

**UPDATE**

False dilemma in bioethics discussions

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Abstract

The article aims to explain the meaning and the presence of the false dilemma in the bioethics discussion, when the argumentation is reduced to two antagonistic positions, not allowing the debate because it eliminates intermediary solutions. The fallacy occurs in the deliberation of clinical or investigative ethics committees when members confuse rhetorical argumentation with logical demonstration, not taking into account that the solution is always contingent. It is also present in society's public debates on current ethical challenges, when participants do not take a pragmatic perspective, but advocate an ideological position that hinders dialogue and discussion of consensual solutions, which can always be reviewed. The lack of absolute certainty to the contexts, with is the hermeneutical condition required by practical, rhetorical and pragmatic rationality and the basis for a critical bioethics.

Keywords: Bioethics. Bias. Deliberations. Wedge argument. Proof of concept study. Hermeneutics.

Resumo**Falácia dilemática nas discussões da bioética**

O artigo objetiva explicitar o sentido e a presença da falácia dilemática na discussão bioética, quando a argumentação se reduz a duas posições antagônicas, não permitindo o debate ao eliminar soluções intermediárias. A falácia acontece na deliberação dos comitês de ética clínica ou investigativa quando os membros confundem a argumentação retórica com a demonstração lógica, desconsiderando que a solução é sempre contingente. Ela também está presente nos debates públicos da sociedade sobre desafios éticos quando os participantes não assumem perspectiva pragmática, mas defendem posição ideológica que dificulta o diálogo e a discussão de soluções consensuais, sempre passíveis de revisão. A falta de certeza e a possibilidade de rever as propostas, que dependem da referência ética necessária aos contextos, são condições hermenêuticas da racionalidade prática, retórica e pragmática, bases para uma bioética crítica.

Palavras-chave: Bioética. Viés. Deliberações. Argumento refutável. Estudo de prova de conceito. Hermenêutica.

Resumen**Falacia dilemática en las discusiones de bioética**

El artículo tiene el objetivo de explicitar el sentido y la presencia de la falacia dilemática en la discusión bioética, cuando la argumentación se reduce a dos posiciones antagónicas, no permitiendo el debate, ya que elimina las soluciones intermedias. La falacia tiene lugar en la deliberación de los comités de ética clínica o investigativa, cuando los miembros confunden la argumentación retórica con la demostración lógica, sin tomar en consideración que la solución es siempre contingente. Ésta también está presente en los debates públicos de la sociedad sobre los desafíos éticos actuales, cuando los participantes no asumen una perspectiva pragmática, sino que defienden una posición ideológica que dificulta el diálogo y la discusión de soluciones consensuales, siempre pasibles de revisión. La falta de certeza absoluta y la posibilidad de revisión de las propuestas, que dependen de la necesaria referencia ética a los contextos, condición hermenéutica exigida por la racionalidad práctica, retórica y pragmática, bases para una bioética crítica.

Palabras clave: Bioética. Sesgo. Deliberaciones. Argumento refutable. Prueba de estudio conceptual. Hermenêutica.

Declara não haver conflito de interesse.

In the public debate about moral challenges generated by the increasing introduction of biotechnology applied to human beings, it seems opportune to distinguish between the ethical debate and the legal debate. The former seeks to elucidate ethical issues, pointing to values and assets that are at stake and discussing the present interests in the application of biotechnology. In order to achieve this, a fine critical hermeneutics is needed, which unveils the ethical core and the sociocultural dynamics that shape and express the problem to which an answer is wanted.

The legal debate aims to examine legal proposals that define the limits of the use of a given biotechnology, bearing in mind the legal hermeneutics of the context in which these challenges arise. The confusion between the two perspectives leads one to interpret ethical questions as antagonistic dilemmas. The two discussions use different arguments: one to elucidate ethical issues, the other to justify legal proposals. The use of arguments requires critical debate, which analyzes the presence of sophisms that falsify the understanding of the problem for which solution is sought.

Fallacies concern argumentation, not demonstration. To demonstrate means to prove a proposition by simply following deductive sequence procedures, dependent on the axiomatic system within which the demonstration is performed. The argument, on the contrary, is not intended to demonstrate, but to convince the collective through a discourse of justification. Argumentation aims at adhering to something that is not demonstrable from axioms: *The field of argumentation is that of the plausible, the probable, insofar as the latter escapes the certainties of calculation*¹. The demonstration does not require the presence of the intellectual collective since it depends on a system of axioms previously accepted, while the argument always supposes the presence of a community of spirits².

