

Is Darwinism a Comprehensive Doctrine?

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Abstract: Part of the creationist claim against the exclusive teaching of evolutionary theory lies in the assumption that orthodox Darwinism is more than a value-free scientific theory but a comprehensive doctrine, much in line with the notion Rawls put forward in *Political Liberalism*. This paper explores how plausible that allegation is. Drawing on some influential contemporary voices in the debate between science and philosophy, I conclude that –whether right or wrong in its responses– Darwinism provides a suitable intellectual framework to address ultimate questions about the meaning of life and morality, thus deserving to be labelled as a comprehensive doctrine.

To this day, controversies surrounding the teaching of evolutionary theory and the attempt to introduce creationist alternatives in the science classroom are common in the US and elsewhere. Even though Darwin's main thesis about the origin of biodiversity on Earth is not scientifically disputed, it has become a hot political problem where evolution by natural selection is perceived by many religious people as fundamentally antithetical to their most cherished beliefs. One of the arguments put forward to attack the hegemony of Darwin in the biology curriculum is that current evolutionary theory can no longer be presented as a mere scientific postulate or a neutral fact about the world, but as a value-laden materialist ideology. Thereby young minds would be indoctrinated into a fully naturalistic worldview, a phenomena that –as critics point out– should be rejected in the name of the liberal principle of neutrality.

In this paper I will not assess whether evolutionary theory should be complemented or supplemented by creationist insights in the science curriculum. Instead, I will address the claim that Darwinism –or Neo-Darwinism, as it has become known after the incorporation of genetics to the original findings of Charles Darwin– may represent what John Rawls famously called a comprehensive doctrine. Much hinges on this. If evolutionary theory is

just but an isolated teaching about organic biological change through time, the claim at issue should be thoroughly dismissed. However, if it amounts to the kind of belief system that tries to answer ultimate questions about life, it would very hard to conceal its expansive ambitions. I shall argue that the latter is right: there is a good case to regard Neo-Darwinism as a comprehensive doctrine in the Rawlsian sense.

I will proceed as follows. First of all, I will offer a brief review of the creationist's argument that evolutionary theory soars beyond the scientific camp, a claim that has been endorsed by prominent biologists and philosophers of science. In section II, I will explore the Rawlsian notion of comprehensive doctrine, delivering some examples that could be useful to test, later on, whether Neo-Darwinism qualifies as one. Then I move to explore two structural elements that may allow us to think of the Darwinian perspective as a plausible standpoint to answer ultimate questions: the meaning of human life (section III) and the sources of morality (section IV). Finally, in section V, I contrast the implications of the evolutionary paradigm with other philosophical accounts and doctrines. The aim is to show that Neo-Darwinism can be linked to them in a conversation between equals.

I

Before beginning, some conceptual clarifications are due. Darwinism may mean different things to different ears. Here, Darwinism is first and foremost a theory that explains the origin of every single organism that has ever inhabited the Earth, including human beings, of course. It could be divided into two parts. The first acknowledges that life forms have evolved through eons of time, and that they are all related to a common ancestor. Life is just but an incredibly huge tree of life. This is what we call the *fact* of evolution, and there are very few people willing to dispute it¹. It is very well-established fact, as the philosopher of science Michael Ruse adds, “No less than that Henry VIII's daughter was Queen of England, and that a heart beats within my breast” (1998: 4). The second part is Darwin's definitive contribution: that the whole process of descent with modification is chiefly caused by a mechanism dubbed by him as natural selection². In turn, this mechanism operates at two levels: first, random variation arises in the genetic material of individual

¹ Actually, only hard-line scriptural creationists in the Christian, Muslim and Jewish world reject the bare fact of evolution. Most moderate adherents of these faiths have no troubles with it.

² Before Darwin, some people had a raw idea of evolutionary change. The main theory available was Lamarckism, which stated that organisms changed through their lives to adapt to their environment, and those acquired characteristics were passed on to their offspring.

organisms -without any relation with the organism's present needs- and this variation tends to be reflected at the phenotypical level; second, these variations are "selected" and retained by the bearer if they prove to be beneficial –most of them are not- in order to survive and reproduce in a given environment. So chance actually only operates in the first level; the second level works by non-random accumulation of changes. Taken together, these parts constitute what is commonly known as the theory of evolution, Darwinism or Neo-Darwinism. I will refer to all of them interchangeably.

As such, it is a remarkably successful and productive scientific theory, and it merits being accepted by any person as he or she would accept the germ theory of disease, gravity or the atomic theory. However, Darwinism is somewhat different. We have been told that scientific theories should communicate value-free knowledge. Evolutionary theory seems to challenge this rule. A whole belief system may be based on it. Or, at least, that is what the most influential religious spokesmen suggest: allegedly neutral evolutionary biology provides an intellectual point of departure for a comprehensive explanatory claim. Take former Pope Benedict XVI, who strongly denounced the expansive aims of the evolutionary paradigm³. According to his view –rather issued as a warning-, Neo-Darwinism has the potential to develop into an ambitious *philosophia universalis*, able to ground a whole "new ethos based on evolution" (Ratzinger, cited in Horn & Wiedenhofer 2008: 21). In this allegedly imperialistic facet, it would unavoidably compete with traditional theism. As the Austrian cardinal Christoph Schönborn plainly states, the "alternative *world view* [to Neo-Darwinism] is the belief in creation" (2008: 103)⁴. Both would be embodying our ancestral desire to address what the Theologian Paul Tillich famously called questions of *Ultimate Concern*.

Alvin Plantinga, possibly America's leading orthodox Protestant philosopher, has made a career advocating the same point. As evolutionary theory is naturalistic by default –it does

³ "Evolution has been exalted above and beyond its scientific content and made into an intellectual model that claims to explain the whole of reality and thus has become a sort of 'first philosophy'... we can speak here about a derivation of all reality from evolution, which believes that it can also account for knowledge, ethics, and religion in terms of the general scheme of evolution" (Ratzinger, cited in Horn & Wiedenhofer, 2007: 9).

⁴ Schönborn, an important voice within the Roman curia when it comes to the theological assessment of evolutionary theory, has blamed Darwin's "ideological component" as the main reason why the bitter discussion over evolution and creation continues "with undiminished emotional intensity" (Schönborn, 2007: 90). But it seems that it could not be otherwise: "The question of whether the universe and our planet Earth and we human beings owe our emergence to 'blind fate' or to 'an extremely wise and good plan' affects many people, because it involves questions that every human being asks himself sooner or later: 'Where do we come from?' 'Where are we going?' 'What is the meaning of life?'" (Schönborn, 2007: 86).

not need to invoke any supernatural force at any point- and naturalism serves as “a sort of total way of looking at ourselves and our world”, Neo-Darwinism leaves nothing outside of its purported jurisdiction⁵. Phillip Johnson, the so-called father of the Intelligent Design movement in the US, is bolder in his assessment: evolutionary theory would be an ideological artefact wielded by militant secularists to attract children into the naturalistic worldview, a fully partisan belief waging an intellectual war for cultural domination. Like Plantinga, Johnson believes that Neo-Darwinism works as a comprehensive system on a par with religious belief. But this is not because scientific evolution has been grafted with some metaphysical additions –as Plantinga thinks- but simply because it is too difficult to set an impermeable barrier between the science and the philosophy: orthodox Darwinism cannot help but to blur the boundaries and radiate out into other fields of knowledge⁶.

Though far from being a conventional theist himself, the expansive ambitions of the evolutionary paradigm have been strongly denounced by the distinguished moral and political philosopher Thomas Nagel. As the term ‘worldview’ could be too vague, Nagel refers to naturalistic Darwinism as a *Weltanschauung* to specify a comprehensive and speculative understanding of the world “that is reached by extrapolation from some of the discoveries of biology, chemistry and physics” and that “postulates a hierarchical relation among the subjects of these sciences, and the completeness in principle of an explanation of everything in the universe through their unification” (2012: 4). Nagel acknowledges that this is the mainstream view among scientists, but he thinks it ultimately fails. But we are not assessing whether Darwinism is the *true* doctrine. That is quite irrelevant for the purposes of political liberalism. We want to know whether evolutionary theory could be seen as a plausible *Weltanschauung*. Hence, as Nagel recognizes, the conflict between scientific naturalism and its non-materialist rivals is fundamentally a philosophical one. Hence he puts Neo-Darwinism and theism face to face in a symmetrical position: both all-encompassing doctrines struggling to make sense of the world; both comprehensive

⁵ “Naturalism plays many of the same roles as a religion. In particular, it gives answers to the great human questions: Is there such a person as God? How should we live? Can we look forward to life after death? What is our place in the universe? How are we related to other creatures? Naturalism gives answers here... As to our place in the grand scheme of things, we human beings are just another animal with a particular way of making a living. Naturalism isn’t clearly a religion; but since it plays some of the same roles as a religion, we could properly call it a *quasi*-religion” (Plantinga, 2011: x).

