



Eugenics in *Brave New World*: A New Historicist Reading

Mabandine Djagri Temoukale

Department of English, University of Kara, Togo.

Received: 03 Oct 2022; Received in revised form: 20 Oct 2022; Accepted: 25 Oct 2022; Available online: 31 Oct 2022
©2022 The Author(s). Published by Infogain Publication. This is an open access article under the CC BY license
(<https://creativecommons.org/licenses/by/4.0/>).

Abstract— *In Brave New World, eugenics translates into a practice that not only enhances the performance of certain social classes but also encourages sterilization, discrimination, and standardization of citizens on the assumption that anti-social behaviors are genetically inherited. However, a new historicist reading of the novel attempts to show that the eugenic practices of the leaders of the World State are inspired by classical eugenic methods. It argues that the social problems such as delinquency, alcoholism, and poverty that leaders in Brave New World seek to control stem from social injustice. The analysis, therefore, reveals that negative eugenics (eliminating the bad genetic stock responsible for anti-social behaviors) using technoscience cannot be a solution to a problem caused by social injustice. Nevertheless, the paper argues that the survival instinct pushes humans to practice eugenics in order to pass on to their descendants a genetic stock that allows them to adapt and survive in an ever-changing world.*

Keywords— *eugenics, enhancement, undesirable, sterilization, technoscience.*

Résumé— *Dans Brave New World, l'eugénisme se traduit par une pratique qui non seulement améliore les performances de certaines classes sociales mais encourage également la stérilisation, la discrimination et l'uniformisation des citoyens en partant du principe que les comportements antisociaux sont génétiquement hérités. Cependant, une nouvelle lecture historiciste du roman tente de montrer que les pratiques eugéniques des dirigeants de l'État mondial sont inspirées des méthodes eugéniques classiques. Elle soutient que les problèmes sociaux tels que la délinquance, l'alcoolisme et la pauvreté que les dirigeants du Brave New World cherchent à contrôler découlent de l'injustice sociale. L'analyse révèle donc que l'eugénisme négatif (élimination du mauvais stock génétique responsable des comportements antisociaux) utilisant la technoscience ne peut être une solution à un problème causé par l'injustice sociale. Néanmoins, l'article soutient que l'instinct de survie pousse les humains à pratiquer l'eugénisme afin de transmettre à leurs descendants un stock génétique qui leur permet de s'adapter et de survivre dans un monde en constante évolution.*

Mots-clés— *eugénisme, amélioration, indésirable, stérilisation, technosciences.*

I. INTRODUCTION

In Aldous Huxley's *Brave New World*, eugenic practices have enabled the World State to create and condition citizens capable of living harmoniously within the social structure that has been established. In this quest for total control of bodies and lives, and in a political vision of stability, leaders such as Mustapha Mond (a government official and resident controller of Western Europe) oversee not only the classification of citizens but also their production according to the needs of the

fictitious state. Thus, babies produced in test tubes are conditioned to join the following castes: the Alphas(α), Betas(β), Gammas(γ), Deltas(δ), and Epsilons(ϵ). In addition, for the needs of human resources adapted to very specific tasks, each caste or class is divided into two subgroups represented by plus (+) and minus (-): Alphas ($\alpha+$, $\alpha-$) form the ruling elite of the World State; Betas ($\beta+$, $\beta-$) are civil servants who are used in various administrations; Gammas ($\gamma+$, $\gamma-$), Deltas ($\delta+$, $\delta-$) and Epsilons ($\epsilon+$, $\epsilon-$) represent, in general, the working class.

Each social class covets that which is deemed superior to it according to the established hierarchy: Alpha ($\alpha+$, $\alpha-$) > Beta ($\beta+$, $\beta-$) > Gamma ($\gamma+$, $\gamma-$) > Delta ($\delta+$, $\delta-$) > Epsilon ($\epsilon+$, $\epsilon-$). This covetousness is controlled through conditioning and standardization where chemicals are injected into “test tube babies” so that they can have bodies that fit the established social order. The brave new world is thus created, ensuring happiness, stability, and peace for every category of citizen.