Logics and mathematics proceed axiomatically, by demonstration; law and ethics develop prudentially by argument. Axioms prevent false reasoning in the demonstration, but argumentation, which depends on a prudential procedure, can engender misunderstandings. Logic is the field of demonstration, and rhetoric is the knowledge of argumentation.

Since antiquity, rhetoric was related to the sophists, understood as a pure oratory practice, distinct from philosophy by its formal declamatory intent^{3,4}. This objective of eloquence gave it a derogative meaning, explored by Plato's critique.

Aristotle was the first to give it a system, as a counterpart of dialectics, relating both to common knowledge, therefore not having a scientific but a practical character. Dialectics is a methodology for exposing subjects, while rhetoric is a method for persuading and refuting. Therefore, rhetoric is defined by persuasion⁵.

Modernly, rhetoric has been rediscovered as a treatise on argumentation especially by Perelman and Olbrechts-Tyteca, who define it as *the study of discursive techniques that allow to provoke or increase the adhesion of spirits to theses that come before them for assent*⁶. Reasoning can be invariant or context-dependent, depending on the type of process in which they are used. In rational, more geometric processes, demonstrations do not depend on context, but on premises that allow for evidence. In judicial and moral processes with a rhetorical perspective, seeking the probability, the arguments need to consider the circumstances of the context to have effect⁷. The dependence of context opens the possibility for fallacies.

The arguments of moral and judicial processes, as opposed to demonstrations of rational processes, in addition to the attention to the context, require a collective of dialogues. The argument, developed by rhetoric, seeks to convince; the demonstrations, typical of logic, evidence conclusions based on axioms. Failures in axiomatics lead to misleading logical demonstrations and sophisms in argumentation, allowing misleading rhetorical justifications. Criticism of misleading arguments has a long history.

Hume⁸ began this critique by analyzing the use of the naturalistic fallacy as a moral argument, starting from the assumption that ethical conclusions cannot be deduced from premises that are not of an ethical nature. This critique was later amplified in Moore's work⁹, for the affirmation that the duty to be cannot be deduced from the being, and made explicit later by Frankena¹⁰. These authors referred to logical fallacies in moral argumentation because they were based on unethical premises.

The term "argumentative fallacy" has, over time, acquired importance in moral discussion. But there are other types, such as the "moralistic fallacy", which speaks of the proper or non-presence of emotions in moral evaluation¹¹, or the "fallacy of conjunction", which gives a normative answer to two problems, conjugating them by "and"¹². In these cases, they are rhetorical fallacies in the argumentative conclusions.

The analysis of sophisms usually has a logical perspective on the study of moral language¹³. In the present context, it would take a rhetorical perspective to interpret possible fallacies of argumentation in speech rather than language. Rhetoric is not interested in the logical coherence of language, but in the force of convincing arguments. The logical analysis of moral language does not require collective interlocution, because its force depends on axioms, while rhetoric requires the presence of a community of thought because it is discursive argumentation.

Therefore, the discussion of ethical questions requires more rhetoric than logic. The institutional committees of moral deliberation and the ethical debate of moral challenges require rhetorical analysis of their arguments to question possible fallacies that distort the understanding and discussion of the problem.

One of the common rhetorical deviations in the deliberations of committees and in the debates of society is the dilemmatic fallacy which, in the face of a problem or ethical challenge, divides the answer into two antagonistic positions, either for or against, eliminating intermediate possibilities which are reduced to one or the other opposite position. This fallacy reissues the moral Manichaeism that divides the interpretation of reality into opposing positions, insisting on the dichotomy between ethically good or bad.

The classification of this fallacy as “dilemmatic” follows the proposal of Gracia¹⁴, who distinguishes “dilemma” and “moral problem”. “Dilemma” is a word of Greek origin which designates an argument by which an alternative between two opposing propositions is placed, eliminating any intermediate position, thus precluding discussion and deliberation on the subject. The only possible way would be to position one or another proposition. On the contrary, to consider as a “moral problem” a case to be solved or a challenge to answer expresses the reasoning that several paths can be followed, and that it is necessary to deliberate and discuss the question.

The tendency in the moral debate is to turn problems into dilemmas, closing the way for deliberation and debate due to polarization. The solution is reduced to a legal perspective, given to someone who has expertise in the subject. This is the core of the dilemmatic fallacy, characterized as rhetoric because it decoys argumentation and precludes discussion.

