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## **Bergson and the Aristotelian model of immanent teleology**

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## General conclusion: The masks of Proteus

The historian of philosophy and philosopher Nicolai Hartmann says in 1944: “traditional metaphysics have been frequently exposed in their core ideas and guidelines and have often been criticized for their mistakes, but they have not been investigated according to their *intimate driving motive*. I see this motive in the irresistible *tendency to teleology*, which, as Proteus, is harbored by innumerable figures, that often remain hardly recognizable, yet always the same”.<sup>783</sup> I find this passage particularly pertinent. Here teleology or final causality is seen as something deeply anchored in metaphysical thinking. Even in the middle of the 20<sup>th</sup> century, teleology is seen by this author as something “intimate” to metaphysics and, at the same time, something “irresistible” to the philosophers who want to give a complete account of what nature is, beyond material physics, atoms and movements. Even more interestingly, Hartman also claims that teleology is a *Protean concept*.

According to this very idea, this work has shown that teleology, and namely, the model of immanent teleology, can change, and at the same time remain "the same". We have seen that the "articulated intimate driving motive" that remains between Aristotle and Bergson is none other than perfection and the tendency towards it. We also have seen some of those "innumerable figures" in their discourses on nature and human beings. In my account, the series may be understood in a couple of opposites: transcendental teleology/immanent teleology, individual teleology/ global teleology, development teleology/ contribution teleology, beneficiary teleology/ aim teleology, teleology based on vertical/horizontal analogies, conservative teleology/transgressive teleology, primary teleology/secondary teleology. Eventually, there are hybrid cases that challenge those labels: the city in Aristotle or individual freedom in Bergson. All the masks of this Proteus harbor in the end the same ontological claim: there is a need to reach completion in this world, a need that is natural and by no means tragic. The model of immanent teleology that we have seen is an account of this fulfillment.

We have seen in which sense Bergson thought that immanent teleology is *essentially psychological*, and according to the Protean status of the topic, why it is so *flexible, extensible* and *comprehensive* too. These questions appear in Chapter 1 and have been answered in detail all throughout the dissertation. It is psychological because it is analogical. It is analogic because humans are not an external spectator of nature anymore. Human knowledge is here integrated within nature. I have shown that there is a structural familiarity between human consciousness and the living.<sup>784</sup> Finalism is flexible because it changes according to the conception of perfection that we want to apply. We can move from the world of forms and eternal stability to the cosmos, to creativity and continuous change, and remain perfectly finalistic. The world-view of teleology understands nature as a both plural and articulated drives towards activity and function.

Although Aristotle, the founder, as we saw in Chapter 2, conceived teleology in the domain of regular phenomena, in an everlasting world, he also left open a path for reformers of teleology with his considerations on unpredictable events. I hope I have demonstrated to what extent Aristotle's framework is rich and comprehensive. We see in 3 how Bergson uses the

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<sup>783</sup> Hartmann, Nicolai. *Teleologisches Denken, [El pensar teleológico]*. Trad. José Gaos. FCE, México, 1966, p. 227, translation and italics are mine.

<sup>784</sup> Spaemann, Robert. (*Die Frage Wozu*) *Fini naturali. Storia & riscoperta del pensiero teleologico*. Op.cit.

term perfection and analogy, how he also understands mitigated anthropocentrism in an evolutionary way and, finally, how he recombines primary secondary teleology. In his global accounts of Life and history he uses both temporal dimensions of teleology. The cosmological ground is regular, although the particular events within the process are contingent, a matter of secondary teleology. Hence Bergson introduces contingency at the center of his global conception of nature. Secondary teleology is not part of exceptional cases as it was in Aristotle, here it is at the core of nature. In 2.1 and 3 we can see the depth and complexity of the reformer of immanent teleology. We can see what he meant with *going further*.

In general terms, in 2.2.a and 4.1 we have seen an important agreement between the founder and the reformer of immanent teleology. According to this model of thinking, Aristotle's and Bergson's philosophy of nature understand the world of life as plural, against anthropocentrism. Aristotle wrote against anthropocentric Platonism, but Bergson attacks the post-Cartesian tradition, in which analogies and anthropomorphism are rejected. I believe, with Johnson (2.1.c), that immanent teleology automatically rejects anthropocentrism by appealing to anthropomorphism. This fits with Bergson. I understand his natural philosophy as an attack on modern anthropocentrism, in which providential teleology is not the problem anymore but the mechanistic conception of the world. Bergson certainly did not think that a living being can be reduced to atoms moved by inertial determinate laws.

The large set of phenomena gathered in 2.2.a and 4.1 show that immanent teleology considers life as an irreducible striving towards the fulfillment of one function as far as possible. Bergson highlights the Aristotelian teleological notion of function and got rid of that of form. Immanent teleology understands nature as a sum of functions. They are irreducible to each other. Each kind of living being has inscribed in its nature one type of completeness and perfection. Immanent teleology recognizes innate goals and perfection in the natural world. Among them, again, the human species finds itself within that plurality, and not outside. Thus survival, reproduction, well-being, destination and maturity are applied to embryos, wasps or mature humans. Bergson's approach is not evolutionary, in this sense, so it remains in primary teleology, as if living beings were always the same. The approach of both is not so different.

This naturalistic philosophy can have some accounts that sound strange to our contemporary ears (namely, their understanding of cities or communities), but also has elements of great value. Like in the case of Johnson with Aristotle, my view of Bergson can be supported with solid arguments from environmentalist readings.<sup>785</sup> Furthermore, more importantly from the theoretical point of view, teleology is a proper philosophy of life and biomorphism. This permits us to understand the ontology of life.

The embryos movement and change, the wasp's and human's growth and behavior tend all to avoid death, the permanent menace of every living being, and they tend to reach the best of our potentialities, the permanent ambition. That is, living (or survival) and living-well are the goal of every entity from the moment it is alive. In a recent study on teleology from a modern perspective, the philosopher Hans Jonas developed this line in emphasizing the irreducible value between life and death.<sup>786</sup> It is a value that could not be noticed beyond life. Only from the perspective of living beings could we finally understand the absolute value, the level of

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<sup>785</sup> A line started by Gunter, Peter. "Bergson and the war against nature". Op. cit.

<sup>786</sup> Jonas, Hans. *Das Prinzip Leben. [El principio vida]*. Trans. José Mardomingo. Trotta, Madrid, 2000.

perfection or *telos*, of being alive. As Aristotle says, “living is better than not living”.<sup>787</sup> I think there is a teleological meaning in this line. From the moment something is alive, it understands this perfection spontaneously and not by any logical skill: there is the tendency to survive and reproduce. There is the teleological striving to perfection, to what is “better”. In the most abstract terms, the ontology of life implies a natural non-conscious tendency to overcome death by flourishing. This is the immanent goal of every living being. The Darwinian term “struggle” dramatizes the process of survival and reproduction, but in the end it is based on a hard teleological claim. Life is for the sake of living in the best possible way. Aristotle and Bergson are both philosophers of pluralism, anthropomorphism and life. Death is not at the core of their philosophy. Aristotle has several commentaries on biological death and decay, and one short physiological treatise, but the most part of his huge biological work and his ethics is devoted entirely to life, led by his teleological perspective. By no means he followed his master in his speculations regarding the afterlife. Bergson's teleology expresses the same idea. Activity, maturity, emergence and flourishing were the center of the worldview of this reformer of teleology. Following Horkheimer, Benjamin has written “in Bergson there is no death”.<sup>788</sup> I interpret this affirmation as deeply right: Bergson focused his sight on being alive, on the *télos* and not the *escháton*.

With the human realm, what we call goal, perfection or the for the sake of becomes much more complex. Not just survival of the individual or of the species is to be considered a goal. Among superior animals, the *télos* is well-being. Among humans, in Aristotle, that is called happiness or *eudaimonía*. In the realm of human ethics Bergson held a eudaimonistic perspective. On the one hand, we saw in 4.1 that Bergson addresses human life in conservative terms, namely, in terms of attention to life. But at the beginning of 4.2 we find a second way of addressing the goal of human beings, compatible with the previous. There I show how Bergson introduces transgressive teleology or freedom (production of unforeseeable novelty in the world). The distance between this faculty and attention to life in Bergson is comparable to contemplation and the rest of human faculties in Aristotle. Transgressive teleology means that the specific goal inscribed in the individual is precisely to overcome the general average conception of the human being for the sake of a self-made personality. In Bergson we find the only case in which transgressive teleology is individual. As we saw in 4.2.a this transgression can be understood from two perspectives. There is a beneficiary here, but at the same time there is a contribution to the whole.

Bergson introduces free-will, seen as creativity, at the center of his ethics. This leads to the idea that in creativity lies the ultimate completeness and happiness of every human being. Now we have departed from the ancient framework and gotten closer to contemporary thought, more concerned with concepts like creativity. According to Bergson, happy maturity or, in his terms, deep joy implies self-creation. The teleology that understands well-being or happiness as freedom, transgressive teleology, implies the paradox of finalism without goals.

The paradox becomes bigger when the domain of transgressive teleology becomes bigger. Between 2.2.b and 4.2 I have shown the conceptual roots of the modern term progress. In Aristotle we saw different kinds of global teleology, where perfection or *télos* must be understood as contribution. What in Aristotle is eternal, in Bergson is in constant change.

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<sup>787</sup> “GA.II.1.731b20-2a1. See 2.2.a.

<sup>788</sup>“Dass im Bergsons *durée* der Tod ausfällt, dichtet sie gegen die geschichtliche (...) Ordnung ab“. Benjamin, Walter. *Baudelaire*. Suhrkamp, Frankfurt am Main, 2017. p. 139. Horkheimer, Max. “On Bergson’s metaphysics of time”. Trans. Frances Stracey. *Radical Philosophy*, 131. May/June 2005.

What in Aristotle is contribution to one order, in Bergson is contribution to one transgression to better subsequent stages. Teleology, seen as one static contribution, appears in the modern concept of ecology, but global transgression appears in the usual concept of progress. Regarding the whole cosmos or only mankind, the paradox of transgressive teleology reappears. It is, again, teleology with no *télos*.

In 4.2.b, 4.2.c and 4.2.d we have the widest scope of Bergson's teleology. The proportion between the cases of individual teleology in Aristotle is directly proportional to the cases of global teleology in Bergson. This is one of the differences between our two treatises on teleology, *Phys.II* and *EC*. Furthermore, in Bergson the global passages are held with the macrocosmos/microcosmos analogy and this is not the case in Aristotle. This has to do with the fact that Bergson was closer to the notion of *anima mundi* than Aristotle. In 4.2.b and c I have demonstrated the cosmological roots of Bergson's view of Life or biology in *EC*. In 4.2.d I show what Bergson does regarding history in *DS*. This global teleology is not inspired by any prime mover, as we found in Aristotle. So, this idea of the *élan* involves only its own perfective nature. This reformed model of immanent teleology challenges in other ways the classic one.

Regarding its origins, I have noted to what extent the tendency to perfection is rooted in nature. The impulse called Life fulfills a regular need, exigency or function of the cosmos. To this extent, it is global teleology with no go. It qualifies as primary teleology since the nature of Life, consciousness or the *élan* is regular, and not contingent. According to Bergson it does not change. The cosmos and Life are *always* the same.