However, the manifestation of eugenic practices and methods where science and technology are used to enhance the intellectual and physical performance (Lundin, 2008; Perbal, 2011) of the citizens of the World State is focused on the Alphas ($\alpha+$, $\alpha-$) class. Although this improvement of the human race is also observed at the level of Betas ($\beta+$, $\beta-$), there is, however, a decrease in the production quality of Betas in order to maintain the superiority of Alphas. In contrast, the other classes or castes (Gammas ($\gamma+$, $\gamma-$), Deltas ($\delta+$, $\delta-$), and Epsilons ($\epsilon+$, $\epsilon-$)) are instead victims of eugenics defined as a practice that promotes involuntary sterilization, segregation, discrimination and social exclusion (Black, 2012; Yakushko, 2019). These citizens sterilized from conception (fertilization) are referred to in the technoscientific jargon of the World State as “freemartins” (Huxley, 1932, p.13). This eugenic practice is reminiscent of Plato's city (Luciana, 2008) where the rules that fuel the regulation of the city should make it possible “to achieve, through the control of marriage, fertility and often all sexuality” (Charbit, 2002, p. 231) a stable regime.

Through the new historicist approach to *Brave New World*, this paper shows that the eugenic practices of the leaders of the World State are inspired by the eugenic methods and practices that human civilization has experienced throughout its history. It attempts to establish a relationship between eugenics in the literary creation of the English novelist Aldous Huxley and eugenic practices in contemporary societies to show that these practices are found in every human community in different forms, waiting for the arrival of technoscience to increase their visibility. It then argues that the social problems such as delinquency, alcoholism, and poverty that leaders in *Brave New World* seek to control stem from social injustice. The analysis, therefore, reveals that negative eugenics (eliminating the bad genetic stock responsible for anti-social behaviors) using technoscience cannot be a solution to a problem caused by social injustice. Nevertheless, the paper argues that the survival instinct pushes humans to practice eugenics in order to pass on to their descendants a genetic stock that allows them to adapt and survive in an ever-changing world.

For the new historicist approach, a literary work

is the product of the time, place, and circumstances of its composition. The new historicists, therefore, “reject the autonomy of the artist and the work of art [...]. They stress that literary texts must be read and interpreted in their biographical, social, and historical contexts” (Tiway & Chandra, 2009, p76). In a sense, to neglect the context of a literary work would be to miss much of the concern displayed in that work. Therefore, when analyzing a literary work, the new historicist approach “looks at three areas of concern: (1) the life of the author; (2) the social rules and dictates found in a text; and (3) the reflection of the historical situation of a work as evidenced in the text” (Bressler, 1994, p.134). Thus, the context of writing is very crucial in that a writer's actions and beliefs reflect both their individual concerns and those of the society in which they live. To this end, the paper deals with eugenics in *Brave New World* by examining its history in the time of Aldous Huxley (1894-1963). It then looks beyond the literary representation of eugenics in *Brave New World* in order to explore some eugenic practices in contemporary societies.

II. THE HISTORY OF EUGENICS AND BRAVE NEW WORLD

The idea of the transmission of traits (genetics) and the methods of preserving good traits are as old as human civilization as Black (2012, p.13) points out: “Since ancient times, man has understood the principles of breeding and the lasting quality of inherited traits. The Old Testament describes Jacob's clever breeding of his and Laban's flocks, as spotted and streaked goats were mated to create spotted and streaked offspring”. In other words, Black shows that most breeders use Jacob's method, which is considered eugenic, to produce strong and resistant breeds of cattle.

To this end, the privilege of Alphas, predestined through the technological and chemical means used from their conception (fertilization) to their birth (hatching), denotes the ambition of the World State to preserve a perfect race capable of leading and controlling the other classes: “We also predestine and condition. We decant our babies as socialized human beings, as Alphas or Epsilons, as future sewage workers or future... future World controllers” (Huxley, 1932, p.13). However, as an intellectual concern, the hierarchization of social classes was posited by classical Greek philosophers such as Plato (428/427 BC - 348/347 BC) who believed that human society would be healthier if reproduction was left to individuals with desired physical, intellectual and moral qualities (Charbit, 2002; Luciana, 2008).