Moral deliberation

In the current context of health technologies, the constitution of research ethics committees and hospital bioethics committees is increasingly needed. These committees are governed by ethical principles and guidelines, in the analysis and equation of cases. But the pure technical application of these criteria is not the appropriate response; therefore, committees were created to interpret and discuss the ethical core of the problem, taking into account the concrete circumstances of the case.

The experience of these committees gave rise to practical methodologies for its operation. Two of them prevailed: one more concerned with the decision as an expected outcome of the committee, and the other emphasizing the deliberative process to arrive at the decision. The first is based on rational decision theory; the second follows the theory of deliberation¹⁴.

The decisionist theory starts from the premise of choice as a rational process that follows utilitarian reasoning to select the best alternative with quantifiable results, considering the probability of occurrence and the degree of desirability¹⁵. The two central elements of every decision - facts (results) and values (desirability) - are expressed in probabilistic and graduation numbers. This rational view has been introduced in medicine as a methodology for clinical reasoning decisions¹⁶. Evidence medicine deepens and refines this reasoning¹⁷. The quantitative basis of the decision-making process is being amplified and complicated by the use of big data in health and the respective algorithmization of decisions¹⁸.

Ethical decisions become technical decisions, solved by quantitative probability-based utilitarian reasoning. The decisionist theory, which has a utilitarian perspective, based on quantifiable probabilities, is characterized by a dilemmatic gradient, because, in relation to positive results, it reduces the decision to possibilities with greater quantitative probability and, in relation to desirability, it restricts those possibilities to two with greater probabilistic calculation.

The assumption of the utilitarian point of view, based on quantitative probabilities, engenders the dilemmatic tendency, preventing the discussion of other alternatives of quantitatively smaller probability, but that from another ethical,

non-utilitarian approach, attentive to the particular context, may be more appropriate.

This is the advantage of the model that is not focused primarily on decision, but on deliberation, not eliminating *a priori* no path to solution and putting the different routes on the discussion table. In this sense, the method has problematic perspective, avoiding the dilemmatic fallacy. This model was proposed by Gracia:

Here the reasoning is not the consequence of a process of "quantification", but of "argumentation". The difference is important. Quantification aims to resolve the issue rationally and once and for all, while the sole purpose of the argument is to be reasonable and with a solution always open¹⁹.

Therefore, it is always possible to find a better way, for moral problems are not mathematical questions, solved definitively with quantitative probabilistic calculations, but paradoxical subjects, characterized by plausible and probable approximation. To resolve them it is necessary to deliberate, considering all possible avenues, that need to be considered and weighed.

The dilemmatic fallacy precludes this prudential consideration since it analyzes ethically conflicting situations from antagonistic references: for example, autonomy or beneficence in the case of blood transfusion and sacrality or quality of life in end-of-life cases. From this opposition to solve the case is a fallacy of analysis because it prevents considering intermediate solutions, more appropriate to the context. Not falling into this sophistry requires hermeneutical sensitivity to analyze the circumstances and requirements of the case in question.

Moral debate

In the public debate of ethical challenges that society must face, the dilemmatic fallacy is also present, ideologically rather than rhetorically. However, what does ideology mean?

Historically, the word has had two meanings^{20,21}. The first, of strong and identified meaning with Marx, of false belief or consciousness that distorts the view on reality due to social class interests; and a weak one, which points to the social context that determines the configuration of knowledge and the form of ideas.

The first gave rise to the critical theory of ideologies, developed mainly by the Frankfurt school in works such as Horkheimer's "Critical Theory"²² and Habermas's "Technique and Science as Ideology"²³. The latter conformed the sociology of knowledge, as examples the classic work "Ideology and Utopia" of Mannheim²⁴ and "Knowledge and interest" of Habermas²⁵. Today the weak meaning of ideology predominates as a generalization of the social determination of the thought. Ideology is understood as a belief, an action or a political style, by the presence in them of certain typical elements, such as doctrinaireism, dogmatism, and a strong passionate component, etc., which have been variously defined and organized by various authors²⁶. In this weak meaning, the ideological is opposed to the pragmatic, double dimension - cognitive and emotional:

Ideological belief systems are cognitively characterized by mentality that is a dogmatic (rigid, impervious to arguments and facts) and doctrinal (which calls for principles and deductive argumentation) and at the emotional level by a strong passionate component, which gives them a high activist potential, whereas the pragmatic systems of beliefs are characterized by opposite qualities²⁷.