Apart from completing Bergson's point, I have used the model of the secondary teleology, found in my Aristotelian account 2.1.d. This means that to some extent, the historical outcome of this force is to be interpreted retrospectively: because of its unpredictability (noticeable with the form of divergence) and uniqueness (every even in Life and history is unrepeatable). The plant form or any major historical event are all contingent. Bergson understands Life as "a tree" and took the Darwinian branching pattern. He transferred that to his account of history too. In sum, there are multiple lineages in Life. This nuances his view of global teleology.

At the same time as he deals with such a great amount of contingency, he points to one lineage that is not accidental, nor contingent, but necessary. It is the development of the central nervous system: it leads to man, the only success in nature. Success means fulfillment. Notice that human form as such is contingent, but its freedom, its creativity, means a goal in nature. The goal of nature is creativity, but not human beings as such. Evolution has not stopped yet. As I said, Bergson combines in his vision of the *élan* primary regular teleology and secondary teleology for contingent events. Contingency is not mere chance, but one main feature of Life. Bergson's contribution to the model of immanent teleology is complex and sophisticated.

This complexity is due to the aim of combining natural teleology and a hard theory of freedom. Teleology without a goal leads, as I have said, to one severe problem. Namely: it is impossible to define a possible Bergsonian goal of history, or even a goal of nature. Bergson applies coherently, I believe, ethics to cosmology. Free will overcomes any sort of limit. In cosmic terms, nature is also this openness to new evolution, to new transformation. Like any of our self-creations it is unpredictable. When we defend immanent teleology and creation at the same time, the teleology with no goal, or open progress, may arise at some point of the

discourse. While there is a component of creativity, the goal cannot be already finished. This can be expressed regarding human beings, in a eudaemonist framework (our goal is self-creation, and self-creation may imply completion and happiness). It can also be expressed in a cosmological framework: the Universe, and more concretely, Life, tends toward better expressions of its own essence.

This idea comes from Bergson's view of global teleology as something philosophically *sensible*. This is, I think, a contemporary feeling. Descartes and Bacon saw providential teleology as something useless, but not dangerous. Bergson in PR considers that global providential teleology tends to annul human freedom and that a *heroic* philosophy has to face it.<sup>789</sup> He coincides on that with Hartmann as well, and talks in the same terms.<sup>790</sup>

In different contemporary philosophers and historians, I find a certain reluctance regarding the question of global teleology, even in cases of non-providential teleology. At different levels, teleology is seen as a philosophical risk that involves a rejection of pluralism and that impoverishes richer speculative perspectives. Global teleology seems to impose tyrannically one principle upon the rest of nature. This is the case among recent interpreters of Aristotle, as we have seen in 2, but also regarding XIX history, closer to Bergson, like global teleologies of history<sup>791</sup> and evolutionary thought.<sup>792</sup> Global teleology is also considered to be potentially dangerous if it is taken to the political arena, where human individual goals can be subsumed for the sake of higher purposes. Partially, I believe that Bergson shares with contemporary intellectuals this suspicion regarding global overarching views, global teleologies among them. As we have seen, with a philosophical sensibility familiar to us nowadays, Bergson pointed out the risks of big systems with regard to ontological pluralism and also personal freedom. At the same time, he did not avoid the grandiose approach, although he endeavored to make it compatible with those two claims.

At the same time, Bergson openly defends global teleology against other authors like Driesch, as we have seen in several occasions from the first chapter. Bergson rejects global providential teleology in the case of Leibniz, for instance, and also Spencer's progressive view. He just promoted another kind of global teleology based on a vertical analogy, from the part (human) to the whole (nature). I find a certain tension in his work with regard to this question, but he manages to combine the global immanent drive and openness. Like every defender of the model of immanent teleology, he recognizes plurality and freedom but a global drive through Life and history. In any case, there is no need among the Bergsonian scholars to adapt his doctrine to the current ideology, and to overcome their reluctance if they find it is so preposterous that there are dominant lines in evolution. Anyway, we have seen

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<sup>789</sup> Bergson in PM, p. 123-124.

<sup>790</sup> In Hartmann: "The idea of providence is then an argument by human weakness, passivity and letting go. It is the tacit axiomatic characteristic of almost whole of the speculative metaphysics. It has to be openly said that that this venerable metaphysics has been essentially the point of view of the weak and retarded, almost a sole series of teleologisms. Its creators had worked mainly from theology. There is scant metaphysics straight and heroic" *Teleologisches Denken [El pensar teleológico]*. Trad. José Gaos. FCE, México, 1966, 383. My translation.

<sup>791</sup> In a recent book entitled *Dialectique sans téléologie. Hegel, Gentile, Adorno* one can read that "the Hegelian dialectique (...) has been regularly interpreted as *irremediably* teleological" and that is possible to "release it" from teleology. Buisnière, Evelyne. *Dialectique sans téléologie. Hegel, Gentile, Adorno*. Éditions Kimé, Paris, 2016. I quote from the back cover of the book. My emphasis.

<sup>792</sup> Richards, Robert. *The Meaning of Evolution: The Morphological Construction and Ideological reconstruction of Darwin's Theory*. University Chicago Press, 175-176.

that the roots of this global thinking are venerable and the approach at stake is, in many cases, modern and concerned with those problematic issues.

There is still a second problem for Bergson. I think this problem is even philosophically harder. The paradox of teleology without a *télos* entails a certain obscurity, but produced by clear ideas: namely, the perfective spontaneity of nature, the naturalistic conception of man, the need for a creative free will at the core of ethics and, ultimately cosmology. Bergson's teleology with no goal is the product of naturalizing the human being (there is a function in man, as in every organism) and humanizing nature (there is indetermination and creativity in Life).

But the second *aporia* comes from the tension within the theory of free will, the core of Bergson's thought. The problem is that one can ask whether there is a clash between his early approach to individual humans (from DI to IM) and his mature global approach (in EC, CV and DS). Roughly speaking, his mature grandiose understanding of nature as moved by a sort of soul of the world can be seen as a menace to the autonomy of the free individual human being. Bergson shows how teleology can be combined with unpredictability. This means that there is freedom and creativity. But in the end, it is unclear to what extent we are all independent, responsible sources of creativity. The genius is Bergson's paradigm of freedom, but in CV he says this is *closer* to "the source" of Life.<sup>793</sup> It could be interpreted as if human freedom was an emanation of Life, since Life comes to be such an overarching entity. Given that there is freedom in the world, we can ask *whose* freedom this is. In general, Bergson talks about an overarching *élan*, but eventually he talks about a personal *élan*: that of the genius.<sup>794</sup> It is difficult to know when Life's impulse finishes and when human responsibility starts. I think this problem is unsolved and certainly goes beyond my aim in this work.

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<sup>793</sup> CV, in ES, p. 32.

<sup>794</sup> DS, 2012, p. 80



## **Bibliography**

### **Bergson**

- (DI) *Essai sur les données immédiates de la conscience*. PUF, Paris, 2011  
—*Time and freewill. An essay on the immediate data of consciousness*. F. L. Pogson. Dover, NY, 2001
- (DS) *Les deux sources de la morale et de la religion*. PUF, Paris, 2008  
—*The two sources of morality and religion*. Trans. R. Ashley Audra and Cloudesley Brereton. University of Notre Dame Press, Indiana, 2002
- (DuSim) *Duration and simultaneity*. Leon Jacobson. The Library of Liberal Arts, NY, 1965
- (EC) *L'évolution créatrice*. PUF, Paris, 2007  
—*Creative evolution*. Trans. Arthur Mitchell. Henry Holt&CO, New York, 1911
- (EL) *The Philosophy of Poetry. The Genius of Lucretius*. Trans. Wade Baskin. Philosophical Library, New York, 1959
- (ES) *L'énergie spirituelle*. PUF, Paris, 1964  
—*Mind-energy*. H. Wildon Carr. Greenwood Press, London, 1975
- (LR) *Le rire. Essai sur la signification du comique*. PUF, Paris, 2007  
—*On laughter. An essay on the meaning of the comic*. Cloudesley Brereton and Fred Rothwell. Temple of Earth Publishing House, 1911.
- (MM) *Matière et mémoire*. PUF, Paris, 2012  
—*Matter and memory*. Trans. Nancy Margaret Paul and W. Scott Palmer. Zone Books, New York, 1991.
- (PM) *La pensée et le mouvant*. PUF, Paris, 2013
- (QA) *El concepto de lugar en Aristóteles*. Trans. Antonio Dopazo. Encuentro, Madrid, 2014  
—*Creative mind*. Trans. Mabelle Andison. Philosophical Library, New York, 1946  
—*Écrits philosophiques*. PUF, Paris, 2011  
—*Mélanges*, PUF, Paris, 1972  
—*Cours sur la philosophie grecque*. IV. PUF, Paris, 2000  
—*L'évolution du problème de la liberté. Course au Collège de France 1904-1905*. PUF, Paris, 2017  
—*Histoire de l'idée de temps. Course au Collège de France 1903-1904*. PUF, Paris, 2016

### **Aristotle**

- (Cat) *Categories*. E. M. Edghill. Aristotle. *Works*. Ed. Ross.  
—J. L. Ackrill. *Works of Aristotle*. Ed. Jonathan Barnes. Princeton University Press, 1991  
—*Categorías*. Luis M. Valdés Villanueva. Tecnos, Madrid, 2012
- (DA) *Acerca del alma*. Trans Tomás Calvo. Gredos, Madrid, 2003  
—*De Anima*. Ed. W. D. Ross. Oxford Classical Texts, 1956  
—*De anima*. Mark Shiffman. Focus Publishing, Newburyport, 2012  
—*De l'âme*. Trad. A. Jannone. Belles Lettres, Paris, 1966  
—*On the soul*. J. A. Smith in Aristotle. *Works of Aristotle*. Ed. Jonathan Barnes. Princeton University Press, 1991
- (DC) *Acerca del cielo. Metereológicos*. Trad. Miguel Candel. Gredos, Madrid, 1996  
—*On the heavens*. J. L. Stocks. Aristotle. *Works of Aristotle*. Ed. Jonathan Barnes. Princeton University Press, 1991  
—*Traité du ciel*. Ed. Bil. Trans. Catherine Dalimier and Pierre Pellegrin. Flammarion, Paris, 2004
- (EE) *Eudemian Ethics*. J. Soloman. Aristotle. *Works of Aristotle*. Ed. Jonathan Barnes. Princeton University Press, 1991
- (GA) *On the generation of animals*. Trans. Arthur Platt. *Works of Aristotle*. Ed. Jonathan Barnes. Princeton University Press, 1991

