. In fact, we now have a possibility that was previously not available: conducting an empirical, experimental, theoretical and historical *refutation of both anthropocentrism and gene-centrism*, using instruments offered by developments in the very same biological and behavioural sciences.

While we discover phenomena unsuspected until a few decades ago, such as the existence of millenary and/or secular cultural traditions in other species,[3] or the complexity that animal thought can reach, we also live in an age characterized by the daily devastation of ecosystems in which all wild animal species live perpetrated by an anthropic development guided by a single logic: that of immediate profit. Enormous industrial apparatuses linked to intensive breeding of animals for meat production significantly contribute to pollution, foolish consumption and environmental catastrophes. These phenomena thus pose new important ethical, social and ecological challenges.

As shown in greater detail in the following essays of this volume, these are historical passages that call upon both human and natural sciences to undertake paths of critical re-foundation of their own educational and research methods, calling for epochal changes overcoming the traditional bipartition between humanities and life sciences, creating scientific and professional training courses offering skills that are transversal to these two blocks.

1.2 Darwinian Revolutions and Their Emancipatory Effects

At the end of *The Origin of Species*, Darwin wrote: "When the views entertained in this volume on the origin of species, or when analogous views are generally admitted,

[3] As already clarified in the third chapter, various sites and finds, discovered in the last two decades, attest to the existence of very ancient animal traditions. In 2007, in Côte d'Ivoire, a coconut crushing site that had been used by local chimpanzee populations for no less than 4300 years was discovered (Mercader et al. 2007). The use of stone tools has also been observed in some anthropoid monkeys and, in 2016, a site for crushing cashew nuts, used by local communities of striped cebi (Sapajus libidinosus) for over 700 years was found in Brazil, in the National Park of Serra da Capivara, (Haslam et al. 2016). Moreover, in 2014, an article by Catherine Hobaiter and her collaborators, published in PLoS Biology, for the first time documented a phenomenon of transmission of a cultural innovation consisting in the invention of a sponge made with leaves and mosses among a group of wild chimpanzees (Hobaiter et al. 2014).

we can dimly foresee that there will be a considerable revolution in natural history" (Darwin 1859: 484).

He was well aware that his revolution in natural history would trigger a domino effect in the whole domain of sciences, challenging beliefs rooted in a millenarian tradition and forcing a drastic redefinition of the distinction on which the whole Western system of knowledge was based: that between *natural sciences and humanities*.

Darwin was of course not the first to refute the belief in the fixity of species, to conceive living beings as products of an historical process and to affirm that man descends from other animals. The same road had already been taken by Diderot, Buffon, Saint Hilaire, Erasmus Darwin and other, more or less renowned scholars since the seventeenth century. Thanks to Lamark's theory and Spencer's from the 1850s, an evolutionary perspective was rather common for the first decades of the nineteenth century. Furthermore, in parallel with Darwin, Wallace had also independently conceived a theory of natural selection.

Darwin's approach was, however, unlike other any previous evolutionary models. His was immediately perceived as subversive by the cultivated classes of that time. Other evolutionists spoke of "vital forces" or of an "essential irreducibility" of human mind to its material components. Herbert Spencer, the most notorious among them, hypothesized an allegedly necessary "law of progress", operating at each and every level of reality (Spencer 1857). "A panoply of concepts that traditional Christianity could accept in compromise, for they permitted a Christian God to work by Evolution instead of Creation" (Gould 1977: 24–25). In fact, such models, although rejecting some traditional religious dogmas such as the fixity of the species and the theory of "separate creations", still re-launched and strengthened other important aspects of the Western traditions, among which the teleological (and at times explicitly theological) approach to the studying of natural phenomena and the anthropocentrism re-launched by the image of Man as the maximum height of evolution. The difficulty to attempt, in this historical phase, a passage from models that were clearly suspended half-way between innovation and tradition to a rigorous genealogical approach is testified by the fact that Alfred Russel Wallace himself, the joint discoverer of natural selection with Darwin, made ample concessions to Christian dogmatism, describing the human mind as "the only divine contribution to the history of life", and human evolution as a process led by a "superior intelligence" (Wallace 1870: 360).

