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ETHICS AND ITS TECHNOLOGICAL IMPLICATIONS FOR DIGITAL CITIZENSHIP IN THE SCOPE OF AUTISM SPECTRUM DISORDER (ASD): CONTEMPORARY PERSPECTIVES

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ABSTRACT

This paper outlines the ethics based on the perspective of digital citizenship, encompassing the efforts of contemporaneous society to empower and legitimize, through ethical behaviors and appropriate actions, the efficient use of technology, as well as the development of citizenship and the digital inclusion of students with ASD, by facing the contemporary technological challenges. The research presented an investigative study focused on a qualitative and exploratory approach, based on document and discourse analysis, aimed to establish a correlation between concepts that support social behavior (ethics) and present-day relationships, especially the virtual ones, materialized by the expansion of digital information and communication technologies. These connections have resulted in the emerging of new requirements for behavioral conduct, the so called digital citizenship. And, from this standpoint, ethics in digital citizenship is a way to overcome paradigms, obstacles, and challenges, with the purpose of integrating all students - in particular the ASD student, the main focus of this paper - in the current technological educational scenario, improving education to the highest digital standards and, consequently, contributing to the development and transformation of the student as a citizen in the digital era.

INTRODUCTION

Technology has been substantially reshaping the human perception of the most important domains of knowledge, resulting in the changing of basic ethical principles in education, economics, politics, and in the manner individuals communicate, acquire, and spread information. The term ethics derives from the Greek ethos, which means by analogy the individual's way of being or his character, as a manner of life also conquered or acquired by man (VÁSQUEZ, 2003). By establishing what is acceptable and setting guidelines that provide an individual's understanding of right and wrong, ethics is the science of morality that examines the practices of what people must do. According to Vásquez (VÁSQUEZ, 2003), ethics involves the study of a very specific form of conduct: the moral behavior of individuals in society. In this regard, the study of ethics is focused on society and human behavior, signifying, then, the character, the temper or nature of the human being, the manner in which life circumstances are faced, and the way relationships with others are established; ethics is thus anchored in individual freedom of choice.

Ethics examines the behavior in society, considering people's collective interests and ensuring the common welfare. Under these circumstances, there is no scope in the field of ethics for self-interest, since it is essential to give priority to everyone, and it is impossible to talk about ethics and not be concerned, particularly if these attitudes are against the interests of society. With the rapid technological development in contemporary times, technology has increasingly become part of human daily life in a remarkable and unprecedented way, through the popular use of smartphones, the advancement of social networks, and the use of several different technologies in day-to-day life, as the internet has morphed into a digital world with a tremendous amount of people and information flowing through it, since the susceptibility to anonymity due to the right to privacy, the right to liberty, and other associated aspects brings about ethical challenges. In this context, ethics and technology are partners in the educational field, responding, thus, to the requirements of contemporary education, by contributing to social changes, from an instrumental dimension, in the process of creating meaning, without excluding solidarity and equality of diversities. Therefore, ethics and technology are considered necessary tools for this change in the educational field, and the current context is experiencing trends that

are constantly being used by citizens in the context of the digital world, and these new instruments must be used to benefit learning and to provide innovative pedagogical practices. In this scenario, digital citizenship arises, which indicates the materialization and the exercise of citizenship in digital societies, based on a certain number of rules that orient the conduct and the proper behavior for users of digital media, and particularly the Internet. According to Gentilli (2002), when discussing citizenship, it is indispensable to talk about the exercise of rights by individuals. On the other hand, these rights result in the fact that duties are also assumed to be fulfilled by the same individuals. In agreement with Frade(2002), the concept of citizenship has been mutable since the beginning of organized society. In recent decades, however, this mutability has rapidly accelerated, adjusting itself to the new demands of the contemporary world.

