An Empirically Informed Critique of Habermas’ Argument from Human Nature

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Abstract In a near-future world of bionics and biotechnology, the main ethical and political issue will be the definition of who we are. Could biomedical enhancements transform us to such an extent that we would be other than human? Habermas argues that any genetic enhancement intervention that could potentially alter ‘human nature’ should be morally prohibited since it alters the child’s nature or the very essence that makes the child who he is. This practice also commits the child to a specific life project or, in any case, it puts specific restrictions on his freedom to choose a life of his own. Ultimately, genetic enhancement jeopardizes the very foundations of moral equality. I contend that Habermas’ argument is based either on a series of presuppositions that imply a gross misunderstanding of evolution or the relevant factual information concerning the action we are about to morally assess is not empirically supported. Hence, the argument from human nature is based on a series of false or problematic assumptions, and, as such, it fails to play the normative role intended by Habermas.

Keywords Genetic enhancement · Human nature · Kind essentialism · Genetic determinism

Introduction

Since the publication of Watson and Crick’s seminal paper on the double helical structure of the DNA molecule (1953), not only has our knowledge of ourselves as
living organisms been vastly expanded, but it has also been paired with heightened abilities in manipulating and even altering our cellular material composition. Two events in genetics stand as major evidence for these significant changes: first, the completion of the Human Genome Project that led to the publication of the first sequence of the human genome, and, second, the creation of the first form of synthetic life, a bacterial cell controlled by a chemically synthesized genome (Gibson et al. 2010).

These scientific advances represent the beginning of a new era of genetic medicine. The map of the human genome sheds light on the role of genes in various hereditary diseases and this knowledge will lead to new ways to prevent, treat, and cure disease. However, one cannot fail to notice that the same knowledge, the same genetic technology, can be aimed at different purposes. “Increasingly, biotechnologies are being created and used not for therapeutic ends but for the purpose of ‘enhancing’ mental or athletic functions or altering physical appearance” (Ben Mitchell et al. 2007, p. 1). This has been the case with cosmetic surgery, with the use of anabolic steroids or of antidepressant drugs like Prozac. As Leon Kass notes, “the powers made possible by biomedical science can be used for non-therapeutic or ignoble purposes, serving ends that range from the frivolous and disquieting to the offensive and pernicious” (Kass 2003, p. 9). Bioconservatives are increasingly worried that advances in gene transfer technology will have dramatic consequences for our human nature since they “have prompted considerations in its use in humans to enhance phenotypic traits” (Gordon 1999, p. 2023).

The goal of this paper is to present and to critically assess one of the most influential moral arguments against genetic enhancement. In a nutshell, Jürgen Habermas’ argument from human nature raises three concerns about the impact that genetic enhancement could have on human beings. The first concern is that the use of genetic enhancement to improve one’s (future) child is a morally reprehensible practice because it alters the child’s nature or the very essence that makes the child who he or she is. Second, this practice commits the child to a specific life project or, in any case, it puts specific restrictions on his freedom to choose a life of his own (Habermas 2003a, p. 61). Third, genetic enhancement jeopardizes the very foundations of moral equality (Ibid, p. 63). Hence, this practice should be seen as morally problematic. The argument from human nature is supposed to provide important moral reasons to refrain us from endorsing future genetic enhancements.

1 There are various dates for the completion of this project. On June 26, 2000 Bill Clinton, the President of the United States at that time, announced the completion of the first working draft of the entire human genome. The first publication of the initial working draft sequence came out in two special issues of the two scientific leading journals Science and Nature (Venter et al. 2001; Lander et al. 2000). However, the International Human Genome Sequencing Consortium declared the Human Genome Project completed only in April 2003.

2 As Bostrom and Ord note, the other major arguments in the genetic enhancement debate are: the argument from evolutionary adaptation, the argument from transition costs, the argument from risk, and the argument from person—affecting ethics (2006, pp. 665–672). If the argument from human nature fails to support the moral reprobation of genetic enhancement technologies, it certainly does not follow that we should pursue this course of action. Other arguments from this list could have significantly more weight in this debate. Moreover, the critique of the Argument from Human Nature does not commit the author to the view that genetic enhancement technologies are as benign as any other form of technologies. The author defends the view that the significance of those changes can be measured only in the light of the soundest biological and psychological sciences.
At stake here, are not only those techniques like cloning that would “turn begetting into making, procreation into manufacture” (Kass 1998, p. 23), but more importantly, “those techniques of precise genetic modification [...] that would seek to alter humanity [emphasis mine]” (President’s Council on Bioethics 2002, p. 122). These technologies are going to bring about radical changes in the way we relate to living things, and hence to ourselves.

In this paper, I will first deploy the three main tenets of this argument as they appear in Habermas’ 2003 book The Future of Human Nature.3 The strategy of my critique is not to attack the soundness of Habermas’ Kantian moral framework but to highlight carefully the very structure of his argument against genetic enhancement. The goal of my second section is to point out the relevant factual information that grounds Habermas’ concerns and helps him reach the conclusions of his argument. Third, I will provide good reasons showing the falsity of these factual assumptions, and thereby, provide support for the unsuitability of the argument from human nature.

**Habermas’ Fears About Genetic Enhancement**

The central issue in the debate on genetic enhancement is that what was given in the past as our organic nature shifts today into manufacturing, and thus “the boundary between the nature that we ‘are’ and the organic endowments we give to ourselves disappears” (Habermas 2003a, p. 12). Are we running the risk not only of altering, and somehow destroying human nature, but also of undermining the very foundations of our moral agency and moral equality? Jürgen Habermas answers positively to this question and he appeals to human nature as a sufficient reason to prohibit genetic enhancements. How does he construct his argument? The argument of human nature is based on three main tenets: instrumentalization and alteration of human nature (Ibid, p. 24), binding the child to a certain life project or placing specific restrictions on his freedom to choose a life of his own (Ibid, p. 61), and threatening the fundamental egalitarian nature of our moral relationships (Ibid, pp. 50, 63).4 I will analyze now in a more detailed manner these three claims.