⁶ “Metaphysics and science are inseparably entangled in the blind watchmaker thesis. I think most theistic evolutionists accept as scientific the claim that natural selection performed the creating, but like to reject the accompanying metaphysical doctrine that the scientific understanding of evolution excludes design and purpose. The problem with this way of dividing things is that the metaphysical statement is no mere embellishment but the essential foundation for the scientific claim” (Johnson, 2010: 202).

worldviews saying that, at the ultimate level, “there is [just] one form of understanding” (Nagel, 2012: 22).

Thus evolutionary theory may well be a scientific theory, but it is not *just* a scientific theory. Historically, it has been seen by friends and foes as the factual foundation of a broader philosophical perspective covering a wide variety of issues and disciplines outside the dominion of natural sciences: metaphysics, ontology, epistemology, ethics, psychology, sociology, economics, sexual behaviour, politics, and even religious studies. Today it resembles a cultural catch-all secular current that addresses some of the most fundamental questions through Darwinian lenses. “In some very deep sense”, argues Ruse, “it is part of a movement to see human beings in a naturalistic fashion, this being set against more traditional attempts to locate human beings in a religious, a spiritual, a non-naturalistic world” (2009: 1). Whether we were created and specially designed by a loving God or else we are the mindless products of material accidents should matter, philosophically speaking. The most vocal Darwinists are of one mind in this regard. During the last few decades, the British ethologist Richard Dawkins has taken on the crusade of persuading anyone who will listen or read “not just that the Darwinian worldview *happens* to be true, but that it is the only known theory that *could*, in principle, solve the mystery of our existence” (1986: xiv). On the same vein, the philosopher Daniel Dennett has advocated the image of Darwinism as a *universal acid*, insofar “it eats through just about every traditional concept, and leaves in its wake a revolutionized worldview, with most of the old landmarks still recognizable, but transformed in fundamental ways” (1995: 63). In this sense, Dennett and the like proudly bear the charge of being straight reductionists: Darwinism promises to give a unified account of “just about everything in one magnificent vision... [Where] life and all its glories are thus united under a single perspective” (1995: 82, 144).

Perhaps nobody has done more to advance this reductionist view than the American biologist E. O. Wilson –the *greatest contemporary Darwinian* according to English philosopher John Gray- who has tirelessly argued that organic evolution is the key to understanding all the features of animal and human nature. Wilson has enthusiastically proposed that Darwinism should replace the role of religious myths, under the banner of scientific materialism. Very recently, he has made a powerful plea to base the humanities in the natural sciences, insofar the “scientific worldview is vastly larger. It encompasses the meaning of human existence- the general principles of the human condition, where the species fit in the Universe, and why it exists in the first place” (Wilson, 2014: 174). This

feeling is shared outside the biologists' community. For too long, says the cosmologist Lawrence Krauss, science was in charge of answering *how* the universe worked, whilst religion or philosophy were in charge of addressing *why* there is something rather than nothing. But at this point of cumulative knowledge there is no good reason for *that* division of labour. *Why* there is something rather than nothing is "first and foremost a question about the natural world, and so the appropriate place to try and resolve it, first and foremost, is with science" (Krauss, 2012: xiii). According to this view, science is legitimately and impenitently imperialistic. Neo-Darwinism is just science's more biting expression because it deals directly with us, human beings. Although they do suggest interesting philosophical reflections, no comprehensive doctrine seems to arise from the Big Bang Theory or quantum physics⁷.

This expansionist reading of evolutionary theory has been criticized from the inside. The influential palaeontologist and historian of science Stephen Jay Gould devoted the last years of his life to promoting a theoretical arrangement in which the *magisteria of science* and the *magisteria of religion* navigate in separate ways, without encountering each other in any conflictive manner. At any rate, Gould recalls, Darwin "argued that nature's factuality... could not resolve, or even specify, the existence or the character of God, the ultimate meaning of life, the proper foundations of morality, or any other question within the magisterium of religion" (2001: 192). But, at the same time, Gould came to acknowledge that Darwinism can profoundly affect humanity's self-image: "What, beyond our dangerous and unjustified arrogance, could ever permit us to contemplate such a preferred status for one species among the hundreds of millions that have graced the history of the planet?" (2001: 202). To be sure, Gould rejected what he called Darwinian Fundamentalism –the position that attributes to natural selection a ubiquitous and exclusive role as causal mechanism, ignoring any other non-selectionist and non-adaptationist data- but he was unmistakably aware of the "radical philosophical implications" of orthodox evolutionary theory and the damage they could inflict on traditional worldviews⁸.

⁷ So it shouldn't strike us as surprising, as the theoretical physicist and Nobel laureate Steven Weinberg acknowledges, "that it is reductionism in biology and the theory of evolution rather than the discoveries of physics and astronomy that continue to evoke the most intransigent opposition" (1992: 189).

⁸ "The radicalism of natural selection lies in its power to dethrone some of the deepest and most traditional comforts of Western thought, particularly the notion that nature's benevolence, order, and good design, with humans at a sensible summit of power and excellence, proves the existence of an omnipotent and benevolent creator who loves us most of all (the old-style theological version), or at least that nature has meaningful directions, and that humans fit into a sensible and predictable pattern regulating the totality (the modern and

A similar non-imperialistic attitude has been asserted by Jerry Coyne, one of the leading biology educators in the world. In a creditable effort to persuade U.S. citizens to accept the truth of Darwinism without asking them to abandon religion, Coyne has insisted that “evolution is simply a theory about the process and patterns of life’s diversification, not a grand philosophical scheme about the meaning of life” (2009: 245). Hence people that “want to find in the story of our origins a reason for our existence, and a sense of how to behave” (Coyne, 2009: 245) would be simply misguided. But, like Gould, Coyne cannot help but to contradict himself. He has elsewhere argued that, over history, science has delivered two crippling blows to humanity’s self-image. The first would be Galileo’s announcement that our planet was by no means the centre of the universe. The second, of course, would be Darwin’s *On the Origin of Species*. Here, according to Coyne, we witness the demolition of “the comforting notion that we are unique among all species--the supreme object of God's creation, and the only creature whose earthly travails could be cashed in for a comfortable afterlife” (2009a).

Therefore, if Darwinism is able to “dethrone some of the deepest and most traditional comforts of Western thought” (Gould dixit) and to “demolish the comforting notion that we are unique among all species” (Coyne dixit), can we maintain that it should be forcefully confined to the bookshelf of sterilized science? Evolutionary theory seems to have subversive properties which refuse to stand still. These features may be disturbing to some and liberating to others. But how intellectually seductive Darwinism appears to be as a comprehensive worldview is not at stake right now; what interests us here is whether it is philosophically neutral or –taking Charles Taylor’s phrase- it can be presented as a *fighting creed* under the rules of Rawlsian political liberalism. This succinct literature review nods to the affirmative.

II

In *Political Liberalism*, John Rawls argues that citizens should refrain themselves from offering sectarian reasons when discussing delicate political matters. Instead, they must honour their duty of civility which consists in offering public and accessible reasons to their fellow countrymen. When debating these constitutional essentials and other matters

more secular version). To these beliefs Darwinian natural selection presents the most contrary position imaginable” (Gould, 1997).

of basic justice, Rawls says that “knowledge and ways of reasoning... are to rest on the plain truths now widely accepted, or available, to citizens generally” (2005: 225). Plain truths would be general beliefs, forms of reasoning found in common sense, “and the methods and conclusions of science when these are not controversial” (2005: 224). Outside the realm of neutral plain truths, lies the territory of disputed and value-loaded doctrines.

Herein lays the dilemma: if evolutionary theory in its standard presentation belongs to the *noncontroversial conclusions of science*, Rawlsian-minded political theorists would include it among those plain truths that can be legitimately invoked by all in political discussions, perhaps even to solve the educational conundrum. On the contrary, if Darwinism remains politically, philosophically or morally controversial, it may not be upgraded to the status of plain truth in the Rawlsian sense. This is regardless of the objective fact that professional biologists could be absolutely right about how species came to be. That seems to be the fate of Darwin’s finding: it may be both a plain truth and a comprehensive doctrine.