Digital citizenship and the establishment of a new digital world do not represent, in any way, the possibility of extinction of the civil liability. Digital citizenship, according to Robles (2011), relates to the individual exercise of social rights, such as the ability to express themselves, be recognized, communicate, access consumption, get informed, and have fun on the Internet. From this standpoint, this paper discusses ethics based on the aspect of digital citizenship, encompassing the effort of contemporary society to empower and legitimize, through ethical behavior and appropriate actions, the use of technology, as well as the effort to encourage the development of citizenship and the digital inclusion of students with Autism Spectrum Disorders (ASD), through the current technological challenges. The number of children diagnosed early with ASD is significantly increasing, and it is well-known that the more precocious the application of interventions, the greater will be the chances for these children to adapt to the contexts that surround them, as well as to develop their skills and functional competencies to the maximum of their own possibilities. In the new Handbook of Mental Disorders (2013), in the year of 2013, the terminology autism was substituted by Autistic Spectrum Disorder. The term "autistic spectrum" was used to indicate that there are children with different degrees of impairment. In the current era, much has been investigated and discussed about this disorder. Such considerations bring ethical and digital citizenship approaches associated with the inclusion of people with ASD in the digital world, in face of the recent and accelerated advances in information and communication technologies (ICTs), which are also gradually becoming more and more affordable.

The use of ICTs is nowadays part of our culture and is present in our daily lives, allowing the creation of new forms of expression. They encompass communication, interactivity, and connectivity. According to Sartre (1984), technology can support the human being' s mission, which is the transformation of themselves and the world; However, for this purpose, it must be linked to humanism, which, in turn, consists in making people responsible for their existence. In this perspective, the author depicts that by becoming responsible for himself, humans are made responsible for the entire humanity. The research presented an investigative study focused on a qualitative approach and, combined with this setting, an exploratory nature, based on document and discourse analysis, with the cataloging of information in several databases, used for a literature review, in which the sources were diversified. A bibliographic investigation was also carried out (GIL, 2002), in which the support of scholars on the theme was essentially used. Accordingly, this paper is organized into six segments: Introduction; Ethics and its origins; Digital citizenship: conceptual aspects; Ethics based in the context of digital citizenship; Ethics and digital citizenship in the ambit of Autistic Spectrum Disorder (ASD) and final considerations. These segments consider conjunctures associated with ethics and its challenges in the technological context of digital citizenship in the field of ASD.

ETHICS AND ITS ORIGINS

The origin of the word ethics emerges in Ancient Greece with the philosophers who changed human thought, around the 4th century BC, following the ascension of the Greek city-states. At this premise,

ethics is the area of philosophy dedicated to human actions and behavior, a moral philosophy. Therefore, the focus of ethics is the principles that orient human actions and the capacity to evaluate these actions. In the philosophical tradition between the most celebrated Greek philosophers, Aristotle, (1998) inquires about the articulation between subjective desire and the good. In this regard, moral virtue orientates man to "reasonable preference," which means the ability to prudently choose the right thing in the correct proportion (ARISTÓTELES, 1998). With the advent of civilizations came also the necessity to think about the values that mold society, and an automatic requirement to define ethical models to organize life in a group. In this scenario, the term "ethics" emerged, a very small word to designate the great responsibilities of the social environment. The definition of ethics involves philosophical problematization by questioning our moral and social manner of living, without ever appealing to common sense. It is the moderate establishment of what is considered right or wrong for people. Consequently, to explain the limit between good and evil, ethics embraces the morality; it aims at the peaceful coexistence of human relationships. Strengthening the idea of the concept of ethics, Souza Neto and de Liberal (2002) assert that ethics is not given, but constructed at the center of human and social relations. As these relations modify, so do the meaning and content of ethics. Ethics is constructed by a society based on historical and cultural values, and from the standpoint of philosophy, it is a science that studies the moral values and principles of a society and its groups.

Through ethics, it is possible to reflect on the essence that surrounds the values and principles that are the basis of morality, since man has a mechanism to comprehend the meaning of human life and the foundations of the idea of good and evil. It is significant to emphasize that when investigating the ethical principles, we can encounter the duties of the human being, which change the social context. By being equivalent to a collection of moral values and principles that guide human conduct in society, ethics provides balance and good social functioning, preventing damages to any individualIn the meantime, the ethics, although it cannot be confused with the laws, is related to the sense of social justice. The ethics is understood as a metamoral, a reflection on fundamental values, transcending contingent social norms. This explains why the expression "fundamental ethics" is sometimes applied, with a philosophical dimension, which distinguishes it from "applied ethics", for example, in the professional ambit. In consonance with the above statement, for Paul Ricoeur (2004), the fundamental ethics that lies below the norms "the principles of the allowed and the forbidden" is the "prior" ethics; on the other hand, the applied ethics lies beyond the norms, embracing the so-named "posterior" ethics. Therefore, according to Cortella (2010), ethics refers to the values and principles that determine man's conduct in life as a group. It is ethics that sets the limit between what nature dictate and what is determined individually; it is what orients the capacity to judge, decide, and evaluate.