The pragmatic model is not fixed on ideas and principles, being more open to discuss opposing positions, more willing to agreements for common action. This non-ideological, but pragmatic, perspective is an Anglo-Saxon characteristic^{28,29}. The basic epistemological maxim of this tendency is that the function of thought is to produce habits of action and therefore the meaning or truth of any reality consists in the habits of action that it involves³⁰. This epistemological perspective had its ethical expression in the thought of James³¹. For him, there is no ideal realm of values, previous to and independent from sentient beings.

What, then, are moral obligations? These would be the most pressing and coherent demands for action, which are manifested in context. Hence, moral actions cannot be dogmatic, with the pretense of scientific accuracy, but rather tentative and approximate because they need to consider circumstances to grasp the ethical requirements³¹. Therefore, the pragmatic perspective needs hermeneutics to respond to the demands of the context.

This differentiation between the ideological and the pragmatic paradigm appears in the public debate of bioethics among those who, driven by ideology, divide the subjects into two antagonistic

positions, falling into the dilemmatic fallacy, while others, with a pragmatic view, are willing to discuss different positions from a democratic and hermeneutic dialogue, which captures the practical demands of the challenge discussed.

The ideological perspective appears, for example, in the debate on the law of abortion when it is defined by antagonistic positions: one in defense of life (pro-life) and another in favor of the decision of the woman (pro-choice), eliminating any possibility of intermediate solution due to dogmatic and doctrinal positions of both parties.

An example of critical reflection that avoids the fallacy of opposing positions is the bioethicist Berlinguer³², a physician with a secular and socialist mentality, commenting on the approval of the abortion law in Italy. Not motivated by religious or feminist motives, Berlinguer interprets that the majority of Italians voted in favor of abortion because they considered it a problem that had to be faced, reaching solutions.

According to him, few people thought that abortion was a right to be claimed, which could give it a seal of morality because *abortion is the obscure side of human reproductive functions. Obscure, because it often occurs from unknown causes or tormented decisions; obscure, because it concludes negatively the routing of a procreative process; obscure, because, provoked or spontaneous, it has always been a scourge for women of childbearing age*³³. It was a position favorable to abortion, but not an ideological one, based on a non-dogmatic or doctrinaire but pragmatic view, with hermeneutic sensitivity to the context and founded on the morality of common sense.

Another example of a dilemmatic fallacy is the discussion about transhumanism, which proposes the improvement of the human species, especially of its morality, through biotechnological interventions. The “Transhumanist declaration”³⁴ argues that humanity is always more affected in its constitution by the technological interventions of biosciences that can open the way to an improved post-human being. Why not rely on the contributions of genetics and neurosciences to achieve this goal of human moral perfection?

One of the first expressions of this debate was the publication of the book “Rules for the human park” of Sloterdijk³⁵, seen as a radical challenge to Heidegger’s “Letter on Humanism”. The defense of the use of bioengineering in the service of human improvement by Sloterdijk was answered

critically by Habermas³⁶. The latter defended the permanence of human nature as we know it, identifying the human being as a cultural being in the German sense of the term *Bildung* (culture as training), guarantee for autonomy and dignity as references of human ethics.

This debate appears dilemmatically reprinted with the arguments of the defenders of the moral improvement of humanity through the technique³⁷⁻⁴⁰, challenged by its opponents, the so-called “bioconservatives”^{36,41}, who defend the permanence of the human condition as a basis to defend autonomy and dignity, modern values essential for ethics.

In this discussion, the contenders are defined as innovators on the one hand and obscurantists on the other, but this dilemmatic opposition is based on ideological dogmatic and doctrinal positions that prevent a pragmatic and critical look to the question.

To overcome this opposition is the attempt of the article by Vilaça and Dias⁴², which points to the impertinence of polarization and problematizes the use of the categories “human nature” and “post-human” to discuss the theme of human improvement. In other words, it is necessary to deconstruct dogmatic and doctrinal positions of an ideological character and assume a pragmatic position, with a hermeneutical approach.

Critical hermeneutics

From the above, we can deduce that both the rhetoric necessary for the deliberation of the committees and the pragmatics required for the public debate of bioethics require the hermeneutics of the context so as not to fall into dilemmatic, sophistic, and ideological fallacies.