3 There are two approaches in the secondary literature on Habermas and bioethics. On the one hand, a number of bioethicists challenge his arguments focusing mainly [if not uniquely] on his 2003 publication (Bostrom 2005; Fenton 2006; Buchanan 2009a, 2012; Hayry 2012). On the other hand, critical and moral theorists emphasize that Habermas’ arguments are a continuation of his earlier work (including his meta-ethical work) and, as such, his book on human nature should not separated from the rest of his philosophical corpus (Edgar 2009). In this article, I follow the bioethics tradition and focus almost exclusively on Habermas’ The Future of Human Nature since this is the main book where he tackles the question of genetic enhancement and, as such, the arguments developed there should be self-sufficient.

4 There are slightly different formulations of this argument in the literature. Elizabeth Fenton thinks that the main reason for Habermas’ rejection of genetic enhancement is human dignity. I personally think that there is more textual evidence for supporting the idea that genetic enhancement prevents one to fully accomplish oneself, hence it should be morally prohibited. On the second reason, I am in agreement with Fenton on the question of equality, autonomy, and freedom (See Fenton 2006, pp. 35–42, especially p. 37). This topic has been initially approached by Bernard Prusak (2005). The Cambridge of Quarterly Healthcare Ethics has also dedicated a special issue to Kant, Habermas, and bioethics. The issue is particularly informative (Hayry 2012; Herissone-Kelly 2012; Gurham 2012) even if none of the contributors approaches Habermas’ argument from an empirical perspective.
First, when we take evolution into our own hands by genetically enhancing ourselves, we instrumentalize and alter our nature. Our humanity is the very condition for our own self-understanding and for moral equality. Although Habermas does not explicitly defend an essentialist view of human nature, his central claims largely assume that our inner human nature is grounded on a genetic humanity as the very biological foundation of our self-conception as equal members of the moral community.

A number of passages in *The Future of Human Nature* support the idea that Habermas endorses an essentialist view of human nature as a genetic essence. More specifically, the way he employs three kinds of essentialist concepts—foundation, essence, and species membership—is evidence for this reading.

Habermas is concerned that genetic enhancement technologies would alter “the biological foundations” (Ibid, p. 20) of one’s existence, and in doing so, it would instrumentalize “humanity’s inner nature” (Ibid, p. 24). For him, such genetic interventions are possible insofar as our human nature has a corresponding biological description at the molecular level. The human genome, as a “natural foundation” (Ibid, p. 75), is the sort of code that grounds a significant part of a future person’s identity (Ibid, pp. 27, 89). This is Habermas’ central reason to claim that “the genetic foundations of our existence should not be disposed over” (Ibid, p. 22).

For Habermas, human organisms possess also a “natural essence” (Ibid, p. 165). Genetic selection (whether positive or negative) is always measured both by the “desired composition of the genome” (Ibid, p. 30) and by the relations of this genome with the phenotypic traits it underlies. All decisions about the suitability of a certain genotype are “taken in the view of the potential essence” (Ibid, p. 30). And, since our genetic essence is a central component of our personal identity, and, at the same time, the foundation of “equal freedoms that exist among persons of equal birth” (Ibid, p. 115), all attempts to bring our essence within the realm of human discretion and choice ought to be prohibited.

Last, Habermas believes that there is a set of (necessary and sufficient) conditions that defines our human species membership and those very conditions make us who we truly are. Our identity is conceived as part of a species identity (Ibid, pp. 23, 39, 74). For example, an awareness of our own freedom requires a certain understanding that our biological lives [as a species] are not at our disposal. Any modification of this condition for species identity would have a significant impact on our essential capacity of being-oneself, and thereby on the process of ethical self-realization as free and equal moral agents (Ibid, p. 23). By altering our genetic humanity, we alter the “subjective qualification essential for assuming the status of a full member of a moral community” (Ibid, p. 81). It seems obvious that these claims would not fulfill their function unless we can determine the boundaries of our species [as Habermas believes we can; (Ibid, p. 39)] and the set of conditions that defines our species as a natural kind.

Habermas’ second concern regarding genetic enhancement practices is based on the idea that when parents genetically enhance their children, they impinge on their capacity to-be-able-to-be-themselves, and so, they fail to recognize the role of
human nature in their self-identity formation. Habermas’ claim highlights a central condition for moral agency, namely being-able-to-be-oneself successfully.

In *Either/or II*, Kierkegaard says that the task the ethical individual “has to set for himself is to transform himself [successfully, Habermas would add] into the universal individual” (Kierkegaard 1987, p. 260). This transformation is a dialectical progression in which one’s life, while passing through various existential stages [aesthetic → ethical → christian], can be accomplished only if one possesses oneself. By appealing to this Kierkegaardian notion of “possessing oneself”, Habermas runs the risk of endorsing a rather opaque concept which raises the question whether there are instances when one truly cannot possess oneself.

However, if we return to Kierkegaard, we gain more visibility regarding this notion. For him, an individual who “possesses oneself” is a universal individual [a successful way of being oneself] insofar as he can order, shape, temper, inflame, control his capacities, passions, inclinations, and habits, so that he “produces an evenness in his soul” (Ibid, p. 262), and attains a harmoniously virtuous form of life. Unlike the aesthete, who is self-serving, focused on his own sensuous experience, and whose self is fragmented by a bulimic sense of living, the ethical individual reflects the way in which the egoistic self [from the aesthetic stage], through a constant work on itself [control, temper, etc.], comes to transform itself successfully into a harmonious individual. However, the actions of a moral agent are not simply expected to be conformed to some universal rules. As Kierkegaard emphasizes, there is a necessity of self-understanding that one is choosing what one does rather than simply reacting to specific situation. This process of genuinely choosing one’s actions is the process that creates a form of self-identity by making him the undivided author of his own life. For Kierkegaard, this is a necessary condition