DIGITAL CITIZENSHIP: CONCEPTUAL ASPECT

Since ancient Greece, the citizenship has been defined as a relationship between peers, and between peers and power. In ancient Greece, peers did not encompass workers, slaves, women, children, and foreigners. However, the citizenship nowadays combines the rights of freedom and equality with the duties of solidarity (ABBAGNANO, 2012), reaching much deeper than the power relation and the democratic participation of electing government representatives. In this new version of the idea of citizenship, societies have advanced to the point of interconnection through the World Wide Web, and the governments of several countries have started to act electronically in citizen services. In this perspective, a new aspect of citizenship is emerging, the digital citizenship. At all times, since the emergence of the notion of citizenship, the education has always been a requirement for its exercise. It is particularly worth emphasizing that digital citizenship is precisely related to the way Internet and digital tools are used by its users, so the concept is concerned with appropriate and responsible behavior in the way technologies are used.

Table 1. Nine Guiding Elements of Digital Citizenship

Digital etiquette	The first element is related to the standards (or procedures) of appropriate behavior in the electronic environment, and the inexistence of this behavior is one of the most prominent problems of digital citizenship. The inappropriate behaviors in such environment are noticed when observed, but people, when joining the digital world, do not know what digital etiquette consists of. This is a notion that involves the proper and responsible use of digital media and the act of teaching everyone in such environment to be responsible digital citizens in the digital society.
Digital communication	The digital revolution has propitiated a context in which people are capable of communicating much more dynamically and speedily with other people, something that did not used to occur in earlier times, with communication by letter or even by regular phone. The new digital communication options have substantially changed the way people communicate nowadays. As everyone has opportunities to communicate and collaborate with anyone, anytime, anywhere, it is crucial to consider the appropriate decisions for each moment and option that comes with digital communication.
Digital Literacy	Essentially, it is the process of teaching and learning about technology and its use. New technologies have not been being properly taught in school (such as videoconferences or digital communities like wikis), but they have an important place in the world of work (RIBBLE, 2010).
Digital access	It is associated with full electronic participation in our society. Those who use technology should be aware of and support electronic access for all the individuals, promoting the spread of digital citizenship, because digital exclusion is a notion that is not embraced by digital citizenship within the electronic society. All individuals should have full and equal access to technology, in order to places with limited connectivity also have to be contemplated by this element, aiming to equalize the opportunities for digital access to a new standard.
Digital Commerce	Acquisition and selling goods electronically. The users of technology have to realize that a large part of the market economy is being conducted electronically. Legitimate and legal exchanges are occurring, but the buyer and seller must be aware of the associated problems. The general availability of purchasing toys, clothing, cars or food through the Internet has become widespread for many users. Concomitantly, an equivalent number of illegal/immoral goods and services, such as pornography and gambling, are surfacing. Users must learn to be successful consumers in a new digital economy.
Digital law	It is concerned with the ethics of technology in society, in other words, electronic responsibility for the works and actions by the user. Unethical use of technologies expresses itself in the form of thievery or by committing crimes, while ethical use manifests itself by respecting the laws of society. Users of technologies must be aware that stealing or causing harm to one's work, identity, or property online is a crime. The rules of society must be set within an ethical background, so that the laws apply to anyone who is on the Internet. Making illegitimate use of third-party information, misappropriating third-party information, illegally downloading music, plagiarizing, creating viruses, and spamming are examples of practices that go contrary to digital law.
RightsandResponsibility	They start from the premises that, just as in constitutions, there is a statement of basic rights that are extended to all digital citizens, who are guaranteed the right to privacy and freedom of speech, for example. Basic digital rights must be approached, discussed and understood in the digital world, through the responsibilities of conferring such rights. Users should contribute to define how technology can be used in an appropriate way.
Digital health and well-being	It focuses on the physical and psychological well-being of individuals within the context of the technological society. The safety of vision, repetitive strain injuries, and good ergonomic practices must be congruently addressed in a new technological world. In parallel to physical problems, other psychological problems (such as addiction to, or dependence on, the use of the Internet) must be approached. Basically, this element is conditional on teaching that there are dangers intrinsic to technology, and digital citizenship must include a culture in which users must be taught to protect themselves through education and training.
Digital Security	The remaining element deals with precautions to provide security in an electronic world. In any society, there are individuals who perpetrate offenses and disturb people, and this same prerogative is applicable to the digital community. If we use locks and fire alarms in our homes to achieve a certain level of protection, the same should be done for digital security, and it is not sufficient to rely on other users to ensure it. As responsible digital citizens, we must protect our information from third parties who may want to cause damage or disruption.