Rhetoric, as pure language formalism, and ideology as a doctrine of activist emotional force, dispel and eliminate critical hermeneutics which, with its interpretations of the context, denounces the dilemmatic fallacy of its arguments, demonstrating the irrelevance of the solutions founded on abstract theoretical bases, which disregard the circumstances of the being discussed.

The requirement of hermeneutics for the rhetorical and pragmatic approach to moral questions raises the question about the relation between hermeneutics and ethics, since these two knowledges, in general, are not connected. For

Kant⁴³, critical ethics must be based on universal a priori maxims; hermeneutics, defended by Gadamer⁴⁴, is an interpretative analysis of the particular facticity. The two points of view seem irreconcilable: criticism, *a priori* universal, and facticity, particularly *a posteriori*.

On the other hand, Conill's original attempt, in his work "Hermeneutical Ethics"⁴⁵, was to combine these two perspectives, proposing the critical ethics based on facticity, overcoming the more geometric view of the morality defended by Kant, based on absolute transcendental criteria. Conill suggests a rhetorical and pragmatic conception of the criticality of ethics that captures moral demands, interpreted from context, to attain a certainty contingent and probable.

For this approximation between ethics and hermeneutics, Conill⁴⁵ starts from the thinking developed by Heidegger in the "Natorp Report":

The phenomenological hermeneutics of facticity, insofar as it intends to contribute to the possibility of a radical appropriation of the present situation of philosophy through interpretation, (...) feels the obligation to assume the task of undoing the inherited and dominant state of interpretation, of revealing the hidden motives, to uncover the tendencies and the ways of interpretation not always explicit and of going back to the original sources that motivate all explanation by means of a disassembly strategy⁴⁶.

Such hermeneutics of facticity understood as a critique of ideology⁴⁷, allows us to analyze the ideological configurations that form the basis for dilemma fallacies (critical rhetoric), capturing the ethical demands of action involved in the issue (critical pragmatics). This possible conjugation between hermeneutics and ethics, for a critique based on the facticity of the context, leads to specific procedures of bioethics. Any case or challenge that this field of knowledge tries to answer is shaped by meanings that only arise through the interpretation of the context, both historical-existential and sociocultural and economic-political.

The lack of hermeneutic attention to the context can lead to conflicts of interpretation, transforming the problem into a bioethical dilemma for which it is difficult to find solutions. This lack of consensus can come from the difficulty of interpreting the facts implied, or rather the practical consequences of these facts since the hermeneutic procedures always have to do with actions to be implemented. Thus, the bioethical interpretation of the context transforms

the perception of the problem, having consequences on the pragmatic application⁴⁸.

This consideration allows for the distinction between the hermeneutic point of view and the method of applied ethical theory to answer questions of bioethics. This second procedure is the most usual when it comes to solving impasses, such as telling the terminally ill patients by applying theoretical propositions of deontology (duties implied in action) or utilitarianism (calculation of the results of the action). The first will say that there is a duty to reveal the truth, and utilitarianism will calculate the positive or negative consequences of saying the truth or not.

However, the context for uttering the truth is much more complex than what the two theories can grasp. Only the hermeneutical approach can point to these pragmatic demands that go unnoticed by the theories: biopolitical empowerment of the physician, the social situation of vulnerability of the patient, the difference of understanding about telling the truth according to the doctor or the patient, the meaning of tell the truth to the paradigm of Western medicine etc. The hermeneutic approach allows for an interdisciplinary variety of perspectives to interpret the context of the case or the bioethical challenge⁴⁸.

This approach allows the opening up of the different voices that are manifested in the conflictive drama, although there are aspects of the situation that go unnoticed, and only perceptible from the hermeneutics of suspicion⁴⁹ such as that developed by Marx, Freud, and Nietzsche. It is about capturing symbolic and biopolitical interference with bioethical issues, such as the psychoanalytic and patriarchal implications of substitutive motherhood. This variety of context elements that configures the meaning of a problem can only be considered from the hermeneutic approach of bioethics.

This model of bioethics could be questioned by abandoning objectivity, falling into moral relativism. It is therefore necessary to remember that one can not abandon the cultural tradition, which offers non-relativistic moral standards when judgments are made, but it is also necessary to be aware of the limitation of the prejudices that underlie these judgments. There is no disembodied reason that grasps the pure truth, but the common rationality that progresses in the understanding of the truth.