This is the perspective from which Habermas evaluates the ethical implications of genetic enhancement. Why does he believe that there is a strict correlation between the possession of one’s body [or the possession of one’s genetic human nature] and one’s capacity to act in an ethical way? Habermas believes that if one reveals to someone that he was eugenically manipulated, this knowledge would preclude the possibility for this person of successfully becoming oneself. However, his arguments for this claim are not always consistent. At various places, he supports the view that the mere fact of learning [a form of revelation] about one’s genetically modified genome would impinge on one’s psychological self-understanding, and so, it could prevent one from truly becoming an ethical being (Habermas 2003a, pp. 42, 53). At other places, he claims that “the knowledge of the temporal prius of being made does not necessarily result in self-alienation” (Ibid, p. 54), but it suddenly breaks the self-critical appropriation of one’s own development (Ibid, p. 51), at least with respect to the genetically manipulated traits.

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5 McDonald identifies a larger set of conditions for successfully being an ethical individual: the necessity of choosing seriously and inwardly; commitment to the belief that predications of good and evil of our actions have a truth-value; the necessity of choosing what one is actually doing, rather than just responding to a situation; actions are to be in accordance with rules; and these rules are universally applicable to moral agents (McDonald 2011).
There is a part of one’s self that falls outside one’s proper control, of one’s own appropriation. Following Kierkegaard, Habermas notes, “for this poor soul, there are only two alternatives, fatalism and resentment” (Ibid, p. 15). These irreversible decisions on one’s organic dispositions would irrevocably make another person co-author of one’s own life. So, one could never be truly and fully oneself. The parents as programmers (Ibid, p. 51) intrude into the life story of their child with a set of “one-sided and unchallengeable expectations” (Ibid). These “genetically fixed demands” (Ibid, p. 61) cannot be responded to and, the child, and consequently the future adult, “will remain blindly dependent on the non revisable decision of another person” (Ibid, p. 14). As a consequence, the child would fail to fulfill a necessary condition for moral agency.6

Unlike other kinds of expectation that some parents can place on their children (i.e. becoming a piano virtuoso, being great tennis player, etc.), genetic enhancements “do not provide the addressee with an opportunity to take a revisionist stand” (Ibid, p. 50). Given the irrevocable character of those demands and the shared authorship over one’s life (Ibid, p. 63)7, genetic enhancement would have significant existential consequences. The child would always be an impaired moral agent. Hence, this sort of intervention should be morally prohibited.

The last tenet of Habermas’ argument points out that control over one’s genome is morally wrong because “it creates an interpersonal relationship for which there is no precedent” (Ibid, p. 63). This is the question of equality among moral agents. Habermas’ discourse ethics is a Kantian constructivist type of moral theory. Habermas considers that “the community of moral beings creating their own laws refers, in the language of rights and duties, to all matters in need of normative regulation; but only [italics mine] the members of this community can [equally] place one another under moral obligations and expect one another to conform to norms in their behavior” (Ibid, p. 63).

Genetic enhancement distorts the symmetry that is necessary for a successful moral agent to equally participate in interpersonal relationships (Ibid, p. 13). The psychological consequences of such an intervention would mainly affect the child’s self-understanding as an equal member of the human species. And, as Habermas believes, egalitarian interpersonal relations require such a symmetrical recognition. This very recognition “rests on the assumption that there is, in principle, a reversibility” (Ibid, p. 63) to our human relations. Do genetic interventions preclude one’s possibility to display empathy or to take the other’s perspective?

Habermas’ goal is to show that genetic interventions, or “programming enterprises” as he calls them, cannot but produce asymmetrical and unequal relationships because they are a form of dependence due to the genetically fixed

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6 Genetic enhancement disrupts a core intuition we hold about our lives, “namely, that we act and judge in persona proprie—that is, in our own voice speaking and no other” (Habermas 2003a, p. 55).

7 Habermas calls this “an unobstructed future of his own.” In footnote 54, he also acknowledges that a similar claim also made by Joel Feinberg in the ‘Open Future’ Argument. Feinberg believes that children should possess “anticipatory autonomy rights” such that their future life options are respected and kept open. An impartial decision should not impose a specific life project onto child’ future and “should send [the child] out into the adult world with as many open opportunities as possible, thus maximizing his chances for self-fulfillment” (Feinberg 1992, p. 84).
intentions of the parent (Ibid, p. 63). However, mere irreversibility would not qualify a relation as immoral. The parent–child relation is by definition an irreversible relation since children do not beget their parents, and we do not think of this relation as being immoral just in virtue of this property. What is the specific feature that a genetic manipulation adds onto the question of irreversibility such that it becomes sufficient for Habermas to call for its reprobation?

The question is whether a symmetrical [equal] relationship is still possible between “the programmer and the product thus designed” (Ibid, p. 65). Unlike the parent–child relation which establishes a form of irreversible social dependence by contingency, “eugenic programming establishes a permanent dependence between two persons” by ascription (Ibid, p. 65). This crucial distinction is supposed to highlight what is specifically wrong about genetic enhancement. How is it possible that two different forms of permanent dependence that produce the same result could be so different in their moral consequences? In other words, what is morally different between what is given by “organic nature” and by “genetic manufacturing”?

“The product cannot, to put it bluntly, draw up a design for its designer” (Ibid, p. 65). The child knows that he cannot change places with his parents. A parent becomes a designer when he inscribes in the genome of his child a qualitative determination of his future life (Ibid, p. 64). Only the genetic dependence of a programmed person can “lay the grounds for a social relationship in which reciprocity between persons of equal birth could be revoked” (Ibid, p. 64). Habermas deems that such a “form of dependence is foreign to reciprocal and symmetrical relations of mutual recognition proper to a moral and legal community of free and equal persons” (Ibid, p. 65). And, its foreign character is largely determined by a morally significant loss of contingency of the process of human fertilization. Why does contingency morally matter?