For the eugenicists in *Brave New World*, those

who are to rule the State can only be nurtured and preserved in order to always ensure their succession in the political leadership of the World State created by Huxley. Thus, the desired qualities enjoyed by the upper class (the English aristocracy) made them the prime target for benefiting from positive eugenics (Yakushko, 2019), that is, the use of technoscience to increase and improve the performance of the human body. In contrast to this type of eugenics, the leaders of the World State in Aldous Huxley's fiction conceive that undesirable traits (deemed anti-social) should make the people who carry them targets to be prevented from reproducing, "those who were destined to become freemartins" (Huxley, 1932, p.13). The hierarchization of individuals takes on a political dimension in which the ruling class (the Alphas) becomes the measuring stick by which the trait analyses and tests of other social classes are calibrated (Patou-Mathis, 2013; Luciana, 2008). This form of eugenic practice is reflected in *Brave New World* in the State's desire to eradicate any kind of delinquency and rebellion that would threaten peace, tranquillity, and social stability.

Furthermore, eugenics in *Brave New World* is also inspired by Charles Darwin's theory of human evolution (Claidière, 2009), according to which weak or unadaptable species are often threatened with extinction through natural elimination. In addition to this theory, which calls for adaptation to the conditions imposed by nature (Timothée et al., 2009), the World State applies another form of eugenics (population control) that draws its substance from the writings of the British economist Thomas Malthus (1766-1834): "Malthus reasoned that a finite food supply would naturally inhibit a geometrically expanding human race. He called for population control by moral restraint" (Black, 2012, p. 11). According to this economist, the social problems and especially the food shortage in the England of his time were caused by overpopulation, the majority of which came from the lower (working) class (Béraud, 2002; Rutherford, 2007). Thus, birth control became imperative to alleviate the shortage of natural resources for the consumption of citizens.

Furthermore, the privilege and qualities accorded to Alphas show that the eugenicists in *Brave New World* take the responsibility for carrying out the selection that was, according to Charles Darwin, an assignment of nature (Taguieff, 2007). Thus, the English upper class is allowed to reproduce more than others because, according to this theory, this class is likely to produce individuals with intelligence and the ability to manage the political affairs of the State. For these eugenicists, the quality of citizens that the state needs for its stability and harmonious development is based on the assumption that:

In most Western countries in the first four decades of the twentieth century, eugenics was based on the idea that genes control most human phenotypic traits, whether physical characteristics such as polydactyly and eye colour, physiological conditions such as A-B-O blood types, or mental and personality traits such as 'febleness of mind', alcoholism and pauperism (Allen, 2011, p. 1).

The above passage corroborates the eugenic ambition of the (fictitious) World State, whose priority is to ensure peace and stability for all classes. Since genes are the main target of this eugenic project, it is, therefore, necessary to act from fertilization (conception of the fetus) where chemical substances and other techno-scientific inputs allow citizens to be programmed and standardized. With hierarchization achieved in childhood, the State is no longer concerned about problems of racism, discrimination, or social segregation as each class is conditioned to be fully satisfied with its status.

Indeed, the history of eugenics executed through technoscience, as presented in *Brave New World*, began with the British Sir Francis Galton (1822-1911), cousin of Charles Darwin. For Aubert-Marson (2009, p.641), eugenics consists of "a program of artificial selection to produce a superior human race by controlling marriages. Galton favored positive eugenics in the hope that people would set eugenic goals for themselves by choosing their partners for marriage". However, in practice, Galton's contemporaries have abused his ideology by preying on the weak and those they deem undesirable. By banning natural procreation involving marriage, the leaders of Huxley's fictional state ensure the population control and quality of citizens it needs.

Furthermore, the abuse of the breeding of a race endowed with leadership has led to identity claims such as that of the Europeans who migrated to the New World, now known as the United States of America: "The *superior race*, that is, the Aryans, is thus, for him, predestined and localized: it is a Western-type population endowed with certain virtues unknown to the other *racés*. Orientals, Africans, and other Amerindians can only be *inferior*" (Hannoun, 1997, p.6). Thus, the Alpha (α^+ , α^-) in *Brave New World* are like those Aryans, the Western-type population who think they are more civilized. The Betas (β^+ , β^-), Gammas (γ^+ , γ^-), Deltas (δ^+ , δ^-), and Epsilons (ϵ^+ , ϵ^-) represent, to a large extent, Orientals, Africans, and other Amerindians.