- (GC) *Acerca de la generación y la corrupción. Tratados breves de historia natural*. Trad. Ernesto La Croce y Alberto Bernabé, Gredos, Madrid, 1998  
 — *On generation and corruption*. H. H. Joachim. *Works of Aristotle*. Ed. Jonathan Barnes. Princeton University Press, 1991
- (HA) *Historia animalium*. Trans. D'Arcy Wentworth Thompson. *Works of Aristotle*, vol. IV. Clarendon Press, Oxford 1910
- (Met) *Metafísica*. Ed. tril. Trad. Valentín García Yebra. Gredos, Madrid, 1998  
*Metaphysica*. Ed. W. Jaeger. Oxford Classical Texts, 1963  
 — *Metaphysics*. Trans. W. D. Ross. Clarendon Press, Oxford, 1924.  
 — *Metaphysics*. Trans. Hugh Lawson-Tancred. Penguin Books, London, 2004
- (Meteo) *Metereology*. E. Webster, University of Adelaide, 2015
- (NE) *The Nichomachean Ethics*. Trans. David Ross. *Works of Aristotle*. Ed. J. Barnes. Princeton University Press. NJ. 1991  
 — *Nicomachean Ethics*. Trans. Roger Crisp. Cambridge University Press, 2004  
 — *Ética a Nicómaco*. Ed. Bil. Trans. María Araujo and Julián Marías. CEPC, Madrid, 2009
- (PA) *Les parties des animaux*. Ed. Bil. Trad. et présentation Pierre Pellegrin. G F Flammarion, Paris, 2011  
 — *Parts of animals*. Trans. A. L. Peck. Loeb Classical Library, Harvard University Press, 1961
- (Phys) *Física*. Trad. Guillermo de Echandía. Gredos, Madrid, 1998  
 — *Física*. I-II. Trans. and comment. Marcelo Boeri. Biblos, Buenos Aires, 1993  
 — *Physics*. Robin Waterfield. Oxford University Press, 2008  
 — *Physica*. Ed. W. D. Ross. Oxford Classical Texts, 1950  
 — *Physica*. Trans. R. Hardie and R. Gaye. *Works of Aristotle*, Ed. Jonathan Barnes. Princeton University Press, 1991  
 — *Physics I and II*. Trans and Commentary by William Charlton. Clarendon Press, Oxford, 2006  
 — *Physique*. I-IV. Ed. Bil. Trans. Henri Carteron. Belles Lettres, Paris, 1966  
 — *Physique*. V-VIII. Ed. Bil. Trans. Henri Carteron. Belles Lettres, Paris, 1969
- (Poet) *Poetica*. Ed. Tril. Trans. Valentín García Yebra. Gredos, Madrid, 1974  
 — *Poetics*. Greek Text and English commentary by D. W. Lucas. Oxford University Press, 1968.  
 — *Poetics*. Trans. Ingram Bywater. *Works of Aristotle*. Clarendon Press, Oxford, . *Works of Aristotle*, Ed. Jonathan Barnes. Princeton University Press, 1991
- (Pol) *Politica*. Ed. W. D. Ross. Oxford Classical Texts, 1957.  
 — *Politica*. Trans. Benjamin Jowett. *Works of Aristotle*. Clarendon Press, Oxford, 1921. Also in *Aristotle. Complete Works*. Ed. J. Barnes. Princeton University Press, NJ, 1991  
 — *Politics*. H Rackham. Harvard University Press, 1959  
 — *Politics*. C.D.C.Reeve. Hackett, USA, 1998

## On Bergson

- Aaron, Raymond. “Note sur Bergson et l’histoire”. *Études bergsoniennes*, IV, 1956
- Azouvi, François. *La gloire de Bergson*. Gallimard, Paris, 2007
- Berthélot. *Un romantisme utilitaire*. Félix Alcan, Paris, 1913
- Bréhier, Émile. “Images plotiniennes, images bergsoniennes”. *Les études bergsoniennes*. Albin Michel, 1949
- Bordrom, Jean-François. *Le possible et le réel. Lire Bergson*. Ed. Cossutta, Frédéric. PUF, Paris, 1998.
- Burnet, John. “‘Quid Aristoteles de loco senserit’ by H. Bergson”. *The Classical Review*, Vol. 6, No. 7. Jul., 1892
- Caeymaex, Florence. “La société sortie des mains de la nature. Nature et biologie dans *Les deux sources*”, *Annales bergsoniennes*. Vol V. PUF, Paris, 2012
- Cassirer, Ernst. *Antropología filosófica*. Trad. Eugenio Ímaz. FCE, México, 2011  
 — “L’éthique et la philosophie de la religion de Bergson”. Trad. H. Fujita. *Annales bergsoniennes*, III. PUF, Paris, 2007

- Magda Costa Carvalho and M. Patrão Neves. "Building the "True Evolutionism": Darwin's Impact on Henri Bergson's Thought". *Revista Portuguesa de Filosofia*. T. 66, Fasc. 3, Evolução, Ética e Cultura / Evolution, Ethics and Culture, 2010
- Conry, Yvette. *L'évolution créatrice. Investigations critiques*. L'Harmattan, Paris, 2005
- Cunningham, G. W. «Bergson's conception of finality». *Philosophical Review* 23 (6), 1914.
- Cassirer, Ernst. "L'éthique et la philosophie de la religion de Bergson". Trad. H. Fujita. *Annales bergsoniennes*, III. PUF, Paris, 2007
- Chedin, Jean-Louis, "Deux conceptions du possible: Bergson et Aristote", in *Revue de l'enseignement philosophique*, t. XXXVII, n° 2, décembre 1986-janvier 1987
- Chevalier, Jacques. *Bergson*. Plon, Paris, 1947
- Entretiens avec Bergson*. Plon, Paris, 1959
- Deleuze, Gilles. *Le bergsonisme*. PUF, Paris, 2014
- Driesch, Hans. "Henri Bergson : le philosophe biologique" in *Annales Bergsoniennes*, VII. PUF, Paris, 2014
- Dopazo, Antonio. *Bergson y el problema de la creación*. Doctoral dissertation. Universidad Complutense de Madrid, 2016
- François, Arnaud. "Ce que Bergson entend par 'monisme'. Bergson et Haeckel". *Lire Bergson*, PUF, 2011
- "Commentaire", *L'évolution créatrice. Études & Commentaires*. Ed. A. François. Vrin, Paris, 2010
- "Les sources biologiques de *L'Évolution créatrice*." *Annales bergsoniennes*. PUF, Paris, 2008
- Gilson, Étienne. *D'Aristote à Darwin et retour. Essai sur quelques constantes de la biophilosophie*. [From Aristotle to Darwin and back again.] Trans. John Lyon. Notre Dame Press, 1981
- Le philosophe et la théologie*. Vrin, Paris, 2005
- Gouhier, Henri. *Bergson et le Christ des Évangiles*. Vrin, Paris, 1987; and 1999
- Bergson dans l'histoire de la pensée occidentale*. Vrin, 1989
- Gunter, Peter. "Bergson and the war against nature". *The new Bergson*. Ed. John Mullarkey. Manchester University Press, 1999
- Horkheimer, Max. "On Bergson's metaphysics of time". Trans. Frances Stracey. *Radical Philosophy*, 131. May/June 2005
- Hude, H. *Bergson I et II*. Éditions universitaires, Paris, 1989 et 1990
- Jankélévitch, Vladimir. *Bergson*. PUF, Paris, 2008
- "Les deux sources de la morale et de la religion d'après M. Bergson", *Revue de métaphysique et de morale*, 1933
- Kanamori, Osamu. Also "L'évolution créatrice et le néo-Lamarckisme" in *L'évolution créatrice. Études & Commentaires*. Ed. A. François. Vrin, Paris, 2010
- Keck, Frédérick. "Bergson et l'anthropologie, le problème de l'humanité dans 'Les deux sources de la morale et de la religion'" in *Annales bergsoniennes*, vol. I. PUF, 2002
- Kisukidi, Nadia, *Bergson ou l'humanité créatrice*, CNRS, Paris, 2013
- Kolakowski, Lezlew. *Bergson*. St Augustine's Press, 1985
- Lapoujade, *Puissances du temps. Versions de Bergson*, Paris Éditions de Minuit, Paris, 2010
- Lacey, R. *Bergson*. Routledge, London, 1989
- Lacombe, Roger. *Psychologie bergsonienne. Étude critique*. Félix Alcan, 1933
- Lefèbvre, Frédérick. *Une heure avec*, t. III. Gallimard, 1927
- Le Roy, Édouard. *Une philosophie nouvelle*. Félix Alcan, Paris, 1913
- Lovejoy, Arthur. *Bergson and romantic evolutionism*. UCP, California, 1914
- Maire, Gilbert. *Bergson mon maître*. Editions Bernard Grasset, Paris, 1936
- Marietti, Angèle. *Les formes du mouvement chez Bergson*. Le Puy, 1953
- Marrati, Paola. "Time, life, concepts: the newness of Bergson". Vol. 120. n°5. The John Hopkins University Press, 2005
- Miquel, Pierre-Antoine. "Chapitre III. De la signification de la vie. L'ordre de la nature et la forme de l'intelligence". *L'évolution créatrice. Études & Commentaires*. Ed. A. François. Vrin, Paris, 2010
- "Bergson and Darwin: for an immanentist to an emergentist approach to evolution". *Substance*, vol. 36, number, 3, 2007

- with M. Vaughan, M-P. Miquel. “Responses to evolution”. *Bergsonism, phenomenology and responses to modern science*. Ed. Keith-Ansell Pearson and Alan Schrift. Routledge, London, 2010
- Montebello, Pierre. *L'autre métaphysique. Essai sur Ravaisson, Tarde, Nietzsche et Bergson*. Les presses du réel, Dijon, 2003
- “La question du finalisme dans le premier chapitre de *L'évolution créatrice*” dans *Disseminations de L'évolution créatrice*. Ed. Shin Abiko, Isashi Fujita and Naoki Sugiyama. Hildesheim: G. Olms, 2012.
- Mossé-Bastide, Rose Marie. *Bergson et Plotin*. PUF, Paris, 1959
- Pearson, Keith-Ansell. “Bergson and creative evolution/involution: Exposing the transcendental illusion of organismic life” in *The new Bergson*. Ed. John Mullarkey. Manchester University Press, 1999
- Philosophy and the adventure of the virtual. Bergson and the time of life*. Routledge, London, 2002
- with M. Vaughan, M-P. Miquel. “Responses to evolution”. *Bergsonism, phenomenology and responses to modern science*. Ed. Keith-Ansell Pearson and Alan Schrift. Routledge, London, 2010
- Polin, Raymond. “Y a-t-il chez Bergson une philosophie de l'histoire?” *Études bergsoniennes*, IV, 1956.
- Riquier, Camille. *Archéologie de Bergson*. PUF, Paris, 2009
- “Causalité et création: l'élan vital contre Plotin et la cause emanative”. *Annales bergsoniennes*, IV. PUF, 2008
- “Vie et liberté”, *Études & Commentaires*. Ed. A. François. Vrin, Paris, 2010
- Rolland, E. *La finalité morale dans le bergsonisme*. Gabriel Beauchesne et ses fils, Paris, 1937
- Russell, Bertrand. Chapter 28. “Bergson” in *The History of Western Philosophy*. Routledge, 2004
- Santa Cruz, María Isabel. “Bergson y Plotino” in *¿La inactualidad del bergsonismo?* Colihue. Buenos Aires, 2008
- Séris, Jean-Pierre. *La technique*. Cap. IV. “Techniques et machines”. PUF, Paris, 1994
- Soulez, Philippe. *Bergson politique*. PUF, Paris, 1989
- Soulez, Philippe/ Worms, Frédéric. *Bergson*. PUF, Paris, 2002
- Švec, Ondrej. “La fragilité de la démocratie face au défi de la technique”. *Annales bergsoniennes*. Vol V. PUF, Paris, 2012
- Thibaudet, Albert. *Le bergsonisme in Trente ans de vie française*. III. NRF, Gallimard, 1923.
- Tonquédec, Joseph. “Comment interpreter l'ordre du monde?”, in *Sur la philosophie bergsonienne*. Beauchesne, 1936
- Tresmontant, Claude. “Deux métaphysiques bergsoniennes?” *Revue de métaphysique bergsonienne*, Paris, 1959.
- Troitignon, Pierre. *L'idée de vie chez Bergson*, PUF, Paris, 1968.
- Viellard Baron, Jean-Louis. *Le secret de Bergson*. Éditions du Félin, Paris, 2013.
- Vollet Matthias, “Bergson historien de la philosophie”. *L'évolution créatrice. Études & Commentaires*. Ed. A. François. Vrin, Paris, 2010.
- “Creativité comme tendencialité”, Matthias Vollet. *Bergson*, Ed. Camille Riquier. Cerf, Paris, 2012.
- “La vitalisation de la tendance: de Leibniz à Bergson”. *Annales Bergsoniennes*, IV, PUF, Paris, 2008.
- Waszkinel, Romuald et Hejno, Eugeniusz. “L'inspiration aristotélicienne de la métaphysique de Bergson”. *Revue Philosophique de Louvain*. vol. 89, n°82, 1991.
- Worms, Frédéric. *Bergson ou les deux sens de la vie*. PUF, Paris, 2004.
- Introduction à Matière et mémoire*. PUF, Paris, 1997.
- Vaughan, Michael, with K-A Pearson, P-A. Miquel. “Responses to evolution”. *Bergsonism, phenomenology and responses to modern science*. Ed. Keith-Ansell Pearson and Alan Schrift. Routledge, London, 2010
- VVAA. *L'évolution créatrice de Bergson. Commentaires*. Vrin, 2010.
- Zanfi, Caterina. *Bergson, la tecnica, la guerra*. Bononia, Bolonia University Press, 2009.