This contingency “proves to be a necessary presupposition for the fundamentally egalitarian nature of our interpersonal relationships” (Ibid, p. 13). If genetic enhancement prevents human beings from truly regarding themselves as unconditionally equal-born persons in relation to previous generations, this will “affect the inalienable normative foundations of [their] societal integration” (Ibid, p. 26). By altering the contingency of one’s life, genetic enhancement calls into question “a necessary condition for an autonomous conduct of life and a universalistic understanding of morality” (Ibid, p. 48). Thus, Habermas proposes that the possibility of genetically enhancing human beings should not simply be approached with caution, but rather be prohibited (Ibid, p. 15) all together given the instrumentalization of genetic humanity, the restrictions placed on a child’s future, and the disruption of the conditions for moral equality.

**Suppositions of Habermas’ Fears About Genetic Enhancement**

Habermas’ argument from human nature is grounded on three fundamental working assumptions or hidden premises. If these three assumptions turn out to be false, his

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8 The geriatric literature could bring some counterexamples to this line of argument (Horowitz 1985; Fetterman 2007).
argument would fail to make a positive case for the moral impermissibility of genetic enhancement techniques.\textsuperscript{9} Let’s specify those assumptions separately.

As the textual evidence shows, Habermas assumes that all human beings share a genetic structure that determines their properties, their dispositions and abilities, and to a certain extent even their behavior and personal identity. He is committed to some form of kind essentialism.\textsuperscript{10} If gold’s behavior [melting at a certain temperature] is caused by its internal structure whose atomic number is 79, the same way, human-typical properties that emerge at the level of human organisms and (to a certain extent) shape their identity are caused by our hidden genetic structure or a “natural essence” (Habermas 2003a, p. 115).\textsuperscript{11} Human beings share typical behaviors (a certain self-understanding, linguistic and communicative behavior) in virtue of a universally shared genetic code unique to our species, or what Habermas calls, “the genetic foundations of our existence” (Ibid, p. 22). And so, an alteration of this structure or code would produce harming effects at the level of our self-understanding.

It is important to notice here that kind essentialism requires more than a universally shared trait. Out of the whole list of human universals,\textsuperscript{12} we would probably judge only a few as being causally responsible in shaping who we are. We do not think of “coyness display” or “classification of weather conditions” (Pinker 2002, pp. 435–136) as determining our nature. Habermas’ argument from human nature shows us that we are not the product of universal processes of socialization exclusively. Why? Any modification or impairment at the genetic level triggers significant modifications at the level of the organism. We can definitely observe the effects of a genetic impairment in the case of Trisomy 21 (Down’s syndrome). An organism who has an extra copy of the chromosome 21 will most likely produce the

\textsuperscript{9} This is a similar line of reasoning to the one Shrader-Frechette defends against Leopold’s and Callcott’s land ethic. She notes, “Callcott’s ethics fails because: there is no biological coherent notion of “community” robust enough to ground either contemporary scientific theory in community ecology or environmental ethics. […]” (Shrader-Frechette 1996, p. 59). More specifically to the genetic enhancement debate, Powell & Buchannan have pursued this type of argument in a very convincing way (Powell & Buchannan 2011; Powell 2012).

\textsuperscript{10} I use here Mark Ereshefsky’s definition of essentialism. He labels this sort of essentialism either as kind essentialism (2007) or as traditional essentialism (2010). Kind essentialism or traditional essentialism has three tenets. “One tenet is that all and only the members of a kind have a common essence. A second tenet is that the essence of a kind is responsible for the traits typically associated with the members of that kind. Third, knowing a kind’s essence helps us explain and predict those properties typically associated with a kind” (2007, section ‘The ontological status of species’). Two points are important here. It is crucial to recognize that not all forms of kind essentialism fall prey to the same critique that applies to Habermas. For a particularly sophisticated account of kind essentialism that overcomes some of the difficulties coming from an evolutionary biology perspective, see Oderberg (2007, especially chapter 9, “Species, biological and metaphysical”, pp. 201–240). Second, the textual evidence I provide supports the reading that Habermas’ implicit essentialist account is closer to a traditional form of essentialism as Ereshefsky understands it than to other forms of kind essentialism (including Oderberg’s version).

\textsuperscript{11} The bioconservative George Annas shares the same perspective when he writes that the wrongness of genetic enhancements resides in the fact that these “techniques can alter the essence of humanity itself” (Annas et al. 2002, p. 153; see also, Annas 2005).

\textsuperscript{12} I have in mind here the list of human universals first published by Brown (1991, 1999), and later popularized by Pinker (2002, pp. 435–439).
following list of phenotypic and behavioral modifications: small ears, small mouth, upward slanting eyes, impulsive behavior, short attention span, etc. Hence, this genetic humanity is not just a property universally shared by human beings, but the very essence that makes us who we are and renders us unique among the other species.

In addition to the textual evidence that shows Habermas’ commitment to kind essentialism, one could also point out that his argument could not function without such an endorsement. If the universality and the uniqueness conditions are not met, if there is no genetic essence that all and only human beings share, Habermas would have to accept a particularly detrimental conclusion for his argument. There could be cases of genetic enhancement when this practice would not alter human nature, and as such, should not be morally prohibited. Moreover, if the causal condition is not met as well, if our personal identities are the product of processes of socialization, it would also make little sense to prohibit genetic enhancement since they would have no effect on our self-understanding, and ultimately, on our moral agency and on the equality of our moral systems. So, without such a commitment, Habermas’ argument cannot deliver the robust conclusions he hopes for.

Second, Habermas agrees with the following core claim: genetic modifications predetermine the future of enhanced children. If some parents intend to enhance their children’s genome, by doing so, they place permanent demands on their future. Given the irreversible character of such constraints, children will “no longer be capable of understanding themselves as the undivided author of their lives, and thus, will feel bounded by the chains of the previous generation’s genetic decisions” (Ibid, p. 91). This is the sense in which eugenic programming for desirable traits can only “give rise to moral misgivings as soon as it commits the person concerned to a specific life-project” (Ibid, p. 61).