Indeed, the hierarchization of races in human history is the basis of the superiority complex supported by the theories of philosophers such as Plato and theorists such as Thomas Malthus and Charles Darwin. Their various theories accelerated the traditional eugenic practices of

discrimination and segregation (Black, 2012). Thus, the Nazis in Adolf Hitler's Germany (1889- 1945) could claim an intrinsic superiority of the Aryan race (Hannoun, 1997; Gallo, 2012, 2015; Beaud, 2001). The influence of eugenic ideologies validated by pseudo-scientific demonstrations helps to explain, to a large extent, the horrors committed by the Nazis between 1933 and 1945 on Jews and other communities deemed undesirable. *Brave New World*, published in 1931 before Hitler came to power, became a precursor of the drifts that would occur in a society in which racial and anti-Semitic ideologies were put at the service of political governance. Thus, with the progress of science and technology, eugenic ambitions found expression through, on the one hand, the privileges granted to Alphas ($\alpha+$, $\alpha-$), the race that believes it is called to rule (Granarolo, 2017) and, on the other hand, the elimination of inferior or undesirable races, the Betas ($\beta+$, $\beta-$), Gammas ($\gamma+$, $\gamma-$), Deltas ($\delta+$, $\delta-$) and Epsilons ($\epsilon+$, $\epsilon-$) (Black, 2012).

However, in his discourse on the origin of inequalities among men, Jean-Jacques Rousseau (1712-1778) demonstrates that nature, including genetic transmission, is far from creating the inequalities experienced by human society. For him, the natural selection enunciated by Charles Darwin (1809-1882) has a societal component that Darwin failed to perceive. To this end, the gap between the privileged (fit to lead) and those destined to survive (undesirables) is widened by man's desire to possess rather than share (López Yáñez, 2005; Corbin, 2017). Similarly, social problems such as delinquency, alcoholism, and poverty in *Brave New World* cannot be genetic. Therefore, negative eugenics (eliminating the bad genetic stock responsible for anti-social acts) using technoscience cannot be a solution to a problem caused by social injustices.

III. BEYOND EUGENICS IN BRAVE NEW WORLD

It is important to note that Galton's theory was echoed in the United States of America by Charles Davenport (1866-1944), a biologist, and Madison Grant (1865-1937), a lawyer. The latter gave legal power to eugenics, allowing the enactment of restrictive immigration laws from which "undesirable" individuals arrive in the United States. His book, *The Passing of the Great Race* (1916), was translated into German in 1925 and was well received by the Nazis, of whom Hitler was one of the defenders of the Aryan race. It is thus established that most eugenic abuses in contemporary societies derive their legitimacy from the abuses observed in the United States, England, and Germany (Colas, 2004;

Black, 2012).

In *Brave New World*, the World State government has a dedicated in-vitro-fertilization center called the *Central London Hatchery and Conditioning Centre*. The main tasks of the officials and workers at this center are to monitor the development of the fetuses until they mature, administering, as necessary and at the appropriate stages of the process, the chemicals prescribed for this purpose (Schiffino, 2017). This practice, which is similar to what is now commonly referred to as medically assisted reproduction (Lazaratou & Bernard, 2006; Engeli, 2009), allows the World State to have children whom it is responsible for educating according to the social and political orientation of the country. To this end, Plato, quoted by Le Fourn (2003, p.83), stated: "All those in the city who have passed the age of 10, they (the Athenians) will relegate to the fields and, having removed the children from the influence of the present mores, which are those of the parents, they will bring them up according to their own mores and their own principles". Thus, the strategy of the World State can be seen as an amplification of these classical ideologies. To this end, in *Brave New World*, the parental function is almost replaced, since the birth of children is no longer the prerogative of natural fertilization followed by a pregnancy carried by a mother; and all this concludes with a birth in a family setting. This natural role of the progenitors is well fulfilled by the biotechnology laboratories of the World State.