## On Aristotle

- Allen, “Aristotle on chance as an accidental cause. *Physics II*”, in *Aristotle’s ‘Physics’. A critical guide*. Ed. Mariska Leunissen. Cambridge University Press, 2015.
- Aubenque, Pierre. *Le probleme de l’être chez Aristote*. [*El problema del ser en Aristóteles*] Trans. Vidal Peña. Taurus, Madrid, 1981.
- Barnes, J. *Aristotle. A very short introduction*. Oxford University Press, 2000.
- Balme, D. “Teleology and necessity”, in *Philosophical Issues in Aristotle Biology*. Ed. A. Gotthelf and J. G. Lennox (eds.), Cambridge University Press, 1987
- Bastit, M. “Les quatre causes de l’être selon la philosophie première d’Aristote”. Louvain-la-Neuve, Ed. Peeters, 2002.
- Blyth, Dougal. *Aristotle’s Ever-turning World in Physics 8: Analysis and Commentary*. Brill, Leiden, 2015
- Berti, Enrico. “Ancora sulla causalità del motore immobile”. *Méthexis XX*, 2007
- “La finalità in Aristotele”. *Fondamenti*, Pisa, 1989
- Il pensiero politico di Aristotele*. [*El pensamiento político de Aristóteles*]. Trans. Helena Aguila Ruzzola. Gredos, Madrid, 2012
- Boeri, Marcelo. “¿Cuán platónica es la psicología aristotélica? Reflexiones sobre la presencia de la psicología platónica en el proyecto psicológico de Aristóteles”. *La filosofía como ejercicio del render ragione*. ED. Lidia Palumbo. Loffredo editore
- “Chance and teleology in Aristotle’s *Physics*”. *International philosophical quarterly*. XXXV, N°137, 1995
- “Aristóteles contra Parménides: el problema del cambio y la posibilidad de la ciencia física”. *Tópicos 30 bis*, 2006.
- Física*. Traducción, introducción y comentarios. Editorial Biblos, Buenos Aires, 1993.
- “Introducción” in *Acerca del alma*. Trad. Marcelo Boeri. Colihue, Buenos Aires, 2010.
- Bolton, Robert. “The origins of Aristotle’s natural teleology in *Physics II*” in *Aristotle’s ‘Physics’. A critical guide*. Ed. Mariska Leunissen. Cambridge University Press, 2015.
- Boylan, Michael. “Mechanism and teleology in Aristotle’s biology”. *Apeiron*, 15, 2. 1981
- Brague, Rémie. *Aristote et la question du monde*. PUF, Paris, 1988
- Broadie, Sarah. “Nature and craft in Aristotelian teleology”. *Aristotle and beyond. Essays on metaphysics and ethics*. Cambridge University Press, 2007.
- Calvo, Tomás. “Introducción” in *Acerca del alma*. Trans. Tomás Calvo. Gredos, Madrid, 2003.
- Aristóteles y el aristotelismo*. Akal, Madrid, 2008
- Charles, David. AITIA I. “Les quatres causes d’Aristote: origines et interpretations”. Ed. Cristina Viano, Carlo Natali, Marco Zingano. Peeters, Leuven, 2013
- Cooper, John. “Aristotle on natural teleology”. In M. Schofield & M. C. Nussbaum (eds.) *Language and Logos*. Cambridge University Press, 1982.
- De Haas, F. A. J. “Modifications of the Method of Inquiry in Aristotle’s *Physics I.1*. An essay on the dynamics of the ancient commentary tradition”. *The Dynamics of Aristotelian Natural Philosophy*. Eds C. H. Leijenhorst, C. H. Lüthy and J. M. M. H. Thijssen. Leiden, Brill, 2002, pp. 31-56.
- “Potentiality in Aristotle’s psychology and ethics”. *Handbook of Potentiality*. Ed. K. Engelhard and M. Quante. Dordrecht, Springer, 2018, pp. 71-91.
- Dudley, John. *Aristotle’s concept of chance: accidents, cause, necessity and determinism*. Suny, New York, 2012
- Düring, Ingemar. *Aristoteles. Darstellung und interpretation seines Denkens*. [*Aristotele*]. Trans. Pierluigi Donini. Mursia, 1976
- Halliwell, S. *The aesthetics of mimesis*. Princeton University Press. Halliwell, 2002.
- Hamlyn, D.W. “Aristotle on Form”, in *Aristotle on Nature and living things. Presented to David Balme on his seventh birthday*. Ed. Allan Gotthelf. Bristol Classical Press, 1985
- Gelber, Jessica. “Two ways of being for an end”. *Phronesis* 63, 2018
- Gotthelf, Allan. “Aristotle’s conception of final causality” in *Teleology, first principles, and scientific method in Aristotle’s biology*. Oxford Aristotle Studies, 2012
- Guthrie, G. K. *A history of Greek philosophy*. V-VI. Cambridge, 1981.

- The Greek Philosophers from Thales to Aristotle*. Routledge, London, 2012
- Jaeger, Werner. *Aristoteles. Grundlegung einer Geschichte seiner Entwicklung*. [Aristóteles]. Trad. José Gaos. FCE, México, 2001
- Johnson, Monte Ransome. *Aristotle on teleology*. Oxford Aristotle Studies, 2005.
- Judson, Lindsay. “Aristotelian teleology”. *Oxford Studies in Ancient Philosophy* 29:341-66, 2005
- Kahn, Charles. “The place of the prime mover in Aristotle’s teleology”. *Aristotle on nature and living things*. Ed. A. Gotthelf. Bristol, 1985.
- Kenny, Anthony. *Aristotle on the perfect life*. Clarendon Press, Oxford, 1992
- Kullmann, W. “Different concepts of the final cause in Aristotle” in *Aristotle on nature and living things*, 1987
- Laks, André. “Le moteur immobile”. *Lire Aristote*. Ed. Enrico Berti, Michel Crubellier. PUF, Paris, 2016
- Lang, Helen. *The Order of Nature in Aristotle's Physics: Place and the Elements*. Cambridge: Cambridge University Press, 1998
- Lennox, James. “Are Aristotelian species eternal?”, *Aristotle on nature and living things*. Bristol Classical Press, 1985
- On Aristotle’s animal parts*. (Comentary. Book One) Clarence, Oxford.
- Lerner, M. *Recherches sur la notion de la finalité chez Aristote*, PUF, Paris, 1969.
- Leunissen, Mariska. *Explanation and teleology in Aristotle’s science of nature*. Cambridge University Press, 2010.
- Lloyd, G. E. R. *Polarity and analogy. Two types of argumentation in early greek thought*. [Polaridad y analogía]. Trans. Luis Vega. Taurus, Madrid, 1987
- Lucas, D. W. *Poetics*. Greek Text and English commentary. Oxford University Press, 1968.
- Mansion, Augustin. *Introduction à la physique aristotélicienne*. Éditions de l’institut supérieur de philosophie. Louvain-la-Neuve, 1987
- Mirus, Christopher. “The metaphysical roots of Aristotle’s teleology”. *The review of Metaphysics* 57. June, 2004
- “Aristotle’s *agathon*” by Christopher Mirus. *The review of Metaphysics* 57. June, 2004
- Natali, Carlo. “Problemas de la noción de causa final en Aristóteles”. *Anuario Filosófico*, 32, 1999
- Nussbaum. *Aristotle De motu animalium. Interpretive essays*. Princeton University Press, 1978
- Oates, *Aristotle and the problem of value*, Oates, Princeton, University Press, 1963
- O’Rourke, Fran. “Aristotle and the metaphysics of evolution”. *The review of metaphysics*. 58: 1. 2004
- Owens, Joseph “Teleology of nature in Aristotle”. *Some philosophical issues in moral matters. The collected ethical writings of Joseph Owens*. Ed. D. Billy-T. Kennedy. Editiones Academiae Alphonsonianae. Edalcalf, Roma, 1996
- Pellegrin, Pierre. “Introduction”, in *Les parties des animaux*, by Aristotle. G F Flammarion. Paris, 2011
- Powell, C. Thomas. “Why Aristotle Has No Philosophy of History?”. *History of Philosophy Quarterly*. Vol. 4, nº. 3, 1987.
- Quarantotto, Diana. *Causa finale sostanza essenza in Aristotele. Saggio sulla struttura dei processi teleologici naturali e sulla funzione del telos*. Bibliopolio, Napoli, 2005.
- Ravaisson, Félix. *Essai sur la Métaphysique d'Aristote*. Éditions du Cerf, Paris, 2007.
- Richardson, Henry. “Degrees of finality and the highest good in Aristotle”. *Journal of the History of Philosophy*, 1992.
- Richardson Lear, Gabriel. *Happy lives and the Highest Good*. Princeton University Press, New Jersey, 2004
- Rossi, Gabriela. “Aristóteles y la lluvia, una vez más”. *Diánoia*, vol. LV, nº. 65, 2010.
- Sedley, David. “Is Aristotle’s teleology anthropocentric?” *Phronesis*. Vol. 36. Nº2, 1991
- “VI. Aristotle”, in *Creationism and its critics in antiquity*. California University Press, 2007
- “Chapter 11”, in *Aristotle’s Metaphysics Lambda. Symposium Aristotelicum*. Ed. M. Frede/ D. Charles. Clarendon Press Oxford, 2000
- “Teleology, Aristotelian and Platonic”, in *Nature and life in Aristotle: Essays in honor of Allan Gotthelf*, ed. James Lennox and Robert Bolton. Cambridge University Press, 2010.