Rawls did not provide a systematic account of what it takes to be regarded as a comprehensive doctrine, but just a number of guiding criteria and a set of scattered examples. We find the first clue in the introduction to *Political Liberalism*, where he sketches three big questions that humankind has been eager to answer for centuries: (i) a question about the nature of knowledge and its accessibility; (ii) a question about the foundations of the moral order; and (iii) whether our duties and obligations obey to external or internal motives. The underlying suggestion is that comprehensive doctrines are born in the attempt to answer these fundamental questions. Rawls recalls that theology tried to do it first. In each of these questions, the responses pointed to God. Later on, they received rather secular answers in the writings of David Hume and Immanuel Kant. Although not religious in the traditional sense, Rawls sees these beliefs as comprehensively liberal, as opposed to politically liberal (2005: xxvii). Unlike comprehensive doctrines –religious or non-religious- Rawlsian political liberalism does not take a stand toward these ultimate questions.

The distinction between political liberalism and a variety of comprehensive liberalisms is a crucial feature of Rawls’s account. To begin with, he makes it very clear that the former should not be confused with the sort of Enlightenment Liberalism that emphasizes the value of secular reason. The same goes for Kantianism and Utilitarianism, which are Rawls’s preferred examples of liberal comprehensive views: whereas Kant’s moral philosophy enthrones the ideal of autonomy as a supreme value for all personal and

societal life, the doctrine devised by Bentham and Sidgwick tries to do likewise with the principle of utility. The type of Millian liberalism would be also comprehensive insofar that it makes the value of individuality a benchmark for the assessment of a good life. The political conception does not need that kind of stringent philosophical commitment. Only comprehensive doctrines have such a wider scope⁹.

So comprehensive doctrines are more or less articulated worldviews that draw upon ultimate religious or philosophical convictions, as well as from metaphysical assumptions, moral outlooks and even epistemological intuitions, as Rawls sometimes indicates. They are integrated, intelligible and basically coherent belief systems that speak about our place in the universe, our perception of reality, the meaning and purpose of life, what we should value, and our ethical duties to others. Rawls assumes that all of us have a comprehensive view extending well beyond the domain of the political; though in many cases it will be fragmentary and incomplete. They belong to what he calls the background culture of civil society. To the extent that they are reasonable enough, from them we can work out an overlapping consensus to found the basic political agreement.

To show how this consensus may operate, Rawls presents a case with four distinctive comprehensive views: first, the (reasonable) religious view; then, of course, Kant's moral philosophy; next, predictably, he moves to Utilitarianism. Finally, Rawls includes what he calls a "comprehensive pluralist view" (2005: 170), which would represent a sort of value-pluralism that asserts that there are several moral values which may be equally correct and fundamental, and yet in conflict with each other. According to Rawls, none of these comprehensive doctrines is appropriate by itself to ground the political conception for a constitutional democracy. They have to work together seeking common ground.

But, as Rawls expressly recognizes, there are many other possible comprehensive views (2005: 170). In *Political Liberalism*, at least, it is possible to trace a few more. Explaining why governments cannot act to advance Catholicism or Protestantism, or any other religion, Rawls also discards that governments should "maximize the fulfilment of citizens' rational preferences, or wants (as in utilitarianism) or to advance human excellence, or the values of

⁹ According to Rawls, a doctrine is comprehensive "when it includes conceptions of what is of value in human life, and ideals of personal character, as well as ideals of friendship and of familial and associational relationships, and much else that is to inform our conduct, and in the limit of our life as a whole. A conception is fully comprehensive if it covers all recognized values and virtues within one rather precisely articulated system; whereas a conception is only partially comprehensive when it comprises a number of, but by no means all, non-political values and virtues and is rather loosely articulated. Many religious and philosophical doctrines aspire to be both general and comprehensive" (2005: 13)

perfection (as in perfectionism)” (2005: 179). In this sense, Perfectionism is treated as a particular view of the meaning, value and purpose of human life. As such, it corresponds to a comprehensive philosophical doctrine of the kind that is not affirmed by citizens generally, so its pursuit through basic institutions would give political society a sectarian character (Rawls, 2005: 180). Although it is not entirely clear what is the content of the perfectionist worldview, later on Rawls brings up the doctrines of Plato and Aristotle to describe what a “perfectionist state” might look like (2005: 195). As it were, Rawls had already put Perfectionism on an equal foot with Utilitarianism in an earlier paper¹⁰.

In the same paper, Rawls explains that “Idealism and Marxism in their various forms are also general and comprehensive” (1987: 4) so they cannot ground –at least not alone- the political conception of justice. This reference to Hegel and Marx is absent in *Political Liberalism*, but it is difficult to see how he could have changed his mind on the matter. So I will think of both as prototypical comprehensive non-religious and non-liberal worldviews, but compatible (while reasonable) with other comprehensive doctrines to give birth to the political consensus. In fact, Rawls thought of Hegel’s idealism and Marxism as much as symmetrical to religious views as to the kind of comprehensive liberalism of Kant or Mill (1987:6).

Back to *Political Liberalism*, Rawls makes an interesting distinction between what he calls classical republicanism, and the type of civic humanism fairly depicted in the nostalgic writings of Hannah Arendt and in what Benjamin Constant called the *liberties of the ancients*. While the former would not presuppose a comprehensive religious, philosophical, or moral doctrine, the latter would raise a fundamental objection to be adopted as basis for a political conception because it assumes that human essence can only be fulfilled through participation in political affairs¹¹.

Further on, Rawls makes use of Utilitarianism to compare it with Libertarianism, at least in the version delivered by Robert Nozick in *Anarchy, State and Utopia*. Although he does not

¹⁰ “A political conception of justice is different from many familiar moral doctrines, for these are widely understood as general and comprehensive views. Perfectionism and utilitarianism are clear examples, since the principles of perfection and utility are thought to apply to all kinds of subjects ranging from the conduct of individuals and personal relations to the organization of society as a whole, and even to the law of nations” (Rawls, 1987: 3).

¹¹ “For as a form of Aristotelianism, it is sometimes stated as the view that man is a social, even a political, animal whose essential nature is most fully realized in a democratic society in which there is widespread and vigorous participation in political life...taking part in democratic politics is seen as the privileged locus of the good life... From the standpoint of political liberalism, the objection to this comprehensive doctrine is the same as to all other doctrines” (Rawls, 2005: 206)

label libertarian theory literally as a comprehensive doctrine, Rawls refer to both Utilitarianism and Libertarianism as the kind of “completely general theory... that rejects the idea that special first principles are required for the basic structure” (Rawls, 2005: 262). Interestingly enough, in an attempt to be fully consistent with its notion of political liberalism, he puts his own ground-breaking theory of justice in the spotlight: “...Justice as Fairness is presented [in *A Theory of Justice*] as a comprehensive liberal doctrine (although the term comprehensive doctrine is not used in the book) in which all the members of its well-ordered society affirm the same doctrine” (Rawls, 2005: 489). Therefore, in the type of pluralistic society that Rawls is envisioning in *Political Liberalism*, the good-old Justice as Fairness would also represent just one philosophical point of view to be negotiated and eventually overlapped with other comprehensive alternatives, like Libertarianism.

Finally, in *The Idea of Public Reason Revisited*, Rawls makes an effort to distinguish his notion of public reason –essential to his political liberalism- from the idea of secular reason. The latter is thus depicted “as reasoning in terms of comprehensive non-religious doctrines” (Rawls, 2005: 452). Again, he does not specify the content of these secular doctrines, but he assumes that they “are on the level with religion and first philosophy” (Rawls, 2005: 452). Of course, we can imagine that Rawls is thinking about the kind of “Enlightenment Liberalism which historically attacked orthodox Christianity” (1993: 486). So these robustly secular philosophical doctrines would not provide public reasons.

To sum up, even considering that John Rawls does not give us a precise account of what it takes to be a –reasonably- comprehensive doctrine but indeed a “deliberately loose” one (2005: 59), we do have some framing coordinates and a set of useful examples. Comprehensive doctrines aim to provide a coherent vital perspective to handle pressing questions about value, meaning, knowledge, morals, social organization and ultimate reality. They sometimes go by the name of worldviews, ideologies, first philosophies, all-encompassing doctrines or conceptions of good¹². They may involve metaphysical positions, cosmic myths, meta-ethical intuitions, axiological commitments, epistemological theories, normative commandments, historical interpretations, political programs and even sacred truths. It is not necessary for these doctrines to have a stand in each and every of these fields in order to qualify as comprehensive. Most of them, I sense, are just

¹² As George Sher acknowledges, what Rawls calls *comprehensive doctrine* is not quite the same as what most liberal political theorists call *conception of the good*, though “they are recognizable close relatives” (1997: 84). For the purposes of this paper, I will assume that both are distinguishable: while conceptions of good deal mainly with lifestyles, comprehensive doctrines are about lifestyles and truth claims.

fragmentary constructions. Perhaps traditional religious doctrines aspire to be fully comprehensive. But the rest of the illustrations offered by Rawls could be deemed partially comprehensive. The question that lies ahead is whether Darwinism does too.