However, from a dialectical point of view, the government makes the desire to have children possible for parents whose barrenness remains a major challenge. It gives hope to these families by implementing scientifically and technologically assisted reproduction projects (Almeida, 2002; Squires, 2008; Chateaufneuf, 2011). But logically, this practice aims to eliminate the family as a social institution responsible for procreation and the education of citizens.

Consequently, Charles Emil Stangeland (1881-1942), quoted by Charbit (2002, p. 234), comments: "In constructing his ideal state, Plato realized that such a state implied, in practice, communism, and the disappearance of individual responsibility for procreation; hence state control, the only adequate means of avoiding the disasters associated with a large population". The similarity between this comment by Stangeland on the Platonic city and the rules of population regulation in *Brave New World* is striking in that the specialized laboratories of the World State in the novel deal with the 'manufacture' and 'breeding' of citizens according to the qualities and quantities expressed by the government.

Beyond Aldous Huxley's novel, classical eugenics

in human society manifests itself in many ways, especially in the choice of partners to build a family. The families of future progenitors are always looking for healthy, robust girls and boys to ensure a healthy bloodline. They explore the backgrounds of target families in order to avoid any cross-breeding that would favor the birth of offspring with a defective genetic heritage (Perbal, 2011; Patou-Mathis, 2013). Thus, choices of mates are made according to size, shape, and other criteria. Hereditary diseases such as sickle cell anemia and epilepsy are taken into account in the choice of future partners (Agnès, 2009). Inter-marriage is, therefore, prohibited among certain families or communities in order to prevent the spread of a hereditary disability (Luboya, 2014). Negative eugenics is thus practiced without resorting to sterilization or elimination of undesirables as advocated by Galton, Davenport, and Malthus. This shows how eugenic practices are almost in all human communities. It can then be said that science and technology are merely means to satisfy the eugenic inclinations noted in the philosophers of antiquity and the pseudo-scientists of the 18^{ème} and 19^{ème} centuries in Europe and the United States.

In the agro-pastoral sector, eugenics manifests itself in many forms inspired by traditional practices. For a cattle farmer, selecting dominant males to crossbreed with females in order to have a more robust species is eugenics (Yakushko, 2019). Although technoscience was not used, it is important to note that the exclusion of less robust males and females is a strategy to eliminate 'undesirables' (Mucchielli, 2000). Eugenics in the agricultural context manifests itself in the selection of good seeds and other crossbreeding of crops for quality and even quantity yields. Farmers and breeders thus practice eugenics without resorting to biotechnology (Guedon, 2005; Hunyadi, 2010; Terestchenko, 2010; Lundin, 2008) from which Genetically Modified Organisms (GMOs) are developed (Sägesser, 2001; Schifano, 2005). However, in many countries, these GMOs give rise to debates about quality guarantees (Assogba, 2010; Bonneuil, 2006; Rozan, 2007; Granjou and Egizio, 2004; Demortain, 2015; Kassardjian et al., 2011).

Nevertheless, eugenic practices can be seen as human actions that are part of their survival instincts. Seeking a genetically healthy progenitor for procreation can be seen as a problem or a violation of human dignity. The desire to master and control this survival at the expense of those who are genetically disadvantaged raises debates and questions of legitimacy. Referring to Charles Darwin's theory of natural elimination, a man should not substitute himself for nature in deciding whom to let live or die. Using technoscience to act on human nature as the leaders of the World State do in *Brave New World* proves

that bioethics (Borrillo, 2011) and ethics adapted to technological civilization (Pommier, 2013; Vaissière, 1999; Collin, 1999) must take an important place in the so-called positive eugenic practices, which aim at improving genetic heritage in order to fight against chronic diseases or resist natural disasters that could lead to the disappearance of the human race. It is to this ethical control that eugenics, as practiced in Aldous Huxley's novel, contributes to the improvement and happiness of each human being in *Brave New World*.