- Scharle, Margaret. “Elemental teleology in Aristotle’s *Physics* 2.8”. *Oxford Studies in Ancient Philosophy* XXXIV, May 2008
- “The Role of Material and Efficient Causes in Aristotle’s Natural Teleology”, *Apeiron* 41/3, September, 2008
- Chapter 5: “Man from man, but not bed from bed: Nature, art and chance in *Physics* II”, in *Aristotle’s ‘Physics’. A critical guide*. Ed. Mariska Leunissen. Cambridge University Press, 2015.
- Solinas, Marco. *From Aristotle's teleology to Darwin's genealogy*. Trad. James Douglas. Houndsmill, Basingstoke, Hampshire ; New York, NY, Palgrave Macmillan, 2015
- Sorabji, Richard. *Necessity, Cause, and Blame: Perspectives on Aristotle's Theory*. Cornell University Press, NY, 1980
- Vigo, Alejandro. *Aristóteles*. IES, Santiago de Chile, 2007
- Whalley, George in *Aristotle’s Poetics*. Translated and with commentary by George Whalley. Ed. John Baxter and Patrick Atherton. McGill-Queen's University Press Montreal & Kingston, London, Buffalo, 1997
- Weiss, Helene. “Aristotle’s teleology and Uexküll’s theory of living nature”. *Classical Quarterly* 42 (1-2), 1948.
- Wieland, Wolfgang. “The problem of teleology”. *Articles on Aristotle. I. Science*. Ed. Jonathan Barnes, Malcolm Schofield, Richard Sorabji. Duckworth, London, 1975
- Witt, Charlotte. “In defense of the craft analogy: artifacts and natural teleology”, in *Aristotle’s ‘Physics’. A critical guide*. Ed. Mariska Leunissen. Cambridge University Press, 2015.
- VVA. *Aristote au XIX, siècle*. Édité par Denis Thouard. L’Harmattan, France, 2005
- Wolff, Francis. *Aristote et la politique*. PUF, Paris, 2012
- “L’animal et le dieu: deux modèles pour l’homme”. *L’être, l’homme, le disciple*. PUF, Paris, 2000

## Others

- Alexander of Aphrodisias. *Traité du destin*. Ed. bil. Trans. Pierre Thillet. Belles Lettres, Paris, 2011.
- Ariew, André. Chap. 9. “Teleology”. *The Cambridge Companion to the Philosophy of Biology*. Edited by David L. Hull, Michael Ruse, Cambridge, 2007
- Aubenque, Pierre. “Ravaisson interprète d’Aristote”, *Les études philosophiques*, 4/ 1984. Also in ed. Thouard, Denis. *Aristote au XIX siècle*. Presses Universitaires du Septentrion. Villeneuve d’Ascq Cédex. 2005
- Barthelemy Madaule. *Lamarck the mythical precursor: a study of the relations between science and ideology*. Translated by M. H. Shank. Cambridge, Mass., and London: The M.I.T. Press, 1982
- Beaufret, Jean. *Notes sur la philosophie en France au XIX<sup>e</sup> siècle. De Maine de Biran à Bergson*. Vrin, Paris, 1984
- Benjamin, Walter. *Baudelaire*. Suhrkamp, Frankfurt am Main, 2017
- Bowler, Peter. “Edward Drinker Cope and the changing structure of evolutionary theory”. *Peter Bowler. Isis*, vol 68, n.2, jun, 1977
- *The eclipse of Darwinism: anti-Darwinian evolution theories in the decades around 1900*. Johns Hopkins, Baltimore, 2006.
- Buissière, Evelyne. *Dialectique sans téléologie. Hegel, Gentile, Adorno*. Éditions Kimé, Paris, 2016.
- Richard W. Burkhardt. *Lamarck. The spirit of system*. Harvard University Press, 1977.
- Bury, J. B. *The idea of progress. An inquiry and growth*. Dover, New York, 1955
- Caponi, Gustavo “Cap. 1. Contra la lectura adaptacionista de Lamarck” in *Filosofía, darwinismo y evolución*. Universidad Nacional de Colombia, Bogotá, 2007
- Cassirer, Ernst. *Antropología filosófica*. Trad. Eugenio Ímaz. FCE, México, 2011
- Cicero. *On the nature of the gods*. Francis Brooks. Methuen, London, 1896
- Cohen, Morris. *Reason and nature. An essay on the meaning of scientific method*. [Razón y naturaleza. Un ensayo sobre el significado del método científico] Trad. Eduardo Loedel. Buenos Aires, Paidós, 1965.
- Conger, George. *Theories of macrocosms and microcosms in the history of philosophy*. Columbia University Press, NY, 1922

- Contini, Annamaria. “Ravaisson lecteur d’Aristote: esthétique et connaissance du vivant”. Ed. Denis Thouard. *Aristote au XIX siècle*. Presses Universitaires du Septentrion. Villeneuve d’Ascq Cédex. 2005
- Cope, Edward. *The origin of the fittest. Essays on evolution*. Appleton and Company, New York, 1887.
- Theology of evolution*. Arnold, and Company, Philadelphia, 1887
- Primary factors of organic evolution* (1896). The Open Court Publishing Company, Chicago, 1896.
- Cuénot, Lucien. *Invention et finalité*. Flammarion, Paris, 1941
- Darwin, Charles. *The origin of species*. Chapter IV. *Darwin*. Encyclopedia Britannica, Chicago-London, 1952
- Descartes. Descartes, René. *Principes de la philosophie* in *Oeuvres complètes*. Vrin, Paris, 1996
- Discours de la méthode* in *Oeuvres complètes*. Vrin, Paris, 1996
- Dobzhansky, Theodosius. “Creative evolution”. *Diogenes* 58:62, 1967
- Driesch, Hans. *The history & theory of vitalism*. Trans. Odgen, C. K. MacMillan&CO, London, 1914
- Francis, Mark. *Herbert Spencer and the Invention of Modern Life*. Newcastle UK: Acumen Publishing, 2007
- Freeman, Derek. “The Evolutionary theories of Charles Darwin and Herbert Spencer”. *Current Anthropology*. Vo. 15, n°3, sept, 1974
- Garrigou-Lagrange. *Le réalisme du principe de finalité. [El realismo del principio de finalidad]*. Trans. Joaquín Ferrandis. Desclée de Brouwer, Buenos Aires, 1946
- Gay, Hannah. “Explaining the universe: Herbert Spencer’s attempt to synthesize political and evolutionary ideas”. *Hannah Gay. Endeavour*, 23/2, 1999
- Gothelf, Allan. “Darwin on Aristotle”. *Journal of the History of Biology*, vol. 32, March, 1999.
- Haines, Valerie. “Spencer, Darwin and the Question of Reciprocal Influence”, Valerie Haines, Valerie. *Journal of the History of Biology*, vol. 24, n° 3, 1991.
- Hartmann, Nicolai. *Teleologisches Denken, [El pensar teleológico]*. Trad. José Gaos. FCE, México, 1966
- Hadot, Pierre. “Introduction”, *Le Néoplatonisme*, CNRS, 1971
- Heidegger, Martin. *Die Grundproblemen der Phenomenologie*. Vittorio Klostermann, Frankfurt am Main, 2005
- Sein und Zeit*. Max Niemeyer Verlag Tübingen, 1967
- Spencer, Herbert. *The first principles*. Williams & Norgate, London, 1867
- Janet, Paul. *Les causes finales*, Germer Bailliere, Paris, 1876
- Janicaud, Dominique. *Ravaisson et la métaphysique. Une généalogie du spiritualisme français*. Vrin. Vrin, 1997.
- Jaspers, Karl. *Vom Ursprung und Ziel der Geschichte [Origen y meta de la historia]*. Trans. Fernando Vela. Acantilado, Barcelona, 2017
- Jonas, Hans. *Das Prinzip Leben. [El principio vida]*. Trans. José Mardomingo. Trotta, Madrid, 2000
- Lamarck. *La philosophie zoologique*. Poche, Paris, 1999
- Leibniz, Gottfried. *Discourse de métaphysique*. Gallimard, Paris, 1995
- Lennox, James. “Darwin was a Teleologist”. *Biology and Philosophy*. 8, 1998
- Lewens, Tim. Chapter 17. “The *Origin* and Philosophy” in *The Cambridge Companion to the Origin of Species*. Ed. Michael Ruse and Robert J. Richards. Cambridge, 2009.
- Linden, Jan-Ivar. “Fin, finitude et désir infini. Quelques remarques sur l’aristotélisme de Ravaisson”. *Aristote au XIX, siècle*. Édité par Denis Thouard. L’Harmattan, France, 2005
- Lovejoy, Arthur. *The great chain of being: a study of the history of an idea*. Harvard University Press, Cambridge, 1964.
- Lucretius. *On the nature of the Universe*. Trans. Ronald Melville. Oxford University Press, 1997.
- Mayr, Ernst. *The growth of biological thought. Diversity, evolution and inheritance*. 1982
- What makes biology unique?* Chapter.2 « Evolutionary biology as historical science». Harvard, 2007.
- Mondolfo, Rodolfo. *Comprensión del sujeto humano en la cultura antigua*. Buenos Aires.



- Problemas y métodos de la investigación en la historia de la filosofía*. Universidad de Tucumán, Argentina, 1949
- Monod. *L'hasard et la nécessité*. [El azar y la necesidad. Ensayo sobre la filosofía natural de la biología moderna]. Trans. Francisco Ferrer Lerín, Seix Barral, Barcelona, 1971
- Nietzsche, Friedrich. *Morgenrötte* Nietzsche, Friedrich. *Morgenröte*. KSA, 3, Walter de Gruyter, München, 2016
- Jenseits von Gut und Böse*. KSA, 5. Walter de Gruyter, München, 2016
- Zur Genealogie der Moral*. KSA, 5. Walter de Gruyter, München, 2016
- Nisbet, Robert. *History of the idea of progress [Historia de la idea de progreso]*. Gedisa, Barcelona, 1991
- Plato. *Clitopho, Respublica, Timaeus, Criticas. Platonis Opera*. IV. Oxford Classical Texts
- Timaeus and Critias*. Trans. H. Lee. Penguin Classics, London, 1971
- Timeo*. Ed. bil. Trans. José María Zamora. Notas. Luc Brisson. Abada, Madrid, 2010
- The statesman*. Trans. Robin Waterfield. Cambridge University Press, 2010.
- Fedón*. Trans. Enrique Ramos Jurado. Alma Mater. CSIC, Madrid, 2002
- Laws*. Trans. Trevor Saunders. Penguin Classics, London, 2005.
- Plotinus. *Troisième Ennéade*. Ed bil. Intro. Laurent, Jérôme. Trans. Émile Bréhier. Belles Lettres, Paris, 1999
- Sartre, Jean-Paul. *L'existentialisme est un humanisme*. Folio. Gallimard, Paris, 1996
- Scheler, Max. *Die Stellung des Menschen im Kosmos*. Bouvier Verlag, Bonn, 2010
- Séris, Jean-Pierre. *La technique*. Cap. IV. «Techniques et machines». PUF, Paris, 1994
- Simpson, George G. *The meaning of evolution. A study of the history of life and its significance for man*. Yale University Press, 1960.
- Sober, Elliot. “Metaphysical and epistemological issues”, in *The Cambridge Companion to Darwin*. Edited by Jonathan Hodge and Gregory Radick. Cambridge, 2009.
- Spaemann, Robert. Reinhard Löw. *Die Frage Wozu?* Broschiert, Frankfurt, 1996. *Fini naturali. Storia & riscoperta del pensiero teleologico*. Trans. it. Leonardo Allodi and Giacomo Miranda it. Ares, Rome, 2013
- Spencer, Herbert. *First principles*, Watts and Co, London, 1862
- Principles of biology*, Watts and Co, London, 1864
- Spinoza. *L'éthique*. Trans. Caillois, Roland. Gallimard, Paris, 1994
- Stoicorum Veterum Fragmenta*. Vol. II. Ed. Von Arnim. Teubner, Stuttgart, 1964
- Ravaisson, Félix. *De l'habitude*. Paris, PUF, 1999
- Essai sur la 'Métaphysique' d'Aristote* (see Bibliography “On Aristotle”)
- La philosophie en France au XIX<sup>e</sup> siècle*, Paris, Fayard, 1984
- Testament philosophique*. Broché, Paris, 2008
- Richards, Robert. *The meaning of evolution: The morphological construction and ideological reconstruction of Darwin's theory*. University Chicago Press, 1992
- “Chapter 4. Darwin's theory of Natural Selection and its Moral Purpose” in *The Cambridge Companion to the 'Origin of Species'*. Edited by Michael Ruse and Robert J. Richards. Cambridge, 2009
- Ruse, Michael. “Teleology: Yesterday, Today, and Tomorrow?” in *Studies in History and Philosophy of Science. Part C. Studies in History and Philosophy of Biological and Biomedical Sciences*, 31(1), 2000
- Taguieff, Pierre André. *Le sens du progrès*. Flammarion, Paris, 2004
- Tort, Patrick. *Spencer et l'évolutionnisme philosophique*, Paris, PUF, 1996
- Vogt, Joseph. *Wege zum historischen Universum: von Ranke bis Toynbee. [El concepto de la historia. De Ranke a Toynbee]*. Trans. Justo Perez Corral. Guadarrama, Madrid, 1974
- Woodfield, Andrew. *Teleology*, Cambridge University Press, 1976
- Uexküll, Jakob von. *Bausteine zu einer biologischen Weltanschauung. [Ideas para una concepción biológica del mundo]*. Trans. R. Tenreiro. Espasa, Madrid, 1934