About the concept of digital citizenship and what its creation implies, it is fundamentally important to know its nine elements (Table 1), which were obtained from Ribble(2010) and are the essential basis for a reasonable understanding of the subject make it possible to explore in depth issues surrounding the rights and duties of users in the digital domain while keeping privacy and responsibility, with the duty to fulfill the rules that are in effect in the digital society addressed within the context of freedom of expression. In this context, digital citizenship is no more than the solidification of the citizenship we hold in the real world within the context of new technologies and the materialization and consolidation of a new technological world.

THE ETHICS BASED ON THE CONTEXT OF DIGITAL CITIZENSHIP

In the considerations about ethics and citizenship, Hack's (2002) and Gouvêa's(2002) observations are relevant. The first one reminds us that ethics encourages the reflection of ideas and proposes values; citizenship conducts to responsible social practice and solidary commitment. For the second, the term ethics, since Greece, has always been used by those who were interested in investigating issues related to human behavior and life in society. The technology, the most influential tool for communication, research, and entertainment used by humanity, has been the place where people's individual and collective behavior largely differs from their social conduct outside of it. This reality does not necessarily mean that the Internet is a "no-man's land", dispensing people from proper conduct in digital environments. In this context, as mentioned in section III, the concept of digital citizenship emerges, according to the use of technological innovations in an appropriate manner, establishing a series of requirements that are coherent with users' behavior and the general use of the Internet and other digital platforms. In Araújo's perspective (1999), the construction of citizenship, or of citizenship practices, inevitably involves the issue of access to and use of information, because the exercise of both rights and duties depends on the spread and circulation of information, as well as on a process of critical discussion about the needs connected to the construction of a society in which there are more opportunities for all citizens (ARAÚJO, 1999).

The importance of the reflections on ethics and citizenship is in the contemporary world, in the sense of attempting to comprehend, in times of serious challenges and inequalities amplified by the digital exclusion, that it is vital to study life in society, having ethics as one of the requirements of the citizen. It is also a matter of political willingness, which everyone must be equipped with, in order to provide digital inclusion and, consequently, allow the achievement of citizenship by individuals who are still excluded from it. In this context, Gouvêa(2002) states that this search for solidarity values increases the significance of reflections about the ongoing transformations, particularly about the advances in information and communication technologies (ICTs), which facilitate a faster flow of information, with consequences that are still unpredictable. In this challenging contemporary aspect of ethics in digital citizenship, Castells (2003), emphasizes the term cracker, developed by hackers themselves in the 1980s, since they were treated as cybercriminals. Thus, a differentiation was made between the terms hacker and cracker. Based on this idea, hackers and crackers are positioned in two distinct conditions: the first ones do not intend to cause damage and harm to third parties, while crackers turn their activities to such purposes. Thus, crackers are the most dangerous figures in the cybernetic world who use the internet to carry out frauds and scams all over the world, including in Brazil.

The popularization of the internet instantly brought to the virtual space users and companies that previously did not make use of this resource. As a consequence, crackers, knowing such systems in a comprehensive manner, make use of their knowledge to carry out criminal activities, committing cybercrimes, which go against digital citizenship. Thus, it is indispensable to address the conflicts and challenges that emerge from such criminal actions. The world interconnected by the Internet also opens space for intense reflections