IV. CONCLUSION

This paper has used a new historicist approach which assumes that knowledge of the historical context of an event, movement, or human practice allows for a better understanding of the literary representation related to that context. Through the history of eugenics, it has been established that *Brave New World* was not only a product of Aldous Huxley's artistic creativity but also an amplifier of eugenic ideologies and practices that remained unknown to the general public. The hierarchy of citizens in the novel, based on birth control and the standardization of citizens, shows how far eugenicists intend to increase their curiosity. The analysis shows that racism and social discrimination in England, the USA, and the Nazi horrors during the Second World War were strongly inspired by eugenicists like Galton, Davenport, Malthus, Darwin, and their contemporaries. The paper holds that birth control in *Brave New World* reflects the desire for world population control in contemporary society, the realization of which raises fears of violation of human dignity and rights.

Beyond the selected novel, the analysis has shown that eugenic practices are not limited to biochemical and biotechnology laboratories but that, in most human communities, the desire for survival drives the selection of future progenitors both among humans and in the agro-pastoral sector. In the second case, Genetically Modified Organisms (GMOs) are seen as a realization of eugenic ambitions to satisfy both the growing demand for food (Malthus' concern) and scientific curiosity.

This study does not cover the ethical aspects of eugenics in *Brave New World*. Further research can explore literary representations of eugenics in connection to bioethics.

REFERENCES

- [1] Agnès, L. (2009). Constructions d'un stigmat sanitaire : la drépanocytose, entre situations locales et globales. hal-00436022 (Luboya, 2014)
- [2] Allen, G. E. (2011). "Eugenics and Modern Biology:

- Critiques of Eugenics, 1910-1945" (2011). *Biology Faculty Publications & Presentations*. 5.
- [3] Almeida, A. et al. (2002). « Investissement parental précoce de l'enfant conçu par procréation médicalement assistée. Autologue », *La psychiatrie de l'enfant*, vol. 45, no. 1, pp. 45-75.
- [4] Assogba, H. (2010). « Les OGM sur les ondes béninoises : analyse d'un débat délocalisé et à distance », *Les Enjeux de l'information et de la communication*, vol. 2010, no. 1, pp. 18-32.
- [5] Beaud, O. (2001). « René Capitant et sa critique de l'idéologie nazie (1933-1939) », *Revue Française d'Histoire des Idées Politiques*, vol. 14, no. 2, pp. 351-378.
- [6] Béraud, A. (2002). « Samuel Hollander, the economics of Thomas Robert Malthus, studies in classical political economy, iv, Toronto, Buffalo, London: University of Toronto Press, 1997 », *Cahiers d'économie Politique*, vol. 42, no. 1, pp. 169-175.
- [7] Bonneuil, C. (2006). « Cultures épistémiques et engagement public des chercheurs dans la controverse OGM », *Natures Sciences Sociétés*, vol. 14, no. 3, pp. 257-268.
- [8] Borrillo, D. (2011). *Bioéthique*. Dalloz, Evelyne Pisier; Olivier Duhamel, 978-2-247-09013-6. hal-01232611
- [9] Bressler C. E. (1994). *Literary Criticism: An Introduction to Theory and Practice*. New Jersey, Prentice-Hall.
- [10] Burgeon, C. (2017). « Les fouilles allemandes à Olympie, 1936-1937. Un prétexte scientifique, une instrumentation idéologique », *Bulletin de l'Institut Pierre Renouvin*, vol. 46, no. 2, pp. 31-44.
- [11] Charbit, Y. (2002). « La Cité platonicienne : histoire et utopie », *Population*, vol. 57, no. 2, pp. 231-260.
- [12] Chateaufort, D. (2011). "Projet familial, infertilité et désir d'enfant : usages et expériences de la procréation médicalement assistée en contexte québécois." *Enfances, Familles, Générations*, number 15, p. 61-77.
- [13] Claidière, N. (2009). Théories darwiniennes de l'évolution culturelle : modèles et mécanismes. *Philosophie*. Université Pierre et Marie Curie - Paris VI
- [14] Clément, A. (2006). « Lutter contre l'oisiveté des pauvres et aiguïser leur convoitise : les préconisations développementalistes des économistes mercantilistes et classiques », *Revue Tiers Monde*, vol. 185, no. 1, pp. 183-205.
- [15] Colas, D. (2004). *Races et racismes de Platon à Derrida : anthologie critique*. Plon.
- [16] Collin, D. (1999). Compte rendu de [JONAS, Hans. *Le principe responsabilité*. Paris : Flammarion, 1998 (Champs) 450 p.] *Horizons philosophiques*, 9(2), 142-146. <https://doi.org/10.7202/801140ar>
- [17] Demortain, D. (2015). « Comment faire preuve en régime de controverse ? Retour sur l'histoire de l'évaluation des OGM », *Hermès, La Revue*, vol. 73, no. 3, pp. 122-128.
- [18] Engeli, I. (2009). « La problématisation de la procréation médicalement assistée en France et en Suisse. Les aléas de la mobilisation féministe », *Revue française de science politique*, vol. 59, no. 2, pp. 203-219.
- [19] Gallo, D. (2012). « Esquisse en vue d'une histoire du conditionnement politique. Le cas de la SS », *Hermès, La Revue*, vol. 62, no. 1, pp. 165-171.
- [20] Gallo, D. (2015). « La politique de formation idéologique de la SS (1933-1945). Une étude sur la transmission de la normativité nazie », *Revue historique*, vol. 676, no. 4, pp. 875-898.
- [21] Granarolo, P. (2017). « Le Surhomme : mythe nazi ou image libertaire ? », *L'Enseignement philosophique*, vol. 67a, no. 1, pp. 27-43.
- [22] Granjou, C. & Egizio, V. (2004). « Certifier en situation d'incertitude : le cas des OGM », *Natures Sciences Sociétés*, vol. 12, no. 4, pp. 404-412.
- [23] Guedon, A. (2005). « Biotechnologie : peut-on concevoir sans breveter ? », *Les Tribunes de la santé*, vol. n° 8, no. 3, pp. 69-78.
- [24] Hannoun, H. (1997). "Visages de la hiérarchisation nazie". *Le nazisme, fausse éducation, véritable dressage*. By Hannoun. Villeneuve de Ascq : Presses universitaires du Septentrion. (pp. 109-129) Web. <<http://books.openedition.org/septentrion/47702>>.
- [25] Hunyadi, M. (2010). « La biotechnologie ou l'imagination au pouvoir », *Études*, vol. 413, no. 9, pp. 187-197.
- [26] Kassardjian, E., Stéphane, R., & Bernard, R. (2011). « L'hostilité aux OGM survit-elle à des produits attractifs ? », *Revue française d'économie*, vol. xxvi, no. 3, pp. 121-150.
- [27] Lazaratou, H. & Bernard, G. (2006). « Du désir à l'acte : les enfants de la procréation médicalement assistée (PMA) », *La psychiatrie de l'enfant*, vol. 49, no. 2, pp. 573-599.
- [28] Le Fourn, J-Y. (2003). « Au secours, Platon est de retour ! », *Enfances & Psy*, vol. n°22, no. 2, pp. 81-85.
- [29] Leibovici, M. (2005). « Biopolitique et compréhension du totalitarisme. Foucault, Agamben, Arendt », *Tumultes*, vol. 25, no. 2, pp. 23-45.
- [30] López, Yáñez, A. (2005). « La dérive sociale du programme rousseauiste ». *Cahiers internationaux de sociologie*, 2(2), 267-288.
- [31] Luboya, E., Tshilonda, JC., Ekila MB., Aloni, MN. (2014). Répercussions psychosociales de la drépanocytose sur les parents d'enfants vivant à Kinshasa, République Démocratique du Congo: une étude qualitative [Psychosocial impact of sickle cell disease in the parents of children living in Kinshasa, Democratic Republic of Congo: a qualitative study]. *Pan Afr Med J.*; 19:5. French. doi: 10.11604/pamj.2014.19.5.2830. PMID: 25574334; PMCID: PMC4282867.
- [32] Luciana, R. (2008). « La cité idéale de Platon : de l'imaginaire à l'irréalisable », *Kentron* [En ligne], 24 | 2008, mis en ligne le 13 mars 2018, consulté le 21 décembre 2020. URL : <http://journals.openedition.org/kentron/1594> ; DOI : <https://doi.org/10.4000/kentron.1594>
- [33] Lundin, S. (2008). « Corps vieilliss et technologies nouvelles », *Ethnologie française*, vol. 38, no. 2, 2008, pp. 277-281.
- [34] Mucchielli, L. (2000). « Criminologie, hygiénisme et eugénisme en France (1870-1914) : débats médicaux sur l'élimination des criminels réputés « incorrigibles » », *Revue d'Histoire des Sciences Humaines*, vol. n° 3, no. 2, pp. 57-88.