Young, Robert. "The development of Herbert Spencer's Concept of evolution". XI International Congress of the History of Science, Warsaw, 1965. Acts du XI Congrès International d'Histoire des Sciences, vol. 2, Ossolineum, Warsaw, 1967

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## **Summary in English**

Several ancient, medieval and modern philosophers have used final causality or teleology in a transcendental way. This means that everything tends naturally toward its own completion, in harmony with the rest of the cosmos, because of some divine causation. In different ways, they claim that the individual developments and the convergence of all of them in a general equilibrium are made by one divine providential entity. In some of these frameworks the final cause can be conceived as a sign of god's wisdom or a proof of its existence. However, final causality can also be understood in an immanent way, without the participation of any kind of divine artisan or creative god. From that perspective, nature is not seen as a passive matter upon which god works and introduces perfection, but as an innate tendency to completion and perfection. The tendency of a seed towards growth, and ultimately to reach maturity, or the general equilibrium in the cosmos made by the convergence of every perfective tendency, is understood by Aristotle, the father of this philosophical perspective, without the contribution of any providential god. I claim that, in the post-Cartesian and deeply Darwinian era starting around 1900, the influential philosopher Henri Bergson used final causality in an original way, applying it to the restricted field of the biological world.

Although I address the big differences between the Aristotle and Bergson, my main aim is to show the common roots of immanent teleological thought. The main ideas behind this framework are: i) nature is something active, spontaneous; ii) perfection is not restricted to divine or human intelligence, hence nature is to be conceived as composed by an uncountable plurality of beings; iii) immanent teleology implies a naturalistic conception of human beings. For this reason, certain anthropomorphic analogies between humans and their surrounding nature are philosophically permitted. iv) there is individual immanent teleology, expressed in development, growth and plenitude regarding one substance (plant, animal, human). Furthermore, there is a global immanent teleology that makes all the particular flourishing processes converge in one general good. In Aristotle this good can be seen as equilibrium and its everlasting duration. Far from this view of global perfection, in Bergson there is a dynamic and progressive conception of the evolutionary world: life and, ultimately, human life are part of a process that tends toward freedom or contingency. Harmony and stability are not the goal of the cosmos, but rather complexity and freedom.

In opposition to the widespread understanding of Bergson as a philosopher of pure becoming, in Chapter 1, I defend the claim that, in his view of the living world, everything has to be linked to its specific action. As I show in detail in this dissertation, non-human organisms, embryos, human souls, human societies and the whole cosmos are conceived with regard to specific actions, that is Bergson's modern way of interpreting the abstract term "perfection". Furthermore, I defend this claim by appealing to plenty of analogies between the human mind and different natural phenomena.

In Chapter 1, I gather together Bergson's critiques of the excesses of final causality. We can also find these critiques in Aristotle, but unlike to Aristotle in the *Physics*, Bergson focuses his philosophical considerations on teleology only with regard to global teleology. It is true that Bergson rejects certain analogies between nature in general (what he calls Life or the vital impulse) and a human artisan. In addition, he denies that there is any kind of general harmony in the world. I do not disregard these statements, but I believe that they have been overemphasized and we have to contextualize them cautiously. I think it is obvious that Bergson defended the use of analogy between mind and nature, because for him mind is part

of nature, and not an isolated entity. So, he does not reject *all kinds* of analogy. As I show in Chapter 3, Bergson uses analogies constantly for the purpose of illustrating his original final causality. Secondly, Bergson by no means rejects *all kinds* of “general goals” by rejecting the idea of harmony. As I said, the general goal, function or end of the entire cosmos is freedom, according to Bergson. For this reason, Bergson sees the appearance of human beings as a relative success of this tendency. At this point, Bergson introduces another critique of global teleology. It is the most important critique, in fact: for him the global doctrine of final causality can lead to determinism or fatalism. Bergson’s theory of the vital impulse is both perfective and relatively unpredictable. Bergson combines openness and directionality, creating some philosophical problems far from Aristotle. It is part of what I call the reform of immanent teleology. In Chapter 1 I also stress the value of some passages from *Creative evolution* in which he finds himself as a reformer of both individual and global teleology. After refuting the a-teleologist readings of Bergson, it is necessary at this point to show what is the classic model of teleology, for having a clear idea of what a reform of it means.

In Chapter 2, I analyze Aristotelian teleology, and also address two closely related topics (the natural scale and Aristotle’s theory of chance) that may have importance for Bergson. The line of argument in this long chapter prepares the structure of the following chapters. Section 2.1 deals with Aristotle’s argument for endorsing teleology and its structural parts. I do the same in Chapter 3 regarding Bergson. Section 2.2 focuses on the fields of application of teleology in Aristotle; Chapter 4 follows the same order for Bergson.

Aristotle’s structural elements of teleology have to be found within his theory of causality in *Physics*.II. The most important feature of final causality is perfection or completion. This term can be interpreted in multiple ways. In Aristotle, perfection is related to the form or the species, the metaphysical substratum of any natural item. For Aristotle one child is imperfect in comparison with its mature form, where the form human has attained the full definition. The form is necessarily linked with another notion, that of function. Attaining a form means, in Aristotle, attaining fulfillment regarding one specific action. Perfection, form and function have a circular relation in this context. Every species and every function is a different form of perfection in Aristotle’s pluralistic world.

The second structural element is that of analogy. As I mentioned above, analogy means that human beings are part of nature. There is a plurality in the world, but also a common root that permits analogy. The analogy between the artisan and the process of growth is typical in Aristotle. To this extent, “art imitates nature” since it follows the same teleological model: the goal (perfection, form, function) is at the end of any rational activity. Health, victory and dwelling are the ends of walking, fighting and constructing houses, respectively. Aristotle defends anthropomorphism, if anthropomorphism means that there are features in our mind that can be transferred to the natural world.

The third structural element is implied in the previous argument, and not openly stated. In Aristotle there is no anthropocentrism, since the natural world is not for the sake of human beings and the natural world can be thought with no reference to us. At the same time, according to this philosopher, human beings are the most perfect being within the infralunary world. It means that they can establish special analogies with heavenly bodies, for instance. This third element nuances the feature of pluralism: there are multiple kinds of perfection, but some are better than others. The fourth structural element is regularity. It is explicitly used by Aristotle. Regularly, the natural items attain their ultimate goal, form and function. That is why natural failures, such as monsters, are exceptions. For Aristotle, in nature things tend

toward the good or the best. In this section I have also analyzed Aristotle's theory of chance, since it will also play a role in the chapters on Bergson. He thought that non-regular events could also be reconstructed in the framework of teleology. That is what I call secondary teleology, against the primary teleology of regular events.

The domains of teleology illustrate, with different forms, what perfection can mean. Regarding individual teleology, I ascend in the natural scale from the lower levels to the upper ones. Since Bergson will apply teleology exclusively to living beings, I have stressed Aristotle's teleology in the biological realm. Survival (including nutrition and reproduction), and well-being among the superior animals (horse life for the horse) may represent perfection in this field. In the case of humans, well-being means happiness, which includes the fulfillment of the rational faculties. This can also be applied to the heavenly rotatory bodies. The peak of the scale is god, an entity that also has a function: thinking of itself.

The second part of 2.2 shows how we should interpret perfection in the global teleology passages. This meaning is compatible with survival and well-being, although it establishes a second wider perspective. Individual perfection may imply in this context a contribution of some kind to the environment or the cosmos. The mere activity regarding the specific function implies participation in the general order. Also, reproduction implies the stability of the species in an eternal world: Aristotle thinks that through reproduction the individual, perishable, infralunary being participates in eternity. Aristotle uses the Platonic language of imitation when talking about this second form of contribution. In short, these obscure passages, with less use of human analogies, show that perfection can be seen beyond the boundaries of one substance or species.

Chapter 3 is devoted to the structure of the teleological view. I show the different terms that Bergson uses by means of perfection, through analogy with human consciousness. I find four types of analogy in Bergson's entire career. In general terms, two of these imply perfection in the sense of being, of the conservation of being. The other two refer to change, transgression and ontological progress. Bergson sees both tendencies in nature and in us as well. This chapter also deal with the peculiar status of mankind in nature, for Bergson. According to Bergson human beings are natural and, at the same time, special. I also define Bergson's view as mitigated anthropocentrism: human beings are the summary of nature (now from the evolutionary perspective) but also add special faculties that imply special analogies. There are no heavenly bodies to be analogous with here, but every individual being, and especially geniuses, are similar to Bergson's Life or *élan vital*, an overarching composite entity that has to be with the ancient soul of the world, something that is not found in Aristotle. In Chapter 3, I also distinguish two levels of teleology. There is regular teleology, related to conservative teleology: survival and action is as regular among living beings here as in Aristotle. Furthermore, there is a global teleology involved in his view of history of Life and history of mankind. Bergson's global teleology combines primary teleology (since the cosmos, and namely, Life, regularly tend toward contingency and freedom) with secondary teleology: history of Life and mankind is singular, unpredictable and contingent. Although there is directionality and perfection, the concrete forms, outcomes of this evolution, and the final attainment of the goal of the world is uncertain. In comparison with the rest of the living world, humans are a relative success, that is all. The future is open.

In Chapter 4, I illustrate the different forms of perfection noted above. It plays an identical role as 2.2 did. Approximately, individual teleology is linked in Bergson with what I called conservative teleology. Here I use the term destination, as Bergson does. The destination of

living organisms, embryos, humans and societies are analyzed in this section. Concepts familiar to us such as survival, conservation or, a key Darwinian term, adaptation are at stake here.