Claims that make reference to the fixity of one’s genetic makeup, and also to the fact that specific forms of behavior could be genetically predetermined, assume that our essence or who we are as human beings, is already present at birth in our fixed set of genes. As Lewontin points out, this view of human organisms assumes that an inner program, which is written in a genetic language, already shapes our individual life stories. We are nothing else than “the inevitable consequences of the biochemical properties of the cells that make [us] up as individuals” (Lewontin et al. 1984, p. 6). And so, the most basic features of a human organism, its morphology, physiology, and innate behavior, are “directly products of the genes” (Lewontin 2000, p. 31).

Last, Habermas is committed to the idea that “morality rests on the assumption that there is no definite obstacle to egalitarian interpersonal relations” (Habermas 2003a, p. 63). He not only endorses this claim, but highlights also the very condition for equal moral relations, namely “mutual and symmetrical recognition” (Ibid, p. 63). We should strive to preserve the symmetry among communicative actors as a condition for reaching consensus over normative matters, and consequently, for preserving moral equality.¹³ The question to be answered here is: does genetic enhancement preclude the possibility for moral equality? Yes, says Habermas. Why?

¹³ For a more detailed account of how this process of consensus is supposed to be reached, why it is not merely conventional, and also why it produces normative obligations (see, Habermas 1999).
The core assumption is that the symmetry of moral relations is profoundly disrupted when parents genetically enhance their child. As a consequence of the demands placed on the child’s genome, the child cannot liberate himself from such a form of dependence. Unlike the asymmetrical filial dependency which could be overcome “through an elaboration of self-reflexive insights” (Ibid, p. 62), “in the case of genetic determination carried out according to parents’ own preferences, there is no such opportunity” (Ibid, p. 62). Genetic enhancement creates an irrevocable form of dependency that the child cannot truly appropriate, and so an asymmetry that he cannot overcome. Hence, genetic enhancement impinges on the mutual and symmetrical recognition among communicative actors, and precludes the possibility for the enhanced child, at least psychologically, to feel as an equal member of the moral community.14

Falsity of Habermas’ Assumptions: Three Counterarguments

My intention in this section is to prove that the three central factual assumptions at work in Habermas’ argument from human nature are either false or particularly problematic. As previously shown, the first assumption highlights his commitment to a form of essentialist thinking regarding human beings. Accordingly, we all share a uniquely human genetic essence. This genetic essence accounts not simply for the identity of the members of this class, but also for the kinds of beings we are, for our dispositions, and for our behavior. This is our “human genome” that brings about and sustains our species-typical properties. However, this form of kind essentialism has been invalidated by all biological and genetic accounts.15 In order to disprove Habermas’ assumption, one only has to call into question the first tenet of kind essentialism, namely that all and only human beings share a genetic essence or a fixed set of genetic elements.

First, there is no universally shared micro-structural [genetic] essence that explains the observable properties of human beings. “There is no single, standard, normal DNA sequence that we all share” (Lewontin 1992, p. 36). Empirically speaking, the heterogeneous processes that are responsible for explaining the significant intraspecific genetic variation (selection, mutation, genetic drift, genetic recombination, meiosis, biased variation, non-random mating) ensure together “an almost unlimited variety in the range of possible genotypes that the members of a sexually reproducing species can exemplify” (Okasha 2002, p. 196). What does Okasha’s claim entail? Given the level of heterogeneity of all these evolutionary (causal) mechanisms, one simply cannot assume, as Habermas does, that natural

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14 In his reply to Nagel’s argument, Habermas contends that it would be misleading to think that prenatal enhancements would “violate the moral rights of another person” to such an extent, that it would “force him to perform particular practices from which others are excused.” Genetic enhancement would be however a “harm to his own moral self-understanding” (Habermas 2003a, p. 81).

15 A number of biologists and philosophers of biology have made this point. Among, the most eloquent are Mayr 1982, pp. 38–39; Mayr 2001, pp. 73–83; Alper and Beckwith, 2000, pp. 311–314; Sober 2000, pp. 148–152; Ereshefsky 2007, 2010; Dupré 2002, pp. 175–196; Okasha 2002.
selection would necessarily favor the selection a common structure or of genotype universally distributed among all the members of the human species.\textsuperscript{16}

Certainly, there are genetic similarities among the organisms of a species. For example, most human beings have 23 chromosome pairs, while our closest primates cousins have 24. But, once we have asserted those genetic similarities, a basic empirical assessment would show that not all human beings have 23 chromosome pairs. There are human organisms that suffer of Down’s syndrome. Although they have an extra copy of the chromosome 21 (hence, the gamete has 24 chromosomes), we do not fail to consider them human.

However, a proponent of kind essentialism could claim that if genetic variation produces a loss of an essential trait (genetic or phenotypic), the offspring arguably should not be classified as a con-specific with the parents. In order to overcome this challenge, a more robust explanation as to why the members of a species possess some typical trait is required. Ereshefsky (2010) argues that such an explanation requires both genealogical and intrinsic mechanisms that underlie the development of the trait in question. So, how do human beings possess language? Embryonic humans possess developmental mechanisms that cause adult humans to possess such a trait. However, no biologist could stop the explanation here, since those developmental mechanisms, which are neither necessary nor sufficient, must be passed down from parent to offspring via genealogical relationships. So, even in the case of an organism that does not possess language, it would still be classified as a con-specific by virtue of important genealogical relations among organisms (Ereshefsky 2010, p. 680).\textsuperscript{17}

A kind essentialist could furthermore retort that variation is not in and of itself incompatible with some form of essentialism.\textsuperscript{18} Okasha believes that “modern biology offers no ground for supposing that intra-specific variation is confined to some particular set of accidental traits, leaving an invariant shared essence” (Okasha 2002, p. 197; Sober 1980). Given a Darwinian evolution framework, it would be counterintuitive to think otherwise precisely because we “expect variation with respect to all organismic traits” (Okasha 2002, p. 197) and not merely to those accidental ones. The intra-specific variation with respect to all organismic traits is a condition for the process of natural selection, and so, we do not share a genetic “internal structure” proper to all the organisms of our species. Hence, the universality condition fails in the case of human organisms.\textsuperscript{19}

\textsuperscript{16} On the contrary, empirical evidence shows that genetic intra-specific variation is more important than intra-specific variation in morphology (Ridley 1993).