Another critique to the hermeneutical approach is that bioethics must provide solutions, respond to often urgent needs, and not be lost

in endless interpretations. However, although it provides quicker answers, applied ethical theory overlooks many aspects essential to understanding the ethical requirements of the problem. Therefore, by simplifying the procedure, one loses the complexity of the question⁴⁸.

This hermeneutic perspective suggests new and significant tasks for the bioethicist. Its function is not to give answers, pointing to mandatory courses of action, but to articulate the different perspectives implied in the ethical problem and to facilitate the dialogue between the parties. In addition, he must also focus on the arguments of the opposing position.

As a hermeneutic, the bioethicist not only articulates and facilitates but also refers to latent aspects of the context, which, although they configure the problem, are often forgotten by the blindness of the cultural tradition to which one belongs. In this way, he is a kind of Socratic interlocutor who always

questions and criticizes positions naturalized in moral doctrines⁴⁸.

Final considerations

The dilemmatic fallacy arises when one conceives ethics from a more geometric model and from a logical and ideological perspective of opposing positions. Since the Greeks, moral knowledge and its corresponding practice have always dealt with contingent questions, on which there are no absolute certainties.

Referring to the contexts where the actions take place and their respective justifications, the arguments are plausible, and therefore always subject to review by rhetoric and pragmatic analyses. Thus, in the discussions of bioethics, rhetoric and pragmatics require the critical hermeneutics of the context so that the arguments are convincing and believable.

Referências


1. Perelman C, Olbrechts-Tyteca L. Tratado da argumentação: a nova retórica. São Paulo: Martins Fontes; 2005. p. 1.
2. Perelman C, Olbrechts-Tyteca L. Op. cit.
3. Ferrater Mora J. Retórica. In: Ferrater Mora J. Dicionário de filosofia. São Paulo: Loyola; 2001. t. 4. p. 2523-8.
4. Rodríguez JJ. Retórica. In: Ortiz Osés A, Lanceros P, editores. Diccionario interdisciplinar de hermenéutica. Bilbao: Editora Universidad de Deusto; 2006. p. 492-5.
5. Aristóteles. Retórica. Lisboa: Imprensa Nacional Casa da Moeda; 2005. v. 8. t. 1. (Coleção Obras Completas de Aristóteles).
6. Perelman C, Olbrechts-Tyteca L. Op. cit. p. 4.
7. Toulmin SE. The uses of argument. Cambridge, UK: Cambridge University Press; 1958.
8. Hume D. Treatise of human nature. New York: Oxford University Press; 1978. book 3, part 2, section 1.
9. Moore GE. Principia ethica. Cambridge, UK: Cambridge University Press; 2000.
10. Frankena WK. Ética. Rio de Janeiro: Zahar; 1981.
11. D'Arms J, Jacobson D. The moralistic fallacy: on the 'appropriateness' of emotions. *Philos Phenomenol Res* [Internet]. 2000 [acesso 15 jul 2018];61(1):65-90. Disponível: <https://bit.ly/2FJpbbs>
12. Tentori K, Bonini N, Osherson D. The conjunction fallacy: a misunderstanding about conjunction? *Cogn Sci* [Internet]. 2004 [acesso 15 jul 2018];28:467-77. Disponível: <https://bit.ly/2YGjV11>
13. Brito AN. Falácia naturalista e naturalismo moral: do é ao deve mediante o quero. *Kriterion* [Internet]. 2010 [acesso 15 jul 2018];51(121):215-26. Disponível: <https://bit.ly/2S5aMVj>
14. Gracia D. Moral deliberation: the role of methodologies in clinical ethics. *Med Health Care Philos* [Internet]. 2001 [acesso 15 jul 2018];4(2):223-32. Disponível: <https://bit.ly/2K00Pcs>
15. Berger JO. Statistical decision theory and Bayesian analysis. 2ª ed. New York: Springer; 1985.
16. Brody H. Ethical decisions in medicine. 2ª ed. Boston: Little, Brown and Company; 1981.
17. Sackett DL, Straus SE, Richardson WS, Rosenberg W, Haynes RB. Evidence-based medicine: how to practice and teach EBM. London: Churchill Livingstone; 1997.
18. Sadin E. La vie algorithmique: critique de la raison numérique. Paris: L'Echappée; 2015.
19. Gracia D. Op. cit. p. 227.
20. Stoppino M. Ideologia. In: Bobbio N, Matteucci N, Pasquino G, editores. Dicionário de política. 4ª ed. Brasília: Editora UnB; 1992. v. 1. p. 585-97.
21. Ferrater Mora J. Ideologia. In: Ferrater Mora J. Dicionário de filosofia. São Paulo: Loyola; 2001. t. 2. p. 1429-34.
22. Horkheimer M. Teoria crítica. São Paulo: Perspectiva; 1990. 2 v.
23. Habermas J. Ciencia y técnica como ideología. Madrid: Tecnos; 2005.
24. Mannheim K. Ideologia e utopia. 2ª ed. Rio de Janeiro: Zahar; 1972.
25. Habermas J. Conhecimento e interesse. Rio de Janeiro: Zahar; 1987.
26. Stoppino M. Op. cit. p. 585.