III

In this section I contend that Neo-Darwinism possesses a series of philosophical implications that may substantively affect our self-perception as human beings, thereby shaping some notions of ultimate meaning. According to a naturalistic reading of evolutionary biology:

- i. Species were not intended nor willed but rather accidental, thus the problem of *telos*;
- ii. Humans are not fundamentally different from other animals, thus the problem of *essentia*;
- iii. Free will is basically an operational illusion, thus the problem of *voluntas*;
- iv. Knowledge should be understood in terms of its capacity to advance reproductive fitness, thus the problem of *cognitio*.

Taken together, the responses that Neo-Darwinism provides for these four problems configure a particular view of our own existence. They may be insufficient to articulate a fully comprehensive doctrine in the Rawlsian sense, but they serve as a base from which other philosophical inferences could be drawn. I will offer a brief description of these problems and how they are commonly addressed within an evolutionary framework.

Before Darwin, it was commonly assumed that some superintelligence had designed, intended, willed and produced all life forms on Earth. I am not referring to the fundamentalist belief that God created everything as told by the book of Genesis, but to the much more plausible belief that He acted as an overarching guide, or by means of secondary causation. Darwinism not only destroyed the former but severely undermined the latter: it was natural selection, and not an invisible celestial hand, that was getting the job done. One of the crucial features of natural selection is that it works as an unguided, undirected, purposeless, and unconscious process¹³. Metaphysically speaking, Darwin was

¹³ Thus Richard Dawkins' famous comparison: "a true watchmaker has foresight... [Natural selection] does not plan for the future. It has no vision, no foresight, no sight at all. If it can be said to play the role of watchmaker in nature, it is the *blind* watchmaker" (1986: 5)

not affirming the inexistence of God, but he was fully aware that it was one way or the other. As he wrote in a letter to his mentor Charles Lyell, “the view that each variation has been providentially arranged seems to me to make natural selection entirely superfluous”. Conversely, natural selection makes the divine intervention superfluous¹⁴. The underlying message was resonant: if we were to keep the faith, the role of a godly designer should be importantly rethought¹⁵.

As was praised early by Marx, Darwin’s natural selection was delivering a *death-blow to teleology*. No designer means that life forms arose without purpose in mind. No purpose in mind means that no species –not even Homo Sapiens- was *really* willed and *really* necessary to fulfil any plan. George Gaylord Simpson, one of the most influential palaeontologists of the twentieth century and a major participant in the modern evolutionary synthesis, issued the central Darwinian principle: “Man is the result of a purposeless and natural process that did not have him in mind” (1967: 345). The naked truth is that we are a rather accidental and contingent species, with an incredible amount of luck. Taking Darwin seriously means to reconsider what we previously thought of ourselves and our allegedly special status in a fundamentally indifferent cosmos.

Evolutionary theory basically replaces teleology with teleonomy. In the same way Darwin succeeded in explaining the appearance of design without a top-down designer, “purposefulness is only apparent and is not a prerequisite or a driving force of the evolutionary process, but rather its result” (Schuster, 2008: 32). Thus any other evolutionary account –like the Theistic Evolution favoured by the Vatican- that intends to retain classic teleology is not Darwinian in this sense¹⁶. For the religious person, teleology suggests necessity: if Homo sapiens were willed by God –as was emphasized by Pope Benedict XVI¹⁷ and recently highlighted by Pope Francis¹⁸- sooner or later we *had to appear*

¹⁴ Later in his *Variations of Animals and Plants Under Domestication* (1868), Darwin stated that “no shadow of reason can be assigned for the belief that variations, alike in nature and the result of the same general laws, which have been the groundwork through natural selection of the formation of the most perfectly adapted animals in the world, man included, were intentionally and specially guided”.

¹⁵ As philosopher of science Phillip Kitcher summarizes, “a history of life dominated by natural selection is extremely hard to understand in providentialist terms” (2007: 124).

¹⁶ As the evolutionary psychologist Steve Stewart-Williams asserts, “Theistic Evolution does provide a solution to the God v. Darwinian evolution dilemma. But the solution is not to reconcile these views; it is to reject Darwinian evolution” (2010: 66). This has been recognized by the Catholic philosopher of religion Logan Paul Gage: “Teleological evolutionists should simply be clear that their hybrid theory is not Darwinism, traditionally understood” (2013: 136).

¹⁷ “We are not some casual and meaningless product of evolution. Each of us is the result of a thought of God. Each of us is *willed*, each of us is loved, each of us is necessary” (Ratzinger, cited in Horn & Wiedenhofer, 2008: 7).

to inhabit the planet. Neo-Darwinism contradicts the doctrine of necessity and instead argues that natural selection produced us in a fully contingent manner. As Stephen Jay Gould has suggested, if we “rewind the tape” of life to a certain point in ancient times and then let the tape run again, all the odds indicate that organisms wouldn’t navigate the same evolutionary route. The results could be strikingly different. Human intelligence, or even mammalian forms, may never have appeared. If this is correct –as most of the scientific community think it is- then “life may not, in any genuine sense, exist for us or because of us... perhaps we are just an afterthought, a kind of cosmic accident” (Gould, 1989: 44). So the Neo-Darwinian is warranted to believe that the world was not waiting for us in any meaningful sense¹⁹. In addition, evolutionary biologists may point to the fact that the amazing and heartrending plot of life on Earth looks exactly as it would look if no one had willed it²⁰. Arguably, this Darwinian pronouncement influences the kind of narrative that we tell ourselves about who we are and what are we doing here²¹.

Then we have the problem of *essentia*. A fundamental feature of evolutionary biology is that life is a continuum. According to it, the separateness of species will be always an operational taxonomist-like strategy and never an ontological reality. Genera are always artificial constructions. Here, Darwin presents an alternative understanding to that of Plato, Aristotle and most of the classic philosophers. The latter believed that species had a stable ontological identity. Neo-Darwinism is at odds with this type of essentialism. If anything, it should be considered rather nominalist. We put tags on different organic forms mostly for pragmatic reasons. But there is no ultimate *real* difference between a band of chimpanzees and my neighbours, for example. At least, there is no difference at the essential level. Again, this bears the power to strip human beings of their allegedly superior position in creation. With Darwinism, paraphrasing C.S. Lewis, the very idea of mankind risks its abolition. Or, as G.K. Chesterton warned, evolutionary theory worked as a *self-inflicted*

¹⁸ “Each of the various creatures, *willed* in its own being, reflects in its own way a ray of God’s infinite wisdom and goodness” (2015: 51).

¹⁹ In the words of the Turkish-American physicist Taner Edis, “our world is full of random uncaused noise. Through Darwinian processes, this noise gives rise to creative novelty, including very likely the creativity of our brains. Yet our religions insist that we are fearfully and wonderfully made, that creativity demands something beyond the material world. It is hard to imagine how much more thoroughly this vision can be undermined” (2002: 74).

²⁰ As Dawkins has put it bluntly, “the universe we observe has precisely the properties we should expect if there is, in the end, no design, no purpose, no evil and no good, nothing but blind, pitiless indifference” (1995: 133).

²¹ I agree with Michael Ruse here: “the fact that we are the contingent end-products of a natural process of evolution, rather than the special creation of a good God, in His own image, has to be just about the most profound thing we humans have discovered about ourselves” (1998: xi).

assault on the part of humanity. In fact, the whole notion of having a unique nature could be called into question, because it wouldn't be substantially different to other life forms. We are primates with language –thus culture- that rule the Earth through technology. No more than that. Darwinism tells us to embrace our place in the genealogical tree. Unsurprisingly, this may affect our after-death expectations: common animals are not supposed to have transcendental souls. There is no reason to believe that we do²². We may agree that our beliefs about what happens after natural death are relevant in the construction of our worldviews and they even possibly relate -as psychological drivers- to the kind of life we lead. The evolutionary approach to the problem of *essentia* can also lead us to reconsider the status of non-human animals in our communities. Some philosophers have been advocating animal rights on a fundamentally Darwinian base²³. It is relevant to recall that these views need not be *true* or even intellectually unassailable to be regarded as philosophical starting points for a comprehensive doctrine. The only requirement is a minimum of internal coherence, and it seems that Neo-Darwinism stoically bears the consequences of its anti-essentialism.