Darwin took a firm position against him on this ground, although he himself had not been completely immune to some lexical concessions to the religious orthodoxy. In the final chapter of *The Origin*, for example, there is a reference to the moment when "the first creature […] was created" (Darwin 1859: 488), though the Creator's possible role is confined to the appearance of the earlier living forms, in direct opposition to the traditional hypothesis of the "separate creations".[4]

[4]One of the explicit goals set by Darwin in *The Origin of Species* was to demonstrate the unsustainability of the dogma of separate creations, i.e. of the conviction, based on biblical sources but debated at length in the sixteenth and seventeenth century, that each living species had been called into being by God through a separate act of creation. Such a doctrine is of course irreconcilable

However, aside from this terminological concession to creationism in relation to *the origin of life on Earth*, a topic that was not covered in the work, Darwin's theory explained the existence of all present species, including humans, as deriving from one or a few common progenitors through a process of selection and conservation of the variants which were most adaptable to the environment. The strength and weakness, simplicity and intricateness of the Darwinian concept of "natural selection" derives precisely from this fact: it is presented by the author as a principle that is both *negative*, i.e., privative, and positive, i.e., cumulative., thus being a principle capable of giving rise to new useful solutions. Natural selection is the gradual elimination of the less suitable, but also the "*accumulation and strengthening of advantageous variations*" (La Vergata 2001: 208).

In short Darwin's theory represented an explanatory model that, for the first time, did not resort to making any allowances for the intervention of divine forces or mysterious progressive tendencies in inherent biological and human evolution.

Exactly for this reason, as Marx and Engels pointed just a few months after the publication of *The Origin*, Darwin's approach inflicted "a fatal blow to teleology" (Marx in Marx and Engels 1975–2004, 41: 246–247).[5]

As Friedrich Nietzsche (1868) and Ernst Haeckel (1868) reiterated a few years later, Darwin, with his theory of "natural selection", had invalidated the assertion made by Kant in section 75 of the *Critique of Judgment*, according to which: "This is so certain that we can boldly say that it would be absurd for humans even to make such an attempt or to hope that there may yet arise a Newton who could make comprehensible even the generation of a blade of grass according to natural laws that no intention has ordered" (Kant 1790 [2005]: 185). In other words, Darwin paved the way to a radical *secularization* of the problem of the descent of living species and man. Human history was reunited with animal history, producing a paradigmatic change no less dramatic than the Copernican revolution which had reunited sky and Earth.

After Darwin, not only the traditional (implicitly or explicitly) theological and teleological presuppositions of natural sciences, but also the anthropocentric prejudices on which human sciences had been founded for millennia, and the whole traditional philosophical field, from the theory of knowledge to ethics, was profoundly and radically problematized. The investigation of man's "spiritual" activities, emotions, feeling and knowledge, as well as of human expressiveness and language, took a different direction from that moment onwards. Without Darwin, many milestones of Western culture would have simply not existed: from Nietzsche and Freud's revolutionary approaches to the exploration of the subconscious and the problem of "discontents of civilization", to the birth of new research fields like classical, human,

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with Darwin's genealogical perspective, according to which all existing species derive from few common progenitors.

[5]The passage is taken from a letter written by Marx to Lassalle (January 1, 1861). Writing on the same topic to Engels, a few days earlier (December 19, 1860) Marx had noted: "Although it is developed in a crude English style, here is the book that contains the natural-history foundation of our point of view" (Marx in Marx and Engels 1975–2004, 41: 231–232).

cognitive and cultural ethology with the inclusion of non-human animals, or a part of them, among subjects considered to have an intrinsic ethical value.

For his part Darwin himself, in the course of his entire scientific activity, assigned a central place to the problem of the origin of animal and human "mental faculties", trying to construct a genealogical theory to explain the processes leading from the appearance of the earliest organisms to the development of the human species with their species-specific features.

Still as a young naturalist, since 1838, he conceived in his Notebooks (Darwin *Posthumous* 2009) the ambitious project of a theory capable of explaining both the origins of the *anatomical*, *morphological* and *physiological* features of living beings and the appearance and transformations of the *behavioural* and *mental* animal and human traits, freeing these research domains from theology and teleology.[6] This polemic motivation was at the origin of an extensive research project, which he later abandoned, but continued to provide a general framework for his later studies.