regarding human relationships that are built in cyberspace, representing a rupture of the space-time limitations that would be used to approximate people. However, the challenges of this type of virtuality weaken bonds, since, apart from genuine contact, indifference, disassociation, and abandonment increase, as Bauman (2007) describes. Besides these concerns, there are others that emerge in cyberspace, such as: digital addiction, invasion of privacy, virtual relationships and digital exclusion. The possibility of compensation for violations of citizenship has initiated a new right re-dimensioned by fundamental rights, meaning human rights that go further than the purely contractual point of view of human relations, since respect for the human person is an effect resulting from the values that the human person holds simply by existing. In this respect, there is an extremely important connection between human rights and civil liability, through the recognition of citizenship for the attribution of culpability or wrongful act to the responsible party, acting as an instrument for the effectiveness of fundamental rights and an ethical commitment that reshapes the traditional legal institutes that follow it. To contextualize the ethical challenges associated with citizenship and civil liability, moral damage is highlighted. Pablo Stolze Gagliano and Rodolfo Pamplona Filho (2006) characterize damage or loss as the action or inaction that causes injury to a protected legal interest, whether property or not, so that the damage can be extended to the most personal rights, as is the case of moral damage.

The moral damage, being an ethical challenge, impacts the most inner aspects of the human personality, once it is caused by a subjective violating fact, not to be mistaken for the ordinary unpleasantness of daily life, but of the very valuation of the human individual in the environment under which he/she is involved, which occurs in the universe of digital citizenship. Trentin and Trentin(2012) tried to associate civil liability from the perspectives of digital citizenship and moral damage. The authors advocate the civil liability of users for damages inflicted by messages published, said or shared, applying the same in cases of creation of false profiles and spreading of images or offensive content on social networks, aiming, in all cases, in addition to the removal of information, compensation for moral damages. In such scenarios, the offending user will be made responsible for the illicit information linked in the virtual environment, and the site provider will be charged only if it neglects to delete or block the offending images or information after a certain period of time has expired since the victim's notification. Thus, there is an ongoing tendency for ethics to accompany digital societies. Therefore, the previously mentioned conception that the Internet is a "no man's land" is not only obsolete, but also erroneous. The ethics always acts in order to legitimize the citizenship of individuals, and this prerogative is also applicable to the exercise of digital citizenship, guaranteeing the civil responsibility for the human being also in the digital way. Law contributes to the complete exercise of digital citizenship and to its advancement in the contemporary digital world.

ETHICS AND DIGITAL CITIZENSHIP WITH A TECHNOLOGICAL FOCUS ON AUTISM SPECTRUM DISORDER (ASD)

The Diagnostic and Statistical handbook of Mental Disorders (2013) highlights that ASD is a neurodevelopmental disorder defined by deficits which impact three areas of development: communication, socialization, and behavior, and which can be present from childhood or the beginning of infancy. Based on this concept, ASD is additionally defined as a neurodevelopmental disorder that emerges symptomatically in the first three years of life, affecting the motor, cognitive, and especially social areas. It is a condition characterized by significantly unusual and impaired development in social interactions, notably in modalities of communication and behavior. In a society that standardizes behaviors, it should be considered that, in many cases, the school builds stereotypes about the development of children, in particular those who do not follow the methodology proposed by the educational system, or do not fit the school everyday life (SILVA *et al.*,2015), such as students with ASD. However, since the inclusion of these children in the ways of living in society, the isolation from the social life of children with ASD has been declining

(PRAÇA, 2011), and a powerful environment for this socialization is the school. In the historical battle of the advent of inclusion, we can highlight the inclusion of the person with ASD, widely discussed in the educational context. The Law No. 12,764/12, of December 27, 2012 (BRASIL, 2012), establishes the National Policy for the Protection of the Rights of the Person with ASD, guaranteeing the right to education for these students. In the Brazilian legal scenario, the regulatory milestone of the Inclusion Law (BRASIL, 2015), in its article 28, paragraph 1, provides for lifelong learning and the consolidation of an inclusive educational system at all levels and modalities, establishing the inclusion of students with any kind of disability, including those with ASD, in regular classes, discontinuing the practice of segregating these individuals in specialized classes.