Then we have the distressing puzzle of free will. Many Darwinian thinkers –as well as their critics- have held that “an unavoidable implication of the mechanistic process of natural selection is that human beings have no free will” (Menuge, 2013. 93). We like to believe that our actions are the result of an internal deliberative process in which we decide the next move... but there is no actual *we* to decide. These don't have real independent selves pondering different paths before making a decision or thinking out an idea. Thoughts just pop-in and we never got to decide which thoughts are going to emerge²⁴. The conscious self would be an epiphenomenal illusion created by the material brain. Free will cannot escape Darwinian reductionism: it ultimately can be explained by appealing to physics and biology, or if you prefer, to anatomy and the physiology of the body²⁵. Thus voluntary actions are never fully voluntary in this materialist account. Our choices are only apparent

²² The influential historian of science William B. Provine famously said that modern evolutionary biology was telling him “loud and clear... that there is no life after death. When I die, I am absolutely certain that I am going to be dead. That's the end for me” (1994).

²³ Prominently, the Australian ethicist Peter Singer has urged to “recognise that the way in which we exploit nonhuman animals is a legacy of a pre-Darwinian past that exaggerated the gulf between humans and other animals, and therefore work towards a higher moral status for nonhuman animals, and a less anthropocentric view of our dominance over nature” (1999: 61-62).

²⁴ This is the central argument made by the philosopher, neurobiologist and New Atheist representative Sam Harris (2012) in his full-scale attack on the notion of free will from a scientific standpoint.

²⁵ Just before he died, the controversial polemist –and also outspoken New Atheist- Christopher Hitchens wrote that it was “no fun to appreciate the truth of the materialistic proposition that I don't *have* a body, I *am* a body” (2012: 41).

insofar they are predisposed by our neural wiring, which in turn is arranged according to our genetic inheritance. Critics call this view genetic determinism. It is hard to deny that there is *some* truth in that accusation²⁶. However, this does not mean that free will should be discarded as a useless notion. The actual feeling of having free will could be an evolutionary product. It started to deploy next to the appearance of conscience, which in turn owes its appearance to the increased complexity of our frontal lobes. We still need it, as Wilson recalls, “if not in ultimate reality then at least in the operational sense necessary for sanity and thereby for the perpetuation of the human species” (2014: 170). Therefore, from a Neo-Darwinian perspective, free will is basically a cheaper-to-keep illusion. As it were, if comprehensive doctrines are supposed to have a stand on whether we are truly autonomous agents or rather vehicles for the mechanical rule of our genes, then the answer given to the question of *voluntas* matters.

Finally, there is the problem of *cognitio*. As I mentioned before, Rawls thought that questions about the nature of knowledge and its accessibility were historically relevant to articulate comprehensive notions. And Neo-Darwinism provides an epistemological understanding. In a nutshell, it tells us that organisms need information about the external world in order to increase their evolutionary chances. Thus human knowledge arose as invaluable adaptive tool, to the extent that our ancestors learned that it was trustworthy. Some of that vestigial knowledge is still with us: as any other primate, we tend to associate snakes with danger and heights with falling²⁷. Such information is imprinted in our brains because it has proved useful. Therefore it is accessible to all. In no way has it fallen from heaven, neither is it a pale reflection of an ideal platonic form. Critics point out that if the naturalistic Darwinian theory of knowledge is correct, it would be very unlikely that our cognitive faculties were reliable: after all, they would not be aiming at truth over falsity but only to reproductive fitness. A false belief could be as adaptive as a true one. So, even the ground-breaking discoveries from evolutionary biology would be called into question²⁸. Besides its own circularity problems, Darwinists are not really deterred with this criticism. What is *ultimately* true could be beyond the scope of their theory of knowledge. They are

²⁶ Some truth but not the whole truth: unlike ants and other social insects, human behaviour has proven to be rather flexible and not rigidly programmed “according to fixed dictates which are genetically wired into our brains” (Ruse, 1998: 260).

²⁷ On the contrary, we haven’t yet developed any atavistic fear to electric sockets, even though they are much more present –and risky- in our daily existence than snakes.

²⁸ Alvin Plantinga has insisted that evolutionary naturalism is self-defeating: “a naturalist who accepts current evolutionary theory has a defeater for the proposition that her cognitive faculties are reliable. Furthermore, if she has a defeater for the proposition that her cognitive faculties are reliable, she has a defeater for any belief she takes to be produced by her faculties... including her belief in naturalism and evolution” (2011: xvi).

just asserting our sufficient epistemological powers to match the ontology of the world. To this account, truth is a practical concept. As Ruse distinguishes, there is a world that we can in some sense discover –the level of “common sense reality”- and there is the world in some absolute sense –the level of “metaphysical reality” (1998: 296). For the Darwinian, the former is good enough. What matters is that we can make rational sense of our experiences, be able to communicate them, and finally to act upon the reliability of such accumulated knowledge. Of course that our perceptions can be misled and our senses are sometimes deceived, but in the long term we usually get it right. Otherwise, we would be extinct by now.

This non-exhaustive set of problems –*telos, essentia, voluntas* and *cognitio*- deliver a plausible philosophical base to map out the nature and place of human beings in the cosmic drama: we are basically an improbable biological accident, closely related to other life forms, with a rather limited amount of real freedom, a species that dwells on the planet collecting data for survival and reproduction. Surely what we value in life may not be determined by an acceptance of human contingency or recognition that we are just evolved apes. But those coordinates provide a basic naturalistic frame within which we develop notions of existential meaning. Together with other scientific insights, this worldview speaks about causal closure and self-subsistence of material reality. In Charles Taylor’s distinction (2007), it goes within the immanent frame rather than along the transcendent one. It remains to be seen to what extent this cosmic imaginary affects our social imaginary, but some communication –specially coming from a reductionist endeavour- is expected to happen²⁹.

IV

It appears that the crucial test to qualify Neo-Darwinism as a comprehensive doctrine in the Rawlsian sense is to check whether it can supply some normative elements. We may agree that the Darwinian perspective places significant constraints on the way we see ourselves on the cosmic stage, but disagree on whether it provides a similar framework to draw moral judgements. If we decide that comprehensive doctrines must present fully developed criteria to assess what is right and wrong, ethically speaking, then Neo-

²⁹ Take it from a proud reductionist: “Love it or hate it, phenomena like this exhibit the heart of the power of the Darwinian idea. An impersonal, unreflective, robotic, mindless little scrap of molecular machinery is the ultimate basis of all agency, and hence meaning, and hence consciousness, in the universe” (Dennett. 1995, 203)

Darwinism should exhibit something like it. Religious belief systems usually have a set or moral commandments. Utilitarianism and Kantianism too: they set philosophical rules to define what we *ought* to do in life.

The fundamental problem with scientific theories like evolutionary biology (or theoretical physics) is that they are supposed to be value-free. They are supposed to describe how the natural world works, not how we should behave on the grounds of such discoveries. We do not speak about the moral virtues or moral vices of nature. Thus Hume's Law: we do not derive *ought* from *is*. Facts and values do not mingle. So even if the grand evolutionary story is factually correct, we may face an insurmountable challenge in order to articulate a normative side of it. My claim is that even though Neo-Darwinism is not in the business of telling people how they should conduct their lives, it may constitute a firm base to think about why we have the moral sentiments we happen to have. In other words, acknowledging that evolutionary theory does not trade on mandatory prescriptions doesn't preclude the fact that it could help us to understand our sense of moral obligation.

We are familiar with a few historical attempts to draw a substantive ethical account from a Darwinian perspective. The kind of Social Darwinism associated with the names of Herbert Spencer or William Graham Sumner used to view the evolutionary process as an encoded pattern that had to be discovered, endorsed and imitated by humans. Thereby they liked to project the logic of the *survival of the fittest* to our political, economic and social relations. Fierce competition was expected. Some will win and others will lose. The former would represent the height of Darwinian adaptation, whereas the latter would represent the unavoidable costs of the struggle for existence. So those who are left behind have no right to claim much from society. Actually, their failure would enable progression. The same narrative fed the desire of respectable part of the scientific community in the first half of the twentieth century to explore eugenics: it was supposed to be *right* to give a helping hand to natural selection to improve our species' fitness. But these views have no serious support nowadays, so it would be neither accurate nor honest to think about Neo-Darwinism as Social Darwinism in this sense.

Instead, the kind of Neo-Darwinism that I am assessing here was philosophically nourished by later discoveries in evolutionary biology. From the sixties onwards, natural scientists were able to explain why most animals show a prevalent interest in protecting their direct

relatives, and some indifference to those with whom no close genetic heritage was shared³⁰. Humans are not the exception. We tend to favour our kin because we are basically interested in advancing our genes through generations. This picture has led some biologists to see human beings as mere gene-replicator machines³¹. Of course, we are a lot *more* than that. But we are *also* that. The bottom line is that certain basic features of our social and family life can be fundamentally interpreted along these evolutionary parameters. For instance, that we have an innate tendency to parental care. This strong driver could explain why utopian projects that historically advocated the abolition of family –from Plato to Engels- were never destined to prevail. Notice that Neo-Darwinism is not specifying a political arrangement to raise offspring; it is rather saying that our natural dispositions - shaped by evolution across millions of years- cannot be easily overridden by hyper-egalitarian aspirations. The family would not be a mere social construction to dispense with, but rather a fundamental feature attached to our long story of reproductive success³².