- [35] Patou-Mathis, M. (2013). « De la hiérarchisation des êtres humains au « paradigme racial », *Hermès, La Revue*, vol. 66, no. 2, pp. 30-37.
- [36] Perbal, L. (2011). « Génétique humaine et eugénisme anglo-saxon au début du 20^{ème} siècle ou comment la génétique réclame son indépendance », *Bulletin d'histoire et d'épistémologie des sciences de la vie*, vol. 18, no. 1, pp. 41-59.
- [37] Pommier, É. (2013). « Le sens de la vie chez Hans Jonas », *Études*, vol. 418, no. 4, pp. 485-495.
- [38] Rao, H. (2009). « Les rebelles et l'innovation radicale », *L'Expansion Management Review*, vol. 133, no. 2, pp. 76-83.
- [39] Reggiani, A. H. (2010). « Dépopulation, fascisme et eugénisme « latin » dans l'Argentine des années 1930 », *Le Mouvement Social*, vol. 230, no. 1, pp. 7-26.
- [40] Rozan, A., Jayson, L. L., & Myriam, C. (2007). « Acceptabilité des consommateurs face à un OGM de seconde génération : le riz doré », *Revue d'économie politique*, vol. 117, no. 5, pp. 843-852.
- [41] Rutherford, D. (2007). « Les trois approches de Malthus pour résoudre le problème démographique », *Population*, vol. 62, no. 2, pp. 253-280.
- [42] Sägerser, C. (2001). « Le dossier des OGM dans les instances internationales. », *Courrier hebdomadaire du CRISP*, vol. 1724, no. 19, pp. 5-34.
- [43] Schiffino, N., & Frédéric, V. (2005). « La régulation politique des OGM », *Courrier hebdomadaire du CRISP*, vol. 1900, no. 35, pp. 5-34.
- [44] Schiffino, N. (2017). « La régulation publique de la biomédecine. Procréation médicalement assistée, recherche sur embryons, gestation pour autrui », *Courrier hebdomadaire du CRISP*, vol. 2348-2349, no. 23-24, pp. 5-64.
- [45] Squires, C., et al. (2008). « Psychopathologie et procréation médicalement assistée : Comment les couples infertiles élaborent-ils la demande d'enfant ? », *Devenir*, vol. 20, no. 2, pp. 135-149.
- [46] Taguieff, P-A. (2007). « Au cœur du raisonnement galtonien : le paradoxe de la politique malthusienne et sa solution eugéniste. « L'intelligence peut être aidée ou exercée, mais aucun apprentissage, aucun enseignement ne peut la créer. Elle doit être transmise héréditairement. » Karl Pearson », *Raisons politiques*, vol. 26, no. 2, pp. 175-215.
- [47] Terestchenko, M. (2010). « Accepter le donné, maîtriser le vivant ? Brèves réflexions sur l'esprit de la biotechnologie », *La pensée de midi*, vol. 30, no. 1, pp. 90-98.
- [48] Timothée, F., Thomas, J., & Livio, R-S. (2009). « La théorie de la sélection naturelle présentée par Darwin et Wallace », *Bibnum* [En ligne], Sciences de la vie, mis en ligne le 01 décembre 2009, consulté le 21 septembre 2021. URL : <http://journals.openedition.org/bibnum/622>
- [49] Tiwary, N. & Chandra, N.D.R. (2009). "New Historicism and Arundhati Roy's Works", *Journal of Literature, Culture and Media Studies*, No1, pp.79-96
- [50] Vaissière, T. (1999). « L'éthique de responsabilité chez Hans Jonas à l'épreuve du droit international de l'environnement », *Revue interdisciplinaire d'études juridiques*, vol. 43, no. 2, pp. 135-199.
- [51] Yakushko O. (2019). Eugenics and its evolution in the history of western psychology: A critical archival review. *Psychother Politics Int.*;17:e1495. <https://doi.org/10.1002/ppi.1495>