While studies of morphological, anatomical and functional differentiation between species were integrated twenty years later in *The Origin of Species*, the behavioural parts were incorporated in Chapters 3, 4, 5 and 21 of *The Descent of Man* (Darwin 1871) and in *The Expression of Emotions in Man and Animals* (Darwin 1872), these are now rightly considered forerunner texts of modern ethology. At least from a general theoretical perspective, it is with these studies that Darwin completed his revolutionary enterprise, obtaining an extremely shocking triple effect for the culture of the time, proving that:

(a) it is indeed possible to explain the evolution of living organisms, from its first steps to the appearance of man without resorting to any extra-natural, teleological, or aprioristic factor;
(b) the so-called "superior" abilities that were traditionally exclusively attributed to man are at least in part found in other animals and depend on organs and apparatuses that we share with many other species.
(c) the theory of natural selection does not imply that human social behavior is determined by hereditary factors in a non-modifiable way, because it is fully compatible with the finding that, in human history, social environment and education have gradually become more powerful selective factors than external environmental selection.

1.3 Social Darwinism as a "Conservative Revolution"

> He who proclaims a new idea never gets away with it. Moreover, if this idea is the Darwinian doctrine of evolution, which, since the second half of the nineteenth century has become a

[6] In a letter to Wallace in 1867 Darwin wrote: "I want anyhow to upset [the] idea […] that certain muscles have been given to man solely that he can reveal to other men his feelings. I want to try & show how expressions have arisen" (Ch. Darwin to A.R. Wallace, [12–17] March [1867], in Burkhardt and Secord 2005: 141).

> field for recurring polemics (the periodical character of which calls for deeper analysis) for the simple fact that it challenged a body of dominant conceptions, one faces a twofold risk: either having it repressed it in its entirety, or having it reabsorbed within that very system of representations it had intended to overcome and demolish. (Tort 2000: 19)[7]

How was the critical and revolutionary potential of Darwinian theory channeled and controlled? In which of the ideological trends associated to that period was the reception of Darwinism, at least partially, reabsorbed? On which *internal* elements of the theory did such attempts leverage and which explicit Darwinian positions instead had to be arbitrarily twisted or misrepresented in order to achieve these results?

There is no doubt that some theoretical elements that Darwin assumed in *The Origin of Species* derived from the classics of liberal and liberalist thought. The concept of evolution as a gradual ascending progress, very appealing during the Victorian age and already asserted as a scientific certainty by Lamarck and Spencer, was certainly present, though restrained in Darwin's work. Nevertheless, it is honoured in the concluding pages of the *The Origin of Species* where Darwin wrote: "Hence we may look with some confidence to a secure future of equally inappreciable length. And as natural selection works solely by and for the good of each being, all corporeal and mental endowments will tend to progress towards perfection" (Darwin 1859: 489). But most of all, from a classic of the late seventeenth century liberalist literature, Malthus's *Essay on the Principle of Population* (Malthus 1798), Darwin drew a model which assumed an important role in his theory of natural selection: the model asserted that the human population, in the absence of obstacles, tends to increase more rapidly than the livelihoods it is able to produce, due to its geometrical increase (1–2–4–8–etc.), whereas the latter increased arithmetically (1–2–3–4–etc.). On the basis of some aspects already found in Malthus, Darwin extended this principle to all living species and concluded that an insufficiency of resources would ineluctably induce a "struggle for survival" among individuals of the same species and between antagonist species.

The observations made as a naturalist during his voyage on the Beagle, the studies on artificial selection carried out by livestock breeders and farmers and the works of Adam Smith, another classical exponent of liberal thought, all suggested to Darwin the idea that this struggle could gradually lead to a "selection of the fittest".[8] An idea also supported by Spencer: a differential reproduction, favourable, within a species or population, or between competing species, to the individuals or species best at exploiting their environmental conditions. A process of adaptation that led to a slow modification of the species and to the advent of all past and present species out of a limited number of simple, primordial ancestors.

The concepts of natural selection and struggle for existence presented by Darwin in 1859 undoubtedly indicated the liberal optimism about the regulatory effects of a "free" competition for the hoarding of resources that was so widespread during

[7] This and all the other quotations from essays that have not been translated into English, contained in this chapter, are my translations.

[8] Darwin adopted the expression "selection of the fittest" from Spencer, starting from the third edition of *The Origin*.

his times. It also favoured a utilitarian view of organisms, in which the behaviour that every living being has to follow, in order to remain alive, is "conceived as a variant of competitive, acquisitive, «egoistic» and calculating behavior that is attributed to «rationality» *tout court* by the liberal theorists of classical and neo-classical economics" (Cavazzini 2009: 5). However, Darwin's approach changed, at least in part in *The Descent of Man*, published eleven years and three months after *The Origin.*

In fact, in this work Darwin argued that the moral rules oriented to mutual solidarity and to support the weakest had evolved in human societies from forms of parental care and "social instincts" present in all the gregarious animals, to be later rewarded by natural selection having proved useful in strengthening the group (Darwin 1871: 166). In other words, according to the Darwin of 1871, in the most recent stages of human history, social selection has increasingly taken precedence over natural selection. It acts through the rules, traditions and educational processes and has become the main driving force of conservation or changes in customs and behaviour (Darwin 1871, I).