But a world dominated by values extrapolated from kin selection would look like an insufferable and self-destructive state of nepotistic warfare. This goes against any species' survival efforts, including ours. Thereby the main chance for human civilization to grow strong is by moving from the kind of hard-core altruism that we practice within our family ties to the kind of soft-core altruism that we exercise towards people outside it. The Golden Rule that most religious denominations teach as their original contribution -*one should treat others as one would like others to treat oneself*- would be actually a maxim of reciprocity inscribed in our evolutionary heritage. Darwinism can explain why being nice to our fellow citizens is a great idea. So, from time to time, humans depart from selfishness and behave generously to non-relatives. They benefit other organisms, waiting to be benefited in turn, the same as we witness in the world of vampire bats or cleaning fish³³. Hence, it is not true altruism in the sense that we don't expect anything in return: I will scratch your back *if* you will scratch mine. Thus we feel morally entitled to punish, isolate or even put free-riders

³⁰ It is generally considered that this path of research was fully inaugurated by W. D. Hamilton's *The Genetical Evolution of Social Behaviour* (1964).

³¹ This was Richard Dawkins's ground-breaking thesis in *The Selfish Gene* (1976): that we are survival machines, robot vehicles blindly programmed to preserve the selfish molecules known as genes.

³² The 'Godfather' would have been right all along at remarking that 'there is nothing more important to a man than his Family'. The tale of Abraham and Isaac, on the contrary, would strike us as immoral because we are programmed to love –and not to murder- our sons.

³³ Bats that didn't go for a hunt one night –because they were unable to do it- receive food from those who went. The latter expect the same if they happen to be impaired someday. But they will stop bringing meal to those members of the colony that do not behave similarly. Direct reciprocity is also patently seen in coral reefs where large fish arrive to be cleansed of teeth parasites by smaller fish that feed on them. They are not doing it because they *love* their counterpart, but because it is a win-win relationship.

forcibly into line³⁴. Even the kind of behaviour that comes to a cost to the individual without visible reciprocation –e.g. sacrificial cooperation- has found its evolutionary explanation: it would constitute a long-term investment that impact on the group’s reproductive fitness, as we see it in the world of social insects³⁵.

Morality, in a nutshell, would be an evolutionary adaptation, “just like hands and feet” (Ruse, 1998: 222). Over millions of years, long before the dawn of culture, our behavioural dispositions were slowly carved out by natural selection. Those traits that enhanced our reproductive fitness –individually or collectively- were passed on to our descendants, like certain cooperative dispositions. The detrimental ones, like incest and license-to-kill were fought through taboos and prohibitions. At the same time we found out that both human males and females had certain biological interest in more or less stable monogamous arrangements. And so on. Committed Darwinians are able to recognize the invisible hand of evolution in a myriad of animal and human predispositions, habits and attitudes³⁶. So while it is true that it would be inaccurate to maintain that we can get a set of values from evolution, what Darwinian socio-biology is asserting is that we can at least understand the values we already have through an evolutionary lens: our moral codes would be genetically underpinned. Therefore, the scientific theory of evolution may remain strictly descriptive. But that’s not equal to saying that it is silent on the normative debate. Biological history provides the foundations on which culture builds. This building rises well above and beyond the biological foundations, but it has its roots firmly in them. Hence the question is not whether we are to fuse morality with biology, but how.

The tentative answer is that evolutionary theory does not offer a coherent set of substantive ethics –what we *ought* to do in order to live a moral life- but it does give us a metaethical map to inquire about the ultimate justification of our moral sense. Or, as the

³⁴ Free-riders are also known as “defectors”, as in Robert Axelrod’s seminal *The Evolution of Cooperation* (1984). According to Axelrod’s research, our moral sense of reciprocity evolves as in an indefinitely repeated Prisoner’s Dilemma. If we play just once, the best strategy will be defection. But if we learn to anticipate our counterpart’s cooperation, we will cooperate in return under a Tit-for-Tat model because that’s the best strategy for both.

³⁵ After decades of intellectual dishonour, the idea of group selection as an evolutionary mechanism -instead of orthodox natural selection operating at the level of the individual- is back on track -not least due to work of David Sloan Wilson and E.O. Wilson himself and much to the chagrin of the likes of Dawkins and Coyne. It suggests that single organisms in animal societies have good reasons to offer up their wellbeing in the name of the group when fighting predators or competing against rival groups of the same species -like the bird that warns of danger to its flock, putting itself at risk. Although in these cases the individual will not enhance his own reproductive fitness, this type of heroic behaviour will enhance the chances of the group to overcome its adversaries. Some of these ideas were sketched out by Darwin in *The Descent of Man* (1861).

³⁶ Sceptical Darwinians like Gould would retort that these are simply “just” stories, never fully tested.

British philosopher A.C. Grayling put it, the whole morality business may be divided into *ethics* and *moral presupposition*. While the former goes by “thinking and theorizing about what is good and bad, and how people should live”, the latter addresses “what, either consciously or unconsciously, governs what people do, or aspire to do, in the conduct of life” (2003: ix). Neo-Darwinism would be at home with the second meaning. Of course, it is an open question to what extent the (evolutionary) moral presuppositions *may* or even *should* work as constraints over the realm of ethics, either encouraging or discouraging certain prescriptions. Although evolutionary biologists have long held that modern humankind has the ability –and perhaps the ethical duty- to rebel against genetic determinism³⁷, it is not uncommon –as in the case of family values or animal rights- to invoke metaethical Darwinism to support one way or the other.

Of course, if we think that prototypical comprehensive doctrines *must* display a set of close normative commandments –as in the so-called religions of the Book- or a guide for imperative action –as in deontological accounts- or at least a clear procedure to determine whether certain actions are right or wrong –as when we apply the principle of Utility- then philosophical Darwinism does not deserve to be considered one of the kind. However, Rawls does not set this criterion. His own examples of comprehensive conceptions are rather incomplete. Justice as Fairness, for instance, has little to say on cosmic issues or about the meaning of life. It has also seldom to say about how we should behave in our non-public (social or familiar) relations. The same goes for Libertarianism, which seems to be, on the face of it, much less comprehensive than Neo-Darwinism. Therefore, my claim is that the latter could be regarded, at the very least, as a partial or fragmentary comprehensive doctrine in the Rawlsian sense. What it lacks in substantive ethics could be supplemented by complementary doctrines.

V

In this final section I aim to compare Darwinian-based philosophy with other comprehensive doctrines mentioned by Rawls. Placing Neo-Darwinism on an equal-standing conversation with other philosophical points of departure would help us to

³⁷ In his day, Thomas Henry Huxley –“Darwin's Bulldog”- argued that animal methods in the struggle for existence were not adequate moral guidelines for human societies. Our ethical progress depends, Huxley believed, not in the imitation of natural processes but in fighting against such logic. Later in *The Selfish Gene* (1976), even Richard Dawkins –“Darwin's Rottweiler”- made an exhortation to rebel against “the tyranny of the selfish replicators”.

understand to what extent it could be politically problematic to adopt the former as *plain truth* rather than as a competing worldview.

According to Darwinian thinking, morality is an adaptation. Therefore, it evolves over time. Crucially, it can mutate depending on whether the conditions for reproductive fitness change. This seems to be at odds with Kantian ethics³⁸. Morality ceases to be absolute, universal and necessary. Instead it appears to be rather relative, subjective and contingent. But the disagreement would be even deeper. While Kant affirms that we should overcome the rule of our natural inclinations to achieve autonomy, Darwin seems to align with Hume: our natural dispositions deserve a fair hearing, and perhaps reason *should* be at their service. Whereas Kant tries to articulate a notion of moral freedom as freedom *from* nature, Darwin and Hume seem to believe that any relevant moral freedom is *within* nature. We cannot help but to obey our gene-masters, especially if paramount matters such as survival and reproduction are at stake. Theoretically, no Darwinian moral theory would allow adaptive fitness to decay in the long run.

Partially for the reasons above, Darwinism has also been presented as antagonistic to some liberal views –such as Locke’s- on natural rights: no such things as inalienable fixed rights could be born from a Darwinian account. Moral rights will be as mutable as evolution advises them to be³⁹. This does not mean that modern human rights cannot be grounded on any Darwinian reading. E.O. Wilson, for instance, points out what he calls the *mammalian plan* to justify the existence of a set of fundamental rights that allow us to pursue such a crucial plan⁴⁰. Human rights would be natural, after all, but in a wholly different sense: we are not endowed with them; we just need them to fulfil our Darwinian urges.