\textsuperscript{17} Okasha endorses such a conceptual argument against species essentialism. “Even if there were a species whose members all shared a set of characteristics, phenotypic or genotypic, not shared by the members of any other species, this would not make those characteristics essential to membership of the species. For if a member of the species produced an offspring, which lacked one of the characteristics, say because of a mutation, it would very likely be classed as con-specific with its parents.” (Okasha 2002, p. 197; see also, Ereshefsky 2010).

\textsuperscript{18} This is an important ongoing discussion in the philosophy of biology (Devitt 2010; Rieppel 2010; Ereshefsky 2010; Boyd 2010). For more details on a “homeostatic cluster of properties” account of species or on disjunctive essentialism (Boyd 1999, pp. 141–185).

\textsuperscript{19} Okasha rejects also Putnam’s point about lemons. “Putnam claims that the true criterion for being a lemon is having the “genetic code” of a lemon, this—rather than any observable traits—is the essence of lemonhood” (2002, p. 198) making reference to Putnam (1975, p. 240).
Second, let’s grant the universality condition to the proponent of the kind essentialism and assume that a biological trait could have this fragile status. Most likely such a trait would not be unique to human beings. It is an observable fact that “related species typically share the vast majority of their genes, and within each species there is much genetic variation” (Okasha 2002, p. 197). In a 2005 article, a consortium of researchers “found that the chimp and human genomes are very similar and encode very similar proteins. The DNA sequence that can be directly compared between the two genomes is almost 99 percent identical. When DNA insertions and deletions are taken into account, humans and chimps still share 96 percent of their sequence” (NIH News 2005; Mikkelsen et al. 2005). This view about the genetic similarities between humans and our closest ancestors is also advocated in one of the most comprehensive articles about genetics and human uniqueness published in Nature Reviews Genetics in 2008 (9:749–763). Based on the ways in which we think of those genetic differences (protein structures, gene and protein expression, non-coding sequences), the variation does not surpass the quantifiable differences of \( \sim 4 \% \) as the overall difference between two genomes. More importantly, the remaining genetic difference does not seem to be correlated with the most important phenotypic differences among closely related species, i.e., humans and our closest ancestors. One of the most plausible hypotheses explaining this variation is made not in terms of genes, or single-nucleotide changes, but in terms of the heterogeneous genomic mechanisms involved—insertion, deletion, duplication, translocation (Varki et al. 2008, p. 752).

So, “it is simply not true that there is some common genetic property which all members of a given species share, and which all members of the other species lack” (Okasha 2002, p. 196). As such, Habermas’ kind essentialism is incompatible with the basic claims of evolutionary biology regarding human beings and his essentialist view of human nature is fatal for his argument against genetic enhancement.

Habermas’ argument relies on a second assumption, namely that genetic enhancement would harm our relation with ourselves by distorting our own self-understanding. Here, he does not simply acknowledge that there is a relation between our genetics and who we are. This claim would be trivial. He seems to endorse the stronger view that parents could place “genetically fixed demands” (Habermas 2003a, pp. 51, 63) onto their children through genetic enhancement technologies, and thus determine who they are.\(^\text{20}\)

This view is however scientifically false. It is not the case that “there is a genetic blueprint that processes different environmental inputs, converting them (according to some inner programming) into organisms whose differences are entirely specified by genetic differences” (Lewontin 2000, p. 31). If it were the case, this claim would amount to something nonsensical, such as “African Pygmies are extremely short and Dinkas are extremely tall, no matter what their nutrition” (Ibid, p. 31). A proper biological account about how an organism is formed has to reject the view that organic development is the mere unfolding of a predetermined genetic program. For

\(^{20}\) The ambiguous language that seems to commit Habermas to some form of genetic determinism has been a common charge against his argument, as Prusak notes (2005, p. 38; for a more recent critique see, Buchanan 2011, p. 5).
Lewontin, a process of ontogeny of an organism “is the consequence of a unique interaction between the genes it carries, the temporal sequence of external environments through which it passes during its life, and the random events of molecular interactions within individual cells” (Ibid, p. 18).

Often, at this point, most critics would bring into discussion the Huntington chorea syndrome (HD) or any other single gene disease as proof for a view close to Habermas’ position. This view espouses a certain form of genetic determinism since whenever a human being possesses abnormally long cytosine-adenine-cytosine nucleotide sequences at a particular locus in their genome—near the tip of chromosome 4—this organism will suffer a neural degeneration between the ages of 30 and 50. However, even in the case of HD, Kitcher shows that this view is not true in all environments (Kitcher 2003, p. 284). And, as soon as one tweaks this strong version of genetic determinism in favor of a more moderate one, one has to acknowledge that any phenotypic trait is the product of a particular DNA sequence and all the other environmental factors interacting with it. Hence, each phenotypic trait has a certain norm of reaction and the relative contribution of genes and environment cannot be parsed out at the level of the individual but only at the level of the population (Lewontin 2006).

In his defense, Habermas counters this charge by telling us that that we “fail to see that […] in the case of enhancing eugenics, it is primarily the intention governing the eugenic intervention that counts” (Habermas 2003a, p. 124, ftn 54). The mere knowledge of this form of manipulation would be sufficient to restrict the child’s future, since he would “know that the manipulation has been carried out with the sole intention of acting on the phenotypic molding of a specific genetic program” (Ibid, p. 124, ftn 54). However, we have no evidence as of now even for this milder claim. Hence, Habermas fails to engage with this critique of his deterministic commitments.21 Is there additional textual evidence that could nonetheless alleviate this charge?