The education for information is, therefore, at the center of a new and desirable "included" society that is supported and guaranteed, also encompasses new and challenging approaches related to access to information by means of ICTs. It is essentially a case of understanding that digital educational technologies are in line with new pedagogical practices, which provide resources so that students can increasingly participate in the process of building their own learning. Thus, it is impossible to deny the relevance that these technologies have achieved in contemporary society, focusing on the population with ASD, since the benefits of accessible digital tools for the 21st century way of life cannot be underestimated. The educational technologies promote new ways of learning, since they facilitate collaboration, interaction, and connection in social, family, and school contexts (ALMEIDA; VALENTE, 2015). From this standpoint, the use of technology aims to improve the development of cognitive, creative, linguistic, communicational, and social-affective skills. Therefore, the new digital information and communication technologies (DTICs) are not just mere technological supports, but have their own logic, language, and distinctive way of interacting with people's perceptual, emotional, and cognitive capacities (KENSKI, 2007). Based on this conception, the process of digital inclusion is an intrinsic requirement of this century; this means that the "citizen" of the 21st century must, among other things, consider this new factor of citizenship and comprehend that it is an ethical issue to afford this opportunity to everyone. The inclusion is a process that should guide the citizen to learn how to use the DTICs and to access the information available on the networks, mainly the information that will contribute to his/her life and to the community in which /she is included.

From this perspective, ethics in digital citizenship comes in the direction to the rupture of paradigms and challenges, aiming at the inclusion of all students - particularly the student with ASD - in the contemporary technological educational context, elevating education to new digital levels and constituting, therefore, a process of transformation and full development of this student as a citizen in the digital era. Faced with this perspective, it is appropriate to understand the relevance that digital technologies have achieved in our contemporary society, emphasizing the contributions and benefits of accessible digital tools to potentialize the way of life of students with ASD. In this regard, the ethics in the context of digital citizenship comes as a facilitator of this process in order to guarantee transparency and fulfillment of the rights and legal responsibility of the use of digital technologies through the obstacles experienced by these students. Based on this, the investigation addressed the need for educational technologies in the teaching-learning process, reflecting on the contributions and transformations of pedagogical practices, focusing on the complexities and challenges of the advancements of technology in the everyday life of the student with ASD, in order to contribute to interactivity and connectivity in the face of ICTs in the educational context, taking into account the educational and inclusive potential that the use of educational apps has in the development of these students at school. It is essential to know the main characteristics, developments, and challenges related to ethics in digital citizenship, so that it is possible to reflect on them and then take advantage of the benefits brought by the use of technologies by students with ASD. In the context of ethics, digital citizenship represents the exercise of citizenship practices, since it is a group of

actions associated with the use of technology in order to understand it - a necessity in the world we currently live in. The use of these digital resources is constantly indispensable, especially in the development of the educational, family, and social interaction and communication process of students with ASD.

CONCLUSION

It is no more conceivable to think of the digital world as a world foreign to what we know, since, in fact, it has become part of people's daily lives, which highlights the importance of ethics in the concepts of digital citizenship, which deals with rules and procedures so that the full exercise of citizenship also occurs in the digital way. With the advances in information technology and its increasing presence in people's lives, emphasized in this more specific context by those with ASD, challenges arise that were unthinkable before, since information technology has completely transformed, directly or indirectly, the way people live and socialize. Such advances have brought many benefits and comfortabilities, but also many problems, such as the ethical dilemmas that emerged during its use. Ethics focused on the aspect of digital citizenship highlighted contemporary society's efforts to empower and legitimize, through ethical behavior and responsible actions, the use of technology, as well as the seeking of citizenship development and digital inclusion for students with ASD, through the existing technological challenges. Therefore, the concepts presented in this paper are the fundamentals of social behavior (the ethics) to the modern relationships, specifically to the virtual relationships, made viable by the development of information and communication digital technologies, thus emerging new concepts for behavioral conducts, the so-called digital citizenship. This paper aimed to correlate ethics and its challenges in the technological environment of digital citizenship in the sphere of ASD based on contemporary perspectives, allowing a concise analysis of the elements that legitimize human beings as citizens and their inclusion in the digital world, in order to encourage their independence and autonomy. As pointed out, several ethical issues permeate digital citizenship, constituting a well established issue in contemporary times, thus portraying digital citizenship as a relatively recent topic, which has been approached in a consistent manner by researchers from different areas of knowledge. Considering the facts mentioned above, the investigation plays a significant role in the ethical awareness based on digital citizenship in the context of ASD, producing valuable knowledge and information that promote the possibility that more readers will be more motivated in their seeking of knowledge about the research topic, as well as the perception of its pertinence to contemporary society.

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59253

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