³⁸ This judgment is shared by Darwinians and anti-Darwinians alike. Michael Ruse has written that “the spirit of Kantianism is antithetical to the spirit of Darwinism” (1998: 265); Representing the latter, Benjamin Wiker has stated that “obviously the liberal moralist at greatest odds with Darwinism is Immanuel Kant” (2013: 45).

³⁹ Again, both camps seem to be in agreement. A full-blown Darwinist such as Michael Shermer has recently published a book –*The Moral Arc* (2015) - in which he advocates that moral progress has little to do with the recognition of natural rights in the conventional sense, but instead it could be related to our growing “scientific” awareness of the world. From a Catholic intellectual perspective, philosopher Peter Lawler agrees that “there aren’t any Darwinian natural rights” (2013: 51).

⁴⁰ “The individual strives for personal reproductive success foremost and that of his immediate kin secondarily; further grudging cooperation represents a compromise struck in order to enjoy the benefits of group membership... We will access to universal rights because power is too fluid in advanced technological societies to circumvent this *mammalian imperative*; the long-term consequences of inequity will always be visibly dangerous to its temporary beneficiaries. I suggest that this is the true reason for universal rights movement and that an understanding of its raw biological causation will be more compelling in the end than any rationalization contrived by culture to reinforce and euphemize it” (Wilson, 1978: 199).

In any case, it is important to distinguish Wilson's notion of universality from any tempting appeal to cosmopolitanism. Darwinian sentiments seem to operate through loyalty layers: the more distant the relationship, the less intense the loyalty, and vice versa. So it is fully understandable that we do not feel any acute moral duty towards people with whom we do not share any significant community. Instead, we may find justification to the communitarian-minded argument that obligations to our fellow countrymen should be more closely followed than those to outsiders. Whether Neo-Darwinism fits within a communitarian political theory is another discussion. What I have already said about group selection may serve to those who want to blend the individual's interest with that of the community, as if the latter were a super-organism in a biological sense.

The relationship between Darwinism and Marxism is also a complicated one. It has been reported that Marx was originally enthusiastic about Darwin's findings. The English naturalist had discovered the law of organic change without appealing to any providential intervention. This would have lent support to Marx's intuition: the law of political and social development could unfold similarly. But at the same time, he was less convinced by the Darwinian emphasis on an unavoidable struggle for scarce resources: how to build an economy of solidarity if we are *made* for competition? Marx's heirs were also displeased with the new socio-biological approach. Wilson's idea that "genes hold culture on a leash" (1978: 167) was utterly problematic for an ideology that firmly believes in the malleability of human beings. To be sure: Darwinism is not asserting that cultural change –via political, economic or social structures- is impossible; it is mainly saying that our natural inheritance places some relevant constraints on its ambitions⁴¹. After all, culture is a fairly recent invention in the big picture. In contrast, biological evolution has been acting on us for millions of years. So Darwinism stands in opposition to the dream of creating a new-brand of man. It does not dispute that history could be understood as the interplay of economic forces and processes; it just points out that Marx, Engels and their disciples got human nature wrong. Hence Wilson's statement: "Marxism is socio-biology without biology" (1978: 191).

This sort of anti-utopian realism appears to be a signature of the Darwinian worldview. Hence, we may infer that Neo-Darwinism is also hard to reconcile with strongly perfectionist theories. Wilson recalls that "human nature is stubborn and cannot be forced

⁴¹ This, again, possess an undeniable Humean flavour: "The utmost politicians can perform, is to extend the natural sentiments beyond their original bounds; but still nature must furnish the materials, and give us some notion of moral distinctions" (Hume, 1817: 208).

without a cost” (1978: 147). So, philosophical doctrines that ignore such stubbornness or do not care about the costs would be at odds with an evolutionary perspective. As it was expected, this feature has been interpreted in a political context as a defence of the status quo: the Neo-Darwinian argument would be inherently conservative. Indeed, this position has been advocated by a group of American political scientists, prominently by Larry Arnhart (2005). According to them, the evolutionary paradigm provides suitable grounds for Right-wing policies and attitudes. After all, Darwinists know that human beings are morally and intellectually imperfectible, that inborn instincts and customary traditions shed light about our nature, that family life and gender differences play a crucial role for social stability, and that our tendency to private property is anything but artificial. Thus, Darwinian conservatives conclude that the role of governments should be limited. Coincidentally, this approach draws from F.A. Hayek to compare the undirected character of natural selection with the spontaneous order of free markets. After all, both resemble Adam Smith’s invisible hand⁴². Just for the record, these efforts to wed Darwin with the political Right have been received with scepticism; after all, at least in the US, conservatives tend to be creationists. They firmly believe that the full embracement of evolutionary logic could be –all things considered– much more undermining than beneficial to their ideology⁴³.

But the idea that humankind is not completely malleable has pervaded outside the realm of Right-wing theorists. Peter Singer has argued that the political Left should rethink the Marxist premise that what we use to call nature is not more than an ensemble of social relations and hence it can be essentially changed. A Darwinian Left, accordingly, should take seriously the idea that “we bear the evidence of our inheritance, not only in our anatomy and DNA, but in our behaviour too” (Singer, 1999: 6). So there are certain facts about our nature which cannot be discursively disregarded as mere cultural inventions, oppressive strategies or weapons of domination. On the contrary, evidence from the natural sciences should be referential to develop new insights for the old dream of building a more equitable world. For example, that people will act competitively no matter what

⁴² The historian of science Michael Shermer has made this comparison: “Darwin showed how complex design and ecological balance were unintended consequences of competition among individual organisms. Smith showed how national wealth and social harmony were unintended consequences of competition among individual people. Nature’s economy mirrors society’s economy. Both are designed from the bottom up, not the top down” (2006).

⁴³ Stephen Dille has recently edited an interesting volume –*Darwinian Evolution and Classical Liberalism. Theories in Tension* (2013) – that includes several conservative and faith-friendly voices who mount a stinging critique against this attempt.

under certain schemes; that the persecution of social status is an indelible mark of our reproductive aspiration; that the tendency to favour our relatives has to be regulated but will never be eradicated; that diverse forms of social cooperation are possible but they must be perceived as beneficial to all in order to be successful, and so on. Therefore, we may find Darwinist thinkers at both sides of the political spectrum⁴⁴.

Singer is also an analytic philosopher that openly advocates Utilitarianism. We have already reviewed that Darwinism appears to be at odds with Kantianism, but how about Utilitarianism? There is some room for both to work together. Let's recall that any attempt to ground Darwinian ethics should begin by acknowledging that survival and reproduction are paramount goals. In the case of humans, this usually means promoting the flourishing of individual beings and condemning all that does not. Happiness brings us closer to flourishing whereas suffering moves us away from it. Thus, a plausible Darwinian account on ethics should promote happiness and reject suffering of sentient beings⁴⁵. This includes non-human higher animals⁴⁶. The basis of Darwinian morality, then, would consist in a concern for the wellbeing of conscious creatures. That is exactly why we do not think that territorial violence, rape and other nasty behaviours that may have been crucial to propagating our genes in the past should be encouraged: our collective wellbeing –*the greatest good of the greatest number*– depends on our opposition to those natural tendencies (Harris, 2010). Why collective? As we tend to feel and live like our fellow human beings, we have the capacity to take their wellbeing into account. Empathy is no more –and no less– than an evolutionary product and therefore a biological imperative. So, according to this Darwinian reading, our actions *should* be directed to promoting the general happiness⁴⁷.

A more tense parallel can be drawn between Neo-Darwinism and secular humanism. I have mentioned that most Darwinists recognize that the lack of a robust normative side is an

⁴⁴ Is this a problem? Do comprehensive doctrines need a politically known home address? Not really. At any rate, it doesn't seem to be a trouble with Hegelians or even Utilitarians. All we need is a coherent philosophical framework to be applied, even if two people arrive at different conclusions by applying it.

⁴⁵ In this sense, Michael Ruse has recognized that “the Darwinian agrees with the Utilitarian that happiness is an important desired end in life” (1998: 236) and explicitly asserted that “the Utilitarian perspective on the nature of morality meshes comfortably with the Darwinian approach to such thought and behaviour” (1998: 237).

⁴⁶ Thus Singer's challenge to Dawkins and the rest of the Darwinian activists to abandon meat-eating, to which Dawkins responded that while it was true that killing certain animals for food was unethical, he just couldn't stop doing it.