Assuming this hypothesis, Darwin distanced himself not only from Spencer, who had criticized public aid to the less well-off by justifying the system of competition between classes, nations, economic groups and individuals as an inescapable law of nature, but he also distanced himself from the positions of all the other main evolutionism exponents of the time, including his friend, T.H. Huxley who postulated a radical break between the moral sphere and the natural sphere. Neither did Darwin endorse the biologistic justifications of eugenics advanced by his cousin Galton (to which, however, especially in the final pages of *The Descent of Man*, Darwin made some concessions[9]), nor the racist and colonialist ideology of the German "mastiff" of Darwinism, E. Haeckel.

But despite this, the interpretation given by most of Darwin's contemporaries misunderstood the meaning and field of application of concepts such as "struggle for existence" and "selection of the fittest", arbitrarily extending their use to the analysis of human social history and economic reality. As Tort observes, "the mainframe of European, and later American, interpretations of Darwin after 1860 is always

[9]Although fiercely taking position against slavery and other forms of social discrimination and exploitation, Darwin was not entirely immune to eugenic concerns and not completely averse to the promotion of some positive and negative eugenic measures. For example, in chapter V of *The Descent of Man*, he writes: "We must bear without complaining the undoubtedly bad effects of the weak surviving and propagating their kind; but there appears to be at least one check in steady action, namely the weaker and inferior members of society not marrying so freely as the sound" (Darwin 1871, I: 169). He adds then on the same page, a few lines later, this consideration: "In all civilized countries man accumulates property and bequeaths it to his children. I know that they are children in the same country. But this is far from an unmixed evil; for the capital the arts could not progress; and it is chiefly through their power that the civilized races have extended, and now they are everywhere, their range, so to take the place of the lower races" (Darwin 1871, I: 169).

constant: themes such as competition, struggle for life, survival of the fittest, cumulative transmission of benefits, elimination of the less fit and negative selection are always underscored and applied to human societies" (Tort 2000: 19).

The model that inspired this so called "social Darwinism" was actually Spencer's evolutionary metaphysics and not Darwin's theory, anthropology or political convictions.[10]

At that time, the influence of this biologistic approach, which should be more correctly called "social Spencerism", became so pervasive, and widespread in so many different currents of thought and disciplinary fields that we could compare its success to a sort of "conservative revolution" *ante litteram*.[11] Through this process of interpretative distortion and theoretical flattening, Darwin's theories of natural selection were arbitrarily equated with the metaphysical principles of the gradual emergence of the fittest and of the gradual progress towards the best, which the Spencerism applied at a cosmological level.[12]

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[10]Of course, emphasizing the differences between Darwin and the social Darwinists (even those, such as Haeckel and Darwin's cousin Galton, who were closest to him) I do not intend to present Darwin as a man who was above all the prejudices of his time and cultural environment. As I tried to show, the mentality then dominant in Great Britain and Europe was variously reflected in the works of Darwin. However I find it necessary not to lose sight of the differences that allowed the Darwinian theory of descent with modifications, to impose itself against earlier contemporary and later genealogical models, for its superior scientific rigor, for the unprecedented attempt to do away with theology, metaphysics and teleology and, finally, for its internal consistence, its adherence to the observed phenomena and its explanatory power.

[11]As it is well known, between 1918 and 1932 the German culture was greatly influenced by some theorists explicitly referring to Hugo von Hoffmanstahl's idea of a "conservative revolution". They propounded the rediscovery of Germanic national traditions, an anti-modernism and an elitism of a romantic brand, keen on theories of racial discrimination, and the exaltation of the heroic and tragic element of life. Among the best-known exponents of this wave were the philosopher O. Spengler and the philosopher/writer E. Jünger. Culturally close to the ideologies of part of the nascent Nazi regime ideology, with which they initially collaborated, the main representatives of the "conservative revolution" remained marginal after Hitler's advent. They were close to some aspects of the theories of the fathers of "conservative revolution" and to other intellectuals, such as C. Schmitt, A. Moeller van den Bruck, M. Heidegger, Th. Mann, W. Sombart, M. Scheler and the philosopher-psychologist L. Klages.