Furthermore in 4.2 I deal with transgressive teleology which is surely the most original part of Bergson's approach, although it also introduces several problems. Apart from one case, the field of transgressive teleology is history of Life, history or cosmology, that is, global teleology. The non-global field is the human being. While in 4.1 I highlight human's tendency toward survival and adaptation, here I address his or her tendency to overcome already-made limits. For Bergson, human being's ultimate destination is to create something new and unpredictable. In his eudaimonistic perspective, maturity is self-creation: thus, to create something includes us. We are the product of our original choices. As we can see there is directionality, but still openness in this level. In the next levels—that of evolutionary biology, history or cosmology—this paradox is transferred to Life or Consciousness, understood as an overarching entity that progresses through individuals. In Bergson, transgressive teleology must be unpredictable and any success (like human beings) can become a decay.

In my Conclusion, I defend the deep understanding of life that seeks immanent teleology. It is what Bergson took from Aristotle in first place. Bergson's individual teleology is to be understood in terms of his concept of attention to life. Immanent teleology implies both a need to understand living beings beyond concepts and human rationality, and to understand human beings within nature. The organism tends toward life naturally, with no help of reasoning. Life, being on earth, is then perfection. Survival, living-well and all fulfillment of innate potencies are, against death or decay, irreducible notions for understanding the living being from the moment it is alive. Not only the coordination of the parts in view of the whole, but especially the particular good that the whole is seeking are important. These notions are to be found in our consciousness, but the philosophy of immanent teleology does not think that it should lead to a total refutation: human beings are part of nature, and, namely, part of life. Since the root of life is this tendency toward survival, etc., final causality may be thought of as biomorphism, rather than anthropomorphism.

Secondly, transgressive teleology is more original to Bergson, since such a topic is alien to the Aristotelian worldview. While applied to individual persons it tries to combine directionality and eudaimonology with freedom, openness and unpredictability. The result is that happiness is to be found in pure creation. This upshot, expressed as the paradoxical notion of teleology with no goal, becomes much bigger when the field also becomes bigger: in the rest of the cases of transgressive teleology Bergson erects a global immanent evolutionary teleology that combines one regular element (the goal of the world) and contingency (the effective history of Life and mankind). Although submitted to innumerable contingencies and eventual decay, Life or the *élan vital* are directed towards what Bergson considers is perfect. It reproduces the previous paradox (teleology with no goal) in global teleology, a philosophical field seen as archaic and problematic nowadays. Moreover, within Bergson it introduces a new major problem. Given that Life is free, that is, unpredictable and creative, it is difficult to demarcate the limits between this overarching force and individual human beings. When Bergson talks about the heroes, the peak of freedom among humans, he says that they are closer than any other individual to the source of Life. While there is in Bergson an unpredictable creativity in the world, it is not clear *whose* freedom this is. Certainly, the borders between individual transgressive teleology and global transgressive teleology look blurred.



## Summary in Dutch

Antieke, middeleeuwse en moderne filosofen hebben finale causaliteit, ofwel teleologie, transcendentaal gebruikt. Dit betekent dat alles van nature gericht is op zijn eigen vervolmaking, in harmonie met de rest van de kosmos, vanwege een zekere goddelijke causaliteit. Zij claimen op verschillende wijze dat individuele ontwikkelingen en de convergentie daarvan in een algemeen evenwicht veroorzaakt worden door één goddelijke voorzienige entiteit. In sommige van deze denkkaders wordt de finale oorzaak beschouwd als een teken van gods wijsheid of een bewijs van het bestaan daarvan. Finale causaliteit kan daarentegen ook begrepen worden op immanente wijze, zonder de invloed van enig soort goddelijke maker of scheppende god. Vanuit dat perspectief wordt de natuur niet gezien als een passieve materie waar een god mee werkt en waarin hij perfectie aanbrengt, maar als een aangeboren gerichtheid op vervolmaking en perfectie. De gerichtheid van een zaadje op groei, en uiteindelijk op het bereiken van volledige wasdom, of het algemene evenwicht in de kosmos dat tot stand komt door de convergentie van elke gerichtheid op perfectie, worden door Aristoteles, de grondlegger van dit filosofisch perspectief, begrepen zonder bijdrage van welke voorzienige god dan ook. Ik betoog dat in het post-Cartesiaanse en diepgaand Darwiniaanse tijdperk rond 1900, de invloedrijke filosoof Henri Bergson finale causaliteit op originele wijze heeft gebruikt door het toe te passen op het afgebakende domein van de biologische werkelijkheid.

Hoewel ik hier de grote verschillen tussen Aristoteles en Bergson behandel, is mijn belangrijkste doel om de gemeenschappelijke wortels van immanent teleologisch denken te laten zien. De belangrijkste ideeën achter dit denkkader zijn: i) de natuur is actief en spontaan; ii) perfectie is niet beperkt tot goddelijke of menselijke intelligentie; daarom is de natuur te beschouwen als samengesteld uit een ontelbare veelheid van zijnden; iii) immanente teleologie impliceert een naturalistische opvatting van de mens; daarom zijn bepaalde antropomorfe analogieën tussen mens en de omringende natuur filosofisch toegestaan; iv) er is individuele immanente teleologie, uitgedrukt in ontwikkeling, groei en volheid met betrekking tot één substantie (plant, dier, mens); daarnaast is er een alomvattende immanente teleologie die alle afzonderlijke processen laat samenkomen in één algemeen goed. In Aristoteles kan dit goed worden gezien als evenwicht en de eeuwige duur daarvan. In tegenstelling tot deze omvattende perfectie vinden we in Bergson een opvatting van de evolutionaire wereld als dynamisch en progressief: leven, ook menselijk leven, is deel van een proces dat gericht is op vrijheid ofwel contingentie. Niet harmonie en stabiliteit zijn het doel van de kosmos, maar eerder complexiteit en vrijheid.

In tegenstelling tot de wijdverbreide opvatting dat Bergson een filosoof van het pure worden is, verdedig ik in Hoofdstuk 1 de stelling dat in Bergson's visie op de levende werkelijkheid alles verbonden moet zijn met specifiek handelen. Zoals ik in detail laat zien in dit proefschrift, worden niet-menselijke organismen, embryos, menselijke zielen, menselijke samenlevingen en de gehele kosmos beschouwd in relatie tot specifieke handelingen – dat is Bergson's moderne manier om de abstracte term 'perfectie' te interpreteren. Verder verdedig ik deze stelling door een beroep te doen op een groot aantal analogieën tussen de menselijke geest en verschillende natuurlijke verschijnselen.

In Hoofdstuk 1 verzamel ik Bergson's kritiek op extreme vormen van finale causaliteit. We kunnen deze kritiek ook vinden in Aristoteles, maar, anders dan Aristoteles in de *Physica*, concentreert Bergson zijn kritiek alleen op alomvattende teleologie. Bergson verwerpt bepaalde analogieën tussen de natuur in zijn algemeenheid (die hij leven of levensimpuls—

*élan vital*—noemt), en een menselijke ambachtsman. Bovendien ontkent hij dat er enige vorm van algemene harmonie in de wereld bestaat. Zonder deze feiten te veronachtzamen ben ik van mening dat ze teveel nadruk hebben gekregen en dat we ze zorgvuldig in hun context moeten lezen. Volgens mij is het evident dat Bergson het gebruik van de analogie tussen geest en natuur verdedigde omdat voor hem de geest deel is van de natuur, niet een geïsoleerde entiteit. Hij verwerpt dan ook niet *alle vormen* van analogie. Zoals ik in Hoofdstuk 3 laat zien, gebruikt Bergson voortdurend analogieën om zijn originele opvatting van finale causaliteit te illustreren. Bovendien verwerpt Bergson met het verwerpen van de notie van harmonie geenszins *alle vormen* van ‘algemene doelstellingen’. Volgens Bergson is vrijheid het algemene doel, de functie van de gehele kosmos. Daarom ziet Bergson het verschijnen van de mens als een relatief succes van deze gerichtheid. Op dit punt introduceert Bergson een andere kritiek van alomvattende teleologie. Dit is de meest belangrijke kritiek: de doctrine van alomvattende teleologie kan leiden tot determinisme of fatalisme. Bergson’s theorie van de levensimpuls is zowel gericht op perfectie als relatief onvoorspelbaar. Bergson verbindt openheid en gerichtheid, waarmee hij een aantal filosofische problemen genereert die niet bij Aristoteles optreden. Dit is deel van wat ik de hervorming van de immanente teleologie noem. In Hoofdstuk 1 benadruk ik tevens de betekenis van een aantal passages uit *De scheppende evolutie* waarin Bergson zichzelf ziet als hervormer van zowel individuele als alomvattende teleologie. Na het weerleggen van a-teleologische lezingen van Bergson wordt het noodzakelijk om te laten zien wat het klassieke model van teleologie behelst, om een helder idee te krijgen wat de hervorming ervan inhoudt.

In Hoofdstuk 2 analyseer ik de aristotelische teleologie, en behandel ik twee nauw samenhangende onderwerpen, nl. de natuurlijke hiërarchie (*scala naturae*) en Aristoteles’ theorie van het toeval, die van belang kunnen zijn geweest voor Bergson. De opzet van dit lange hoofdstuk wordt herhaald in de hoofdstukken over Bergson. Sectie 2.1 bespreekt Aristoteles’ argumentatie om teleologie aan te nemen, en de structuur ervan. Ik doe hetzelfde in Hoofdstuk 3 met betrekking tot Bergson. Sectie 2.2 richt zich op de toepassingsgebieden van de teleologie in Aristoteles; Hoofdstuk 4 doet hetzelfde voor Bergson.

De structurele elementen van de teleologie van Aristoteles vinden we in zijn theorie van oorzakelijkheid in *Physica* II. Het belangrijkste kenmerk van finale causaliteit is perfectie of vervolmaking. Deze termen kunnen op verschillende wijzen worden uitgelegd. In Aristoteles is perfectie verbonden met de vorm of species, het metafysisch substraat van elk natuurlijk ding. Voor Aristoteles is een kind onvolmaakt ten opzichte van zijn volwassen gedaante, wanneer de menselijke vorm zijn definitie volledig waarmaakt. De vorm is noodzakelijk verbonden met functie. Een vorm realiseren betekent in Aristoteles vervulling realiseren met het oog op een specifieke handeling. Perfectie, vorm en functie verwijzen naar elkaar in deze context. Iedere species en iedere functie is een andere vorm van perfectie in Aristoteles’ pluralistisch universum.

Het tweede structurele element is dat van de analogie. Analogie betekent dat mensen deel uitmaken van de natuur. Er is pluraliteit in de wereld, maar ook een gemeenschappelijke grond die analogie toestaat. De analogie tussen de ambachtsman en het groeiproces is typerend voor Aristoteles. ‘Kunst imiteert de natuur’ omdat het hetzelfde teleologisch model volgt: het doel (perfectie, vorm, functie) is het eindpunt van iedere rationele activiteit. Gezondheid, overwinning en wonen zijn de doelstellingen van respectievelijk wandelen, vechten en huizen bouwen. Aristoteles verdedigt anthropomorfisme, als anthropomorfisme betekent dat er kenmerken in onze geest zijn die kunnen worden overgedragen op de natuurlijke werkelijkheid.

Het derde structurele element is impliciet in het voorgaande. Er is geen anthropocentrisme in Aristoteles, omdat de natuurlijke werkelijkheid niet bestaat omwille van de mens, en omdat de natuurlijke werkelijkheid gedacht kan worden zonder verwijzing naar de mens. Tegelijk zijn mensen volgens Aristoteles de meest perfecte levende wezens in het ondermaanse. Dat betekent dat er specifieke analogieën zijn tussen mensen en, bijvoorbeeld, hemellichamen. Dit derde element nuanceert het kenmerk van pluralisme: er zijn vele vormen van perfectie, maar sommige zijn beter dan andere.