⁴⁷ Interestingly enough, this philosophical stand tends to blur the frontier between facts and values: after all, values, morality and notions of the good life *must* be related to objective facts about the wellbeing of conscious creatures, which in turn lawfully depend upon events in the real world and upon states of the human brain (Harris, 2010).

internal feature of the evolutionary perspective, so they must appeal to other sources for moral prescriptions. Unsurprisingly, most people that understand reality from a Darwinian perspective and declare to be fully naturalistic in their assessment of cosmic/metaphysical questions tend to identify themselves with secular humanism when it comes to defending a substantive ethical stance. It is a combination that seems to work fine for many non-religious persons in the Western world: Neo-Darwinian naturalism to address questions such as where we come from and what is the place of humans in the universe *plus* secular humanism to handle questions such as how to live a moral life. It looks like a reasonable division of the philosophical labour: evolution explains why we are here whereas humanism tells us how to live ethical lives. But it is not that simple. It has been argued that Darwinism, as a naturalistic doctrine, goes beyond what is required for an average humanist. Although it may be statistically true that most humanists are more or less naturalists, not all of them are willing to deny the existence of a spiritual realities transcending nature and matter (Law, 2011). They may share the normative commitments of secular humanism and they could be atheists in the minimalistic sense –that there is no such thing as a personal God watching our steps and evaluating the merits of our prayers– but at the same time reject that everything could be reduced to non-teleological natural processes⁴⁸. So we cannot treat Neo-Darwinism as an all-too-obvious companion for philosophical humanism after all. Furthermore, as John Gray has suggested, Darwinism is fundamentally at odds with the type of liberal humanism that is professed in the Western world, at least to the extent that the latter places high hopes on the idea of progress and still thinks about human beings as worthy of some special consideration. But Darwin’s theory “shows us the truth of naturalism: we are animals like any other; our fate and that of the rest of life on Earth are the same” (Gray, 2002: 31). The paradox, according to Gray, is that modern-day humanists proudly assert that they have abandoned groundless faith, but in the end they are basically mimicking Christianity and its promise of human salvation. Indeed, biological evolution has little to do with our common notions of progress. So even though most humanists point to Darwin to explain the foundations of their non-theistic beliefs, taking Darwinism seriously might mean abandoning secular humanism as it is commonly conceived⁴⁹.

⁴⁸ This is the position adopted by Nagel and the late Ronald Dworkin in *Religion without God* (2013).

⁴⁹ This insight is endorsed by the philosopher of science Steve Fuller, who has pointed out that humanism is a doctrine “that bears little scrutiny from the species egalitarian standpoint of strict Darwinism” (2010: 76).

Drawing on Singer's and Gray's insights, a final suggestion may be articulated: that Neo-Darwinism should fuse with the sort of deep ecology that advocates that all living beings deserve the same moral status regardless of their instrumental utility to human needs. As it has been described, deep ecology goes beyond the valueless-and-merely-factual scientific level and "attempts to articulate a comprehensive religious and philosophical worldview" (Devall and Sessions, 2010: 454). Here, the natural environment acquires a sort of sacred meaning. Hence there are common themes between evolutionary reductionism and ecological consciousness: both would contend that human beings are not fundamentally separated, isolated or superior to the rest of the natural world. But if the partial destruction of the natural world came as a consequence of our own evolutionary success as voracious and predatory primates, it is doubtful that Neo-Darwinism would issue a definitive condemnation on such a survive-and-reproduce strategy. If we heed the proposal that the astronomer and science popularizer Carl Sagan once articulated, we should take the perpetuation of our own species as a sacred goal. Sadly, this route could end in a zero-sum game between us and other life forms: our success may imply their extinction. It is undeniable that in many respects, the natural world would be better-off without us around. Existential conservatism could be a sensible Darwinian normative commitment –it calls for a long term moral vision that includes the prosperity of next generations while projecting the secular dream of genetic immortality- but that is not what deep ecologists have in mind⁵⁰. Still, as comprehensive doctrines, both assert the central value of biodiversity. Even though the Neo-Darwinian practice is inclined towards what Singer calls "speciesism" - privileging the wellbeing of humans over other animals- the idea of extending some form of respect to non-human animals- *has* to resonate in Darwinian ears: as Dennett remarks, the full acceptance of the evolutionary paradigm *should* "open [people's] eyes to the dangers of pandemics, degradation of the environment, and loss of biodiversity, and informing them about some of the foibles of human nature" (2006: 268)⁵¹.

At this closing stage it may be observed that I have not stressed the connections and affinities of Neo-Darwinism with other familiar metaphysical standpoints such as Materialism (or Naturalism, which for these purposes is the same), but I will assume that

⁵⁰ To be fair with Sagan, his ideal of perpetuation of the human species was intimately associated with the technological capacity to colonize other planets. See *Pale Blue Dot: A Vision of the Human Future in Space* (1994).

⁵¹ This is not an exclusive naturalistic stance anymore: the Vatican has recently joined its voice to the environmental preoccupation, stating that the Biblical command to rule the Earth doesn't give humankind the moral right to absolute dominion over other creatures. As Pope Francis has put it, there is no place "for a tyrannical anthropocentrism" in our world (2015: 50).

the former fits quite well within the framework of the latter. It makes sense to think about Darwinism as a species in a genus. Actually, evolutionary theory is the jewel in the Materialist crown. Some differences still exist. For instance, an evolutionary comprehensive perspective maintains that we have a sufficiently accurate picture of the world by appealing to purely physical, chemical and biological processes, but it does not affirm that the material is the only real thing in the universe, period. Darwinism is *Ockhamistically* materialist, or materialist by default -insofar as it does not need non-materialist resources to fulfil its explanatory goal- whilst metaphysical Materialism is positively so. In any case, many authors refer to scientific materialism as the proper worldview, with evolutionary reductionism as one of its central elements (Wilson, 2014). As scientific materialism has been historically regarded as the -rather hostile- Enlightened alternative to religious myths, Darwinism partakes in this spirit by extension⁵². At the same time, scientific materialism bears some similarities with the notion of Scientism, which is the attempt to ground all sources of meaning and value in the scientific project. Thus described, it is hard to deny that Scientism is a fully-fledged comprehensive doctrine. And again, Neo-Darwinism could fit within its broader framework⁵³.

All things considered, Darwinian philosophy relates, interplays and communicates with other comprehensive doctrines -whether partial or total- on a symmetrical footing.

Conclusion

Throughout this paper, I have not referred to the educational controversy that usually captures the interest of legal and political theorists when addressing the ‘creation vs. evolution’ debate. Most likely there are good reasons to exclude creationist views from the science curriculum. But those reasons cannot appeal to the claim that evolutionary theory is a mere *plain truth* in the Rawlsian sense: Darwinism soars above the uncontroversial-scientific-value-free realm. It is still a scientific statement, but one that sends an audible philosophical message. Here I have assumed that, as a scientific statement, evolutionary theory is right and creationists are wrong. What is at stake is something else: once Darwinism is universally accepted as the true story of biodiversity, the crux of the issue is

⁵² As Kitcher acknowledges, Darwinism has been usually related with “the enlightenment case against supernaturalism” (2007: 131).

⁵³ I will not try to fit Darwinism into Atheism as such for a simple reason: I take Atheism as a metaphysical position but not necessarily a comprehensive one.

whether the insights of evolutionary biology could be extended and expanded into other areas of knowledge⁵⁴. My claim is that it may be confidently said that it represents a sort of comprehensive doctrine, according to the -loose enough- description offered in *Political Liberalism*.

Comprehensive doctrines “express views of the world and of our life with one another, severally and collective, as a whole”, intelligible views which “normally belong to, or draw upon, a tradition of thought and doctrine” (Rawls, 2005: 58-9). I hope I have shown that Neo-Darwinism meets, at least partially, these requirements. By disavowing teleological superior purpose and pointing out our true nature as fully contingent animals, it has the power to shape the foundations of human meaning. By connecting us with eons of fortunate evolution, it has the capacity to explain the foundations of our moral sentiments. Thereby Darwinism is more than philosophical enough starting point from which to build a way of seeing the world and understanding our relationship with others. As it is a reductionist intellectual project, it proposes a continuum between the realm of science and the realm of humanities, where most of our notions of value reside. If this reading is persuasive, for the purposes of political liberalism, Neo-Darwinism should be indeed placed in a symmetrical position to other (reasonable) comprehensive conceptions mentioned by Rawls, with all that this entails.

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⁵⁴ Andrew Brown got it right when he pointed out that, leaving aside the denials of literalist denominations, “the Darwin wars are not between believers and disbelievers in evolution, or in Darwinism; they are about the scope and proper limits of Darwinian explanations” (1999: 18).

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