[12]In the books *Progress, Its Law and Cause* (1857) and *A System of Synthetic Philosophy: First Principles* (1862), Herbert Spencer had theorized the existence of an evolutionary "law" of the "selection of the fittest", or "law of progress", operating as a universal principle at all levels of reality: cosmic, biological, social and moral. In fact, according to the author, evolution can gradually originate a growing amount of "happiness", and this "law" acts identically both in nature and in human societies. Economic and social differences, as the differences in development among different cultures, are to be intended as the outcome of differential adaptability at an individual and group level. On these grounds, and following Malthus, Spencer fiercely criticized the "Law for the Poor", or the earliest forms of social assistance in Britain, as well as the religious practice of charity, specifically addressing the taxing of the rich in order to alleviate the sorrow of the poor; he interpreted them as "obstacles" to the survival of the fittest (Spencer 1887). According to Spencer, in fact, it is from the death of the "unfit" that Evolution receives its ascending character and those who survive must in any case "be the chosen of their generation" (Spencer 1887).

In this sense, natural selection suffered a fate analogous to that which, a few decades later, was to fall upon the Nietzschean theory of the "Wille zur Macht", distorted by the promoters of the so-called "conservative revolution", and later by Nazism, in an exaltation of nationalism, an apology of expansionist policies and a political anti-Semitism that were foreign to Nietzsche.

Apologists of this tendency were, together with Herbert Spencer, a large number of European and American epigones of his approach (notable for his radicalization of the Spencerian doctrine was William Graham Sumner), according to whom the criterion of *laissez faire* should have ruled all aspects of social life and also provided a model for governmental policies. They believed, in fact, that only a free competition of forces would have led to a gradual elimination of the "unfittest" and to a world in constant progress towards the better. The Darwinian "struggle for existence" in which Kropotkin rightly saw both co-operation and competition among individuals and species, was transformed by this radically reductionist interpretation into an equivalent of Hobbes' "*bellum omnium contra omnes*".

Patrick Tort rightly emphasized the fact that Darwin, with his second revolution, distanced himself from Spencerism and various other forms of "social Darwinism" which had begun to spread after 1959. In fact, Darwin makes it clear in this work that, in his opinion, since ancient times and then in an increasingly incisive way in modern ones, behavioural, cognitive, social and "moral" human propensities have been conditioned and oriented *by a social selection and not by the natural one*, by "education" and social control, not by hereditary factors.

As Tort reiterates, from this point of view, Darwin's anthropology achieves almost a double revolutionary result: firstly, to abolish every metaphysical break between human and other animals, rejecting the hypothesis that to explain the origin of our mental and "moral" characteristics it is necessary to postulate the action of extra-natural factors, as Wallace stated. Secondly, to defend the hypothesis of a direct continuity between animal and human evolution, rejecting at the same time the hypothesis of a "simple continuity" between them, in which natural selection drives both natural and human history. This way Darwin arrived at an epistemological approach that recognized the (at least partial) autonomy of social development from natural selection, thus allowing credit for "the theoretical autonomy of the sciences of man and society without breaking the historical-material continuum between «nature» and «culture»" (Tort 2000: 53). It was a turning point, not less important than that marked by the theory of natural selection. However, in obedience to the historical "law" suggested by Tort (no great theoretical innovation escapes ideological distortion), even in this case the anti-deterministic revolution introduced by Darwin with *The Descent of Man* in some way paid its price to the ideological universe of the time.

1.4 Tort's Interpretation of the Second Darwinian Revolution

As I have already mentioned, in my opinion, the very important critical goal obtained by the second Darwinian revolution presents, already in its original exposition (Darwin 1871), and even in Tort's interpretation, the risks of a "monumental"[13] and idealized reconstruction of the process that they define as "*civilization*".

In a nutshell, Tort claims that according to the conclusions reached by Darwin in *Descent of Man*, "civilization" allowed human societies to gradually escape the laws of survival of the fittest, and therefore the eliminatory function carried out by natural selection in all the other species. In his opinion, in fact, within our species, social "instincts" and behaviours of mutual support had proven, in the long run, more advantageous than those exclusively based on mere individual competition and had consequently been favorably selected. Since then, those groups and individuals capable of promoting the values of "morality, "altruism" and solidarity in society were favoured. This allowed a transition towards a new social effect: assisting the weak instead of eliminating them. According to the thesis that Darwin exposes in chapter V and takes up in various passages of *The Descent of Man*, the attitude of mutual aid, already rooted in the social instincts of our ancestors, offered human communities that practiced it most *as an established custom* a greater cohesion and incisiveness and new opportunities in the struggle for survival.