To his credit, Habermas also says that it would be wrong to associate the prefabricated visions the parent would project onto their child with genetic determinism. In a short presentation of his book, he claims that his account “is not a presumption in favor of genetic determinism” (Habermas 2003b, p. 155). So, let’s assume for the sake of the argument that what Habermas truly means when he uses the notion of “determination” is not that genetic enhancement would necessarily commit a child to a specific future, but rather that it would “determine […] a range of opportunities” (Habermas 2003a, p. 89).

People often believe that genes determine an organism’s capacities and, thereby, one’s genome sets limits to what an organism may or may not achieve depending on the environment in which the organism develops. This is called “the metaphor of the empty bucket” (Lewontin 2000, p. 26). The idea behind this is that “genes determine the size of the bucket, and the environment determines how much can be poured into it” (Ibid, p. 26). When Habermas claims that genetic enhancement

21 At a quick glance, the notion of a child being “programmed” occurs about twenty times throughout the book. The notion of “fixed demands or intentions”, or “determinism” occurs about eight times each. And, Habermas defends himself only once against genetic determinism.
determines a range of opportunities, he means that given the child’s enhanced genome, in a poor environment, its phenotypic development will be poor (but still probably better than other non-enhanced genotypes). But in an enriched environment, “the genotypes with superior intrinsic capacity will reveal themselves” (Ibid, p. 28). So, genetic enhancement would determine the child’s future, by determining the range of opportunities and activities that this organism could achieve.

However, even if we assume that Habermas rejects his commitment to hard biological/genetic determinism, we can still claim that he is at least committed to a weaker form of determinism, namely that genes determine an organism’s (range of) capacities.22 Certainly, Lewontin does not deny that in a way, genes determine the capacities of an organism. “No fruit fly, no matter in what environment it is raised, will be able to write books about genetics” (Ibid, p. 28). Hence, “in a broad and important sense, the biology of a species is limited by the possibilities circumscribed by its DNA” (Ibid, p. 28).

Human beings do speak some language, whereas our closest primate cousins do not. The possibility of speaking a language depends upon having the right genes.24 Yet, “the question of the difference between two states (displaying linguistic behavior or not) is not the same as a question about the causation of either of them” (Ibid, p. 29). I can speak a language (whereas a chimp cannot) because I have both the right genes and the right environment, and there is no way to parse out the relative causal contribution to this phenotypic trait of mine.25 Certainly, whether we talk about metabolic rate, growth rate, or mental activity, a genotype has a maximum in some environments and a minimum in other lethal or severely debilitating environments. But, once this claim is made, we also know [from experimental data on reaction norms (Dobzhansky and Spasky 1944)] that the environment in which the maximum (or minimum) is realized is different for each genotype (Lewontin 2000, p. 28). More specifically, in the case of Achillea Millefolium’s (the Yarrow plant) norm of reaction, the genotype one that shows the best growth at the low and high elevations has shown the poorest growth at the medium elevation (Lewontin 2000, p. 22). So, merely knowing one’s genome is not sufficient to predict the range of opportunities that the future organism will have.

Thus, even if we adopt a charitable reading of Habermas’ argument and we point out that he is only flirting with some form of genetic determinism, this would still be

22 Lewontin identifies this as one of the three most common errors made in describing the relations between the genes and the organism (Lewontin 1995, p. 19). See also, Dupré (2003, pp. 83–85).

23 Eric Parens makes a similar point by appealing to a distinction between weak versus strong understanding of the role of genes. The weak understanding amounts to conceding that when we claim, “her love for skydiving is genetic”, what we really mean is that “genes are a precondition for her skydiving […]. She could not dive out of airplanes were it not for her genes functioning just as they were […]]” (Parens 2004, p. S17).

24 Recent research has shown that humans and some higher primates share at least one of the genes [FOXP2] that is highly correlated with spoken language (Marcus 2004, p. 33). However, this does not completely underscore the importance of genetic difference in influencing linguistic capacities, since we know that linguistic behavior is a complex multiple-gene pathway.

25 Lewontin provides a more detailed account regarding the impossibility of separating and measuring the causal contribution of genes and environment at the individual level (Lewontin 2006, pp. 520–525; and Griffiths and Gray 1994).
sufficient to reject his argument all together. Hence, enhancing one’s genome does
not preclude one’s possibility to be successfully oneself or does not turn parents into
tyrrants. Habermas wrongly assumes that a child is specified only by a set of genes at
birth and that genetic enhancement would impinge on his future life.

The last tenet of Habermas’ argument from human nature implies that genetic
changes could produce asymmetrical relationships and call into question moral
equality. As we have already mentioned, the assumption behind this argument is
that moral equality demands from the moral actors involved in a communicative
action to be in symmetrical position of argumentation in order to achieve a
consensus over normative matters. My counterargument is based on two kinds of
claims—a meta-ethical claim and an empirical claim.

In the past 30 years, there has been an ethical revival to grant direct moral
consideration even to individuals that cannot represent or speak out for their own
interest. Philosophers who advocate for the moral defense of non-human animals
point out that ethical models based on a symmetry requirement are to a certain
extent both anthropocentric and inconsistent.26 And, so is Habermas’ model.27

He acknowledges that human dignity, “connected with this relational symme-
try”, is “the kind of ‘inviolability’ which comes to have significance only [emphasis
mine] in interpersonal relations of mutual respect, in the egalitarian dealings among
persons” (Habermas 2003a, p. 33). This form of human centered value fails to deal
with our robust moral intuition that non-human animals deserve more than our
instrumental compassion and they ought to be the recipients of our direct moral
consideration. A number of animal ethicists have rightly shown that the question of
moral equality should not be framed in terms of symmetrical agency and mutual
recognition but in terms of equal interest (Bernstein 1998, 2004). As soon as it is
framed in terms of symmetrical agency, the inconsistency of this model is revealed.
A number of human individuals find themselves engaged in asymmetrical relations
with other moral agents and their interest continue nonetheless to be weighted
equally. Marginal human cases, though they cannot speak for themselves more than
a non-human animal can, are still [inconsistently, and some might say unjustly]