Het vierde structurele element is regelmatigheid en wordt expliciet door Aristoteles ingezet. In de regel bereiken natuurlijke entiteiten hun uiteindelijke doel, vorm en functie. Daarom zijn mislukkingen in de natuur, zoals ‘monsters’, uitzonderingen. Voor Aristoteles tenderen natuurlijke dingen naar het goede of het beste. In dit hoofdstuk heb ik tevens Aristoteles’ theorie van het toeval geanalyseerd omdat het ook een rol zal spelen in de hoofdstukken over Bergson. Aristoteles was van mening dat niet-regelmatige gebeurtenissen ook konden worden gereconstrueerd met behulp van teleologie. Dat noem ik secundaire teleologie, ter onderscheiding van de primaire teleologie van regelmatige gebeurtenissen.

De domeinen van de teleologie illustreren in verschillende vormen wat perfectie kan betekenen. Ten aanzien van individuele teleologie bestijg ik de ladder van de natuur van de lagere tot de hogere niveau’s. Omdat Bergson teleologie alleen zal toepassen op levende wezens, heb ik de nadruk gelegd op Aristoteles’ teleologie in het biologisch domein. Voortbestaan (inclusief voeding en voortplanting), en—onder de hogere dieren—welzijn (het paardenleven voor een paard) kunnen dienen als voorbeeld van perfectie in dit domein. In het geval van mensen betekent welzijn geluk, inclusief de vervulling van de rationele vermogens van de mens. Dit kan ook worden toegepast op de omwentelingen van de hemellichamen. Aan de top van de piramide staat god, die ook een eigen functie heeft: zichzelf denken.

Het tweede deel van sectie 2.2 laat zien hoe we perfectie moeten interpreteren in de passages over alomvattende teleologie. Perfectie is compatibel met voortbestaan en welzijn, hoewel het een tweede, ruimer, perspectief opent. Individuele perfectie kan in deze context ook een of andere bijdrage aan de omgeving of de kosmos betekenen. De activiteit ten aanzien van de specifieke functie op zichzelf impliceert al deelname aan de algemene orde. Reproductie impliceert bovendien de stabiliteit van de species in een eeuwige wereld: Aristoteles meent dat vergankelijke individuele ondermaanse levende wezens door reproductie deelhebben aan de eeuwigheid. Aristoteles gebruikt de Platoonse terminologie van imitatie als hij over deze tweede bijdrage spreekt. Kortom, deze obscure passages die minder gebruik maken van analogieën met de mens, tonen dat perfectie gevonden kan worden buiten de grenzen van één substantie of species.

Hoofdstuk 3 is gewijd aan de structuur van het teleologisch wereldbeeld van Bergson. Ik behandel de verschillende termen die Bergson gebruikt voor perfectie, in analogie met het menselijk bewustzijn. Ik vind vier typen van analogie in Bergson’s carrière. In algemene termen impliceren twee ervan perfectie en behoud van zijn. De andere twee verwijzen naar verandering, overgang en ontologische vooruitgang. Bergson ziet beide tendenzen zowel in de natuur als in ons. Dit hoofdstuk behandelt tevens de bijzondere status van de mensheid in de natuur volgens Bergson. De mens is volgens Bergson natuurlijk, en tegelijk bijzonder. Ik identificeer Bergson’s visie als gematigd anthropocentrisme: mensen zijn de samenvatting van de natuur (nu vanuit evolutionair perspectief), maar ik voeg daaraan ook speciale kenmerken toe die samenhangen met speciale analogieën. Er is hier geen sprake van analogie

met hemellichamen, maar elk individu, en de genius in het bijzonder, lijkt op Bergson's leven of levensimpuls, een overkoepelende samengestelde entiteit die in contact moet staan met de aloude ziel van de wereld—iets wat we niet bij Aristoteles aantreffen.

In Hoofdstuk 3 onderscheid ik ook twee niveau's van teleologie. Er is reguliere teleologie, verbonden met teleologie van behoud: voortbestaan en handelen zijn net zo regulier onder levende wezens bij Bergson als bij Aristoteles. Verder is er alomvattende teleologie in Bergson's opvatting van de geschiedenis van het leven en de geschiedenis van de mensheid. Bergson's alomvattende teleologie combineert primaire teleologie (de kosmos en vooral het leven zijn in de regel gericht op contingentie en vrijheid) met secundaire teleologie: de geschiedenis van het leven en de mensheid is singulier, onvoorspelbaar en contingent. Hoewel er gerichtheid en perfectie is, zijn de concrete vormen, de uitkomsten van deze evolutie, en het uiteindelijk bereiken van het doel van de wereld onzeker. In vergelijking met de rest van de levende werkelijkheid zijn mensen relatief gezien een succes, dat is alles. De toekomst is open.

In Hoofdstuk 4 geef ik illustraties van de verschillende vormen van perfectie die hierboven werden genoemd. Het hoofdstuk speelt dezelfde rol als sectie 2.2. Bij benadering is individuele teleologie in Bergson verbonden met wat ik teleologie van het behoud noemde. Hier gebruik ik de term einddoel (*destination*). Het einddoel van levende organismen, embryo's, mensen en samenlevingen wordt in deze sectie geanalyseerd. Hier komen bekende concepten als overleving, behoud, of (met een Darwiniaanse term) adaptatie aan de orde.

In sectie 4.2 behandel ik de overgangsteleologie (*transgressive teleology*) die zonder meer het meest originele aspect van Bergson's benadering is, hoewel deze ook met problemen komt. Met één uitzondering is het domein van de overgangsteleologie de geschiedenis van leven, of kosmologie, ofwel alomvattende teleologie. Het niet-alomvattende domein is de mens. Waar ik in sectie 4.1 de menselijke tendens tot overleving en adaptatie benadruk, bespreek ik hier de tendens om bestaande grenzen te overstijgen. Volgens Bergson is het einddoel van de mens om iets nieuws en onvoorspelbaars te creëren. In zijn eudaimonistisch perspectief is volwassenheid zelf-creatie: iets creëren omvat onszelf. Wij zijn het product van onze originele keuzes. Er is gerichtheid, maar ook nog steeds openheid op dit niveau. Op de volgende niveau's—die van evolutionaire biologie, geschiedenis of kosmologie—wordt deze paradox overgedragen naar Leven of Bewustzijn, begrepen als een overkoepelende entiteit die voortgang boekt middels individuen. In Bergson moet overgangsteleologie onvoorspelbaar zijn en kan ieder succes (zoals mensen) vergaan.

In mijn conclusie verdedig ik het diepe inzicht in het leven dat de immanente teleologie zoekt. Dit is wat Bergson vooral aan Aristoteles ontleend heeft. Bergson's individuele teleologie moet begrepen worden in termen van zijn concept van de aandacht voor het leven. Immanente teleologie impliceert zowel de noodzaak om levende wezens te begrijpen los van concepten en menselijke rationaliteit, en om mensen te begrijpen in de natuur. Het organisme is van nature gericht op leven, zonder hulp van redeneren. Leven, bestaan op aarde, is dan perfectie. Overleven, welzijn en het vervolmaken van aangeboren potenties zijn, anders dan dood of vergaan, niet verder te reduceren begrippen om het levende te begrijpen vanaf het moment dat het leeft. Niet alleen de coördinatie van de delen ten opzichte van het geheel, maar vooral het specifieke goed dat het geheel nastreeft is van belang. Deze begrippen zijn te vinden in ons bewustzijn, maar in de filosofie van immanente teleologie leidt dit niet tot een weerlegging: mensen zijn deel van de natuur, en vooral, deel van leven. Aangezien de bron van het leven dit streven naar overleven etc. is, kan finale causaliteit eerder gedacht worden als biomorfisme dan als anthropomorfisme.

Overgangsteleologie is nieuw bij Bergson; zo'n wereldbeeld is Aristoteles immers vreemd. Toegepast op individuele personen wil overgangsteleologie doelgerichtheid en eudaimonisme verbinden met vrijheid, openheid en onvoorspelbaarheid. Het resultaat is dat geluk gevonden moet worden in pure schepping. Deze conclusie, uitgedrukt als de paradoxale notie van teleologie-zonder-doel, krijgt meer betekenis zodra het domein groter wordt. In de resterende toepassingen van overgangsteleologie ontwerpt Bergson een alomvattende immanente evolutionaire teleologie die een regelmatig element (het doel van de wereld) verbindt met contingentie (de feitelijke geschiedenis van Leven en van de mensheid). Hoewel het Leven en de levensimpuls onderhevig zijn aan ontelbare contingenties en uiteindelijk vergaan, zijn ze gericht op wat Bergson als perfect beschouwt. Dit reproduceert genoemde paradox (teleologie-zonder-doel) in alomvattende teleologie, een filosofisch onderwerp dat heden ten dage als ouderwets en problematisch wordt beschouwd. Bovendien introduceert het in de context van Bergson een belangrijk nieuw probleem. Aangezien Leven vrij is, dat wil zeggen onvoorspelbaar en creatief, is het moeilijk om de grenzen te bepalen tussen deze overkoepelende kracht en individuele mensen. Wanneer Bergson spreekt over de helden, het toppunt van vrijheid onder de mensen, zegt hij dat zij dichterbij de bron van Leven staan dan ieder ander individu. Hoewel er in Bergson een onvoorspelbare creativiteit in de wereld is, is het niet duidelijk *wiens* vrijheid dit is. De grenzen tussen individuele en alomvattende overgangsteleologie blijven onduidelijk.

## **Curriculum Vitae**

Álvaro Luis Cortina Urdampilleta was born in Bilbao, Spain, the 9 October of 1983. In 2007 he obtained the degree on Philosophy in the University of Navarra, and wrote a Thesis on Spinoza's theology under the direction of Prof. Alejandro Llano. During 2006 he studied at Università degli Studi di Roma. La Sapienza, in Italy. At the same time he obtained the degree in Communication also in Navarra and studied during 2004 at Paris II Panthéon-Assaz, in Paris. Between 2007 and 2014 he focused on literary criticism for several relevant cultural publications in Spain and published one novel *Deshielo y ascensión* (Jekyll&Jill, 2013), selected in the Festival du Premier Roman de Chambéry in 2014. In 2013 he received a Master's Degree in Philosophy at the Universidad Complutense de Madrid, and the supervisor of his Master's Thesis was José Luis Villacañas. In 2014 he obtained a four-year scholarship from the Universidad Diego Portales in Santiago de Chile, with a *Cotutelle* in Leiden University. Between Autumn 2013 and Spring 2018 he has given seminars at the Universidad Complutense de Madrid, Instituto de Humanidades de la Universidad Diego Portales, Leiden University, École Normale Supérieure of Paris, Universidad Eclesiástica de San Dámaso of Madrid and in the Commissio Leonine (Paris) on Bergson and Aristotle. He also has worked and published on philosophical figures of the beginning of the 19<sup>th</sup> century, such as Spengler or Unamuno. In Autumn 2017, he took part in the Selbstorganisierte Gruppe zur klassischen Deutschen Philosophie at Humboldt Universität of Berlin, on German philosophy. He has given lectures at Oxford University, Manchester University, and Groningen University. His current research is in aesthetics.