According to this interpretation, the process of "civilization" (of which Western culture has been the epicentre and driving force) coincides with a gradual imposition of the tendency to extend solidarity to ever wider circles, and finally even beyond the borders of our species. This process created, according to Tort, the conditions for an overcoming or a "reversal" of natural selection, achieving the conditions to remove its eliminatory mechanism. In other words, "civilized" human societies benefitting from social solidarity have overcome the "struggle for existence" which requires the most disadvantaged to succumb, creating rules for coexistence in which "the weak are no longer eliminated (intending here all the individuals whose psychological, psychic or social condition would have condemned them to death under the hegemony of «natural» law, but are instead protected, cared for and defended" (Tort 2000: 25).

According to Tort it is in this reversal of the effects of natural selection that lies the key to human "civilization" and in its identification does "the key to Darwinian anthropology", which was bearer of a "second revolution", even more important than that introduced with *The Origin of Species*, because capable of escaping the traps of social biologism without failing in the rigor of the genealogical perspective.

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[13] I use here the adjective "monumental" in the sense that Nietzsche gave to it in the *II Untimely Meditation*, entitled *On the Advantage and Disadvantage of History for Life* (Nietzsche 1874). Nietzsche describes the monumental way of making history as a tendency to reconstruct the past, or determined epochs, in a celebratory way, removing all the aspects that do not give themselves to their idealization, and reducing the narration to a mythicization of some historical phases or characters in which "only a few embellished facts raise themselves up above, like islands" (Nietzsche 1874: Sect. 2. My translation).

Reaffirming that I consider Tort an undisputed master in his historical reconstruction and critical analysis of Darwinism, evolutionism, their reception and ideological implications, and I find his enhancement of the second Darwinian revolution useful and correct in numerous ways, I would like to summarize here some of the perplexities that his reconstruction of the "civilization" process arouses in me. First of all, I think it is appropriate to point out a gap, perhaps slight but not irrelevant, between what Darwin states in this regard in *The Descent of Man* and the generalizing form in which Tort sums up his position.

As a matter of fact, in the fifth section of *The Descent of Man*, Darwin stated that solidarity within the group has been one of the propulsive factors of human social evolution (Darwin 1871, I: 166) and has become a feature of "civilized" societies: "We civilized men, on the other hand, do our utmost to check the process of elimination; we build asylums for the imbecile, the maimed, and the sick; we institute poor-laws; and our medical men exert their utmost skill to save the life of every one to the last moment" (Darwin 1871, I: 168). However, he still recognizes that in many cases this form of solidarity has developed in co-evolution with the activity of war and the cultural dehumanization of other populations, as recent studies seem to confirm (Choi and Bowles 2007). In fact, Darwin stated that in a "primitive" situation "the tribes inhabiting adjacent districts are almost always at war with each other" and "the social instincts never extend to all the individuals of the same species" (Darwin 1871: 85). They are only addressed to community members and, according to the naturalist, for this very reason the greater internal cohesion and spirit of sacrifice of individuals, controlled by social mechanisms such as "praise and blame", offer more opportunities in competition with other communities, towards whose members no solidarity was expressed. It is thus not correct to assimilate this kind of behavior to a generic, and generally universal, principle of solidarity. But without a doubt, as Tort emphasizes, the interpretation of the civilization process as a gradual extension of the "circle of solidarity" is present in the Darwinian text. The great naturalist states, in the fourth chapter of the work, that feelings of sympathy and solidarity of human beings for their fellows have gradually grown "to extend to the men of all races, to the imbecile, the maimed, and other useless members of society, and finally to the lower animals,—so would the standard of his morality rise higher and higher" (Darwin 1871, I: 103).

According to Darwin, in the moral sphere "the elimination of the worst dispositions is always increasing" both in the "lower races" and in the "civilized nations" (Darwin 1871, I: 173). The main driving forces of this process overcoming the elimination of the less adapted have been and are, for him, "the approbation of our fellow-men—the strengthening of our sympathies by habit-example and imitation-reason-experience and even self-interest-instruction during youth, and religious feelings" (Darwin 1871, I: 173).

As I have already explained, it is precisely in this interpretation of the process of civilization that Tort identifies the turning point of Darwin's thought towards a "materialistic" and continuist, but at the same time non-mechanistic and non-biologistic conception of the relationship between organic and cultural evolution, natural and human social selection.