27. Stoppino M. Op. cit. p. 588.
28. Ferrater Mora J. Pragmatismo. In: Ferrater Mora J. Dicionário de filosofia. São Paulo: Loyola; 2001. t. 3. p. 2341-3.
29. Putnam RA. Pragmatismo. In: Canto-Sperber M, organizadora. Dicionário de ética e filosofia moral. São Leopoldo: Editora Unisinos; 2003. v. 2. p. 372-9.
30. Peirce CS. Reasoning and the logic of things. Cambridge, MA: Harvard University Press; 1992.
31. James W. The will to believe. Cambridge, MA: Harvard University Press; 1979.
32. Berlinguer G. Bioética cotidiana. Brasília: Editora UnB; 2004.
33. Berlinguer G. Op. cit. p. 44.
34. Humanity+. Transhumanist declaration [Internet]. 2009 [acesso 15 jul 2018]. Disponível: <https://bit.ly/2xwY6yi>
35. Sloterdijk P. Regeln für den Menschenpark: Ein Antwortschreiben zu Heideggers Brief über den Humanismus. Frankfurt am Main: Suhrkamp; 1999.
36. Habermas J. Die Zukunft der menschlichen Natur: Auf dem Weg zu einer liberalen Eugenik? Frankfurt am Main: Suhrkamp; 2001.
37. Bostrom N. In defense of posthuman dignity. Bioethics [Internet]. 2005 [acesso 1º abr 2019];19(3):202-14. Disponível: <https://bit.ly/2TTmymd>
38. Sandberg A, Bostrom N. Converging cognitive enhancements. Ann N Y Acad Sci [Internet]. 2006 [acesso 15 jul 2018];1093:201-27. Disponível: <https://bit.ly/2Va0wwU>
39. Savulescu J, Bostrom N, editores. Human enhancement. Oxford: Oxford University Press; 2011.
40. Savulescu J, Meulen R, Kahane G, editores. Enhancing human capacities. Oxford: Wiley-Blackwell; 2011.
41. Kass LR. Life, liberty and defense of dignity: the challenge for bioethics. San Francisco: Encounter Books; 2002.
42. Vilaça MM, Dias MCM. Transumanismo e o futuro (pós-)humano. Physis [Internet]. 2014 [acesso 15 jul 2018];24(2):341-62. Disponível: <https://bit.ly/2CT6VWa>
43. Kant I. Die Metaphysik der Sitten. Hamburg: Von Felix Meiner; 1966.
44. Gadamer HG. Wahrheit und Methode: Grundzüge einer philosophischen Hermeneutik. 2ª ed. Tübingen: Mohr; 1972.
45. Conill Sancho J. Ética hermenéutica: crítica desde la facticidad. Madrid: Tecnos; 2006.
46. Heidegger M. Interpretaciones fenomenológicas sobre Aristóteles: indicación de la situación hermenéutica. Madrid: Trotta; 2002. p. 51.
47. Grondin J. Die Hermeneutik der Faktizität als ontologische Destruktion und Ideologiekritik. In: Papenfuss D, Pöggeler O, editores. Zur philosophischen Aktualität Heideggers. Frankfurt am Main: Klostermann; 1990. p. 163-78.
48. Leder D. Toward a hermeneutical bioethics. In: DuBose ER, Hamel RP, O'Connell LJ, editores. A matter of principles? Ferment in U.S. bioethics. Valley Forge: Trinity Press International; 1994. p. 240-58.
49. Ricoeur P. De l'interprétation: essai sur Freud. Paris: Le Seuil; 1965.

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