26 A very interesting argument that focuses “on the vulnerability of the subjects concerned” emerges in
the field of animal ethics. This argument shows that “the massive vulnerability of animals to humans”
should be enough to force us to reconsider the moral status of nonhuman animals. In this case, unlike in
Habermas’ model, the asymmetrical relations are significant for the way we should understand moral

27 There are a few passages where Habermas deals with the questions relating to the moral consideration
of non-human animals. In Reply to my critics (Habermas 1982), he proposes a theory of compassion
towards natural entities. “The impulse to provide assistance to wounded and debased creatures, to have
solidarity with them, the compassion for their torments, abhorrence of the naked instrumentalization of
nature for purposes that are ours but not its, in short the intuitions which ethics of compassion place with
undeniable right in the foreground, cannot be anthropocentrically blended out” (Ibid, p. 245) However, in
the case on an ethics of compassion it is hard to define a clear criterion to designate for which living
creatures we have to feel compassion. Moreover, how do we have to deal when a moral principle might be
in conflict with our own needs? Given that the norm-conformative attitude toward external nature does
not yield some normative validity, one is not obligated to be a vegetarian by compassion for animals,
unless this person is committed to some other maxim. The limit of our obligations is reached when our
vital interests conflict with those of animals.
counted inside “the universe of members who address inter-subjectively accepted rules and orders to one another” (Habermas 2003a, p. 33).

Moreover, Habermas’ argument is based on the assumption that genetically modified human beings cannot critically appropriate their life story once they are confronted with their parents’ programming intentions. Significant psychological harm would prevent them for considering themselves as being equal members of the moral community. However, we should not grant this claim too easily to Habermas since it is the kind of claim that generates a set of expectations that should be observable in particular situations. In other words, it is a testable claim that is prone be falsifiable through empirical evidence. And, at this point, empirical evidence from other similarly positive eugenic modifications\(^\text{28}\) seems to disprove it.

Since 1978, the year when the first test-tube baby was born, parents have made various eugenic interventions on their children’s genetic makeup, and psychological studies have not supported the conclusion that they would be socially, emotionally, or psychologically maladapted. Clinical research have suggested that in vitro fertilization (IVF) interventions “do not have a detrimental effect on the child’s psychological development over and above the range of emotional environments to which children in naturally conceived families can be exposed” (Sutcliffe 2011; Barnes et al. 2004).\(^\text{29}\)

Certainly, one could reply that an IVF does not carry the same burden like a positive selection practice since it is mainly aimed (negatively) at the elimination of undesirable trait and not at the enhancement of a non-species-typical trait. However, in cases of sex selection for family balancing reasons,\(^\text{30}\) which one could label as positive form of eugenic selection since this practice is not linked to avoiding some genetic disorder, “experience so far is encouraging, with several hundred children being born after PGD without apparent detriment” (Savulescu and Dahl 2000, p. 1879). Nobody disputes that today’s practices of sex selection are still different from tomorrow’s radical enhancements (Bostrom 2005; Kurzweil 1999, 2005; de Grey and Rae 2007). But, if both procedures are positive forms of eugenic selection, as I believe they are, given the absence of disease for justification, the difference might be rather one of degree and not of kind.\(^\text{31}\) So, according to Habermas, both should have dramatic effects on moral equality. At this stage however,

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\(^{28}\) There are at least two ways in which the notion of eugenics is used in reference to genetic modifications. Eugenic as in negative eugenics, refers to a case where a parent through PGD [preimplantation genetic diagnosis] aims to prevent his child from suffering some serious genetic disease. Eugenics, as in positive eugenics, refers to cases where the parents positively select for a more desirable trait. This is understood as enhancement, and this form of genetic intervention is the target of Habermas’ moral argument.

\(^{29}\) There are bioconservatives who are in principle against sexual reproduction via IVF (Kass 1998).

\(^{30}\) This practice is subject to moral debate since it uncertain whether family balancing is truly sufficient to alleviate the moral charge against this from of positive selection (Macklin 2010; Penning 1996).

\(^{31}\) However, critics could still point out that IVF is different in kind from genetic enhancement since the former involves non-identity preserving selection of one embryo against other embryos, whereas the latter involves genetic modifications realized on the same numeric embryo. We have some evidence that the absence of therapeutic reasons in cases of positive sex selection does not produce the psychological consequences Habermas assumes. However, we do not know at this point whether a genetic modification on the same numeric embryo would not have the psychological impact Habermas claims.
psychological studies do not support this conclusion. Hence, even if we do not completely reject the third tenet of Habermas’ argument, empirical studies cast a very serious doubt about his conclusions.

Conclusion

Many people have suggested that we need to move beyond pros and cons, and “do the hard work of thinking (about) how we can best respond, as individuals and institutionally, to the complex phenomena of enhancement” (Buchannan 2011, p. 19). Within this process, I contend that one of the first steps is the debunking of the argument from human nature. Not only has this argument been the most visible one, or even the most influential one, but, very often, is has stalled the debate through a serious commitment to “a gross misunderstanding of evolution” (Ibid, p. xii; see also, Lewens 2012).

From murky rhetoric to claims that are not supported by empirical evidence or to claims ignoring our biological constitution and our evolutionary story, the argument from human nature is grounded on a set of faulty assumptions. As such, this argument should not distract us anymore from the real and more difficult issues at stake in the debate on genetic enhancement.

Acknowledgments Many thanks to those who gave me valuable feedback on early presentations of this material, including Mark Bernstein, Dan Smith, Eric Meslin, Daniel Kelly and the Research Staff at the Hastings Center. I would also like to thank the anonymous referees for their valuable comments and suggestions on a previous version of this paper.

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