https://doi.org/10.12797/RM.02.2021.10.06

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THE FORGERY OF DEEPFAKE AND THE "ADVENT" OF ARTIFICIAL INTELLIGENCE

Abstract

The concept of politics changes its semantic value according to the historical period and the cultural changes affecting the social fabric. In classical literature, there was no distinction between politics and society or politics and ethics, since the first indicated the collective space in which cultural, social, economic relations of human life developed that were differentiated from other living forms. To date, with the advent of digitalization and artificial intelligence, we have a concrete assessment of how politics has acquired a new perspective and is changing to adapt to new technologies and its uses: on the one hand, we are experiencing the propagation of debate, confrontation, and information accessible at any time. On the other hand, it has become an instrument for the annihilation of rivals and subjugation of those who consider any data received from the Internet as truthful, exploiting the media and digital technologies, until it pervades the social structure, making even nonsense seem credible. The purpose of this contribution, therefore, is to outline theoretically the contours and contemporary phenomena that relate, through a dialogical relationship, with the use of deepfake techniques and artificial intelligence technology, the concepts of politics – in its dimension of the relationship of collective power – and of social communication.

Keywords: communication, artificial intelligence, deepfake, politics, society

NOTES ON MORALITY AND ITS RELATIONSHIP WITH POLITICS

Morality is an objective practice that implies the involvement of values and models of behavior on the basis of which a subject chooses to interconnect with society, deciding according to their own sense of cultural belonging

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the ethical principles that will define them. These elements originate from the representation of social reality and political representation, through which the individual experiences their own participatory action and identity formation within the collective organization to which he or she belongs, stating that "it is not, therefore, only to have a part, in the sense of constituting, holding or controlling, and influencing political power, but also and above all of being part, being active subjects of political power, since sovereignty always rests, in principle, with the people"[2] (Cedroni 1987: 33) Conducting a sociological discourse involving the concepts of ethics and morals, in the contemporary world, is complex due to the intrinsic mutability within the body of society and its material reproductions (Tognonato 2018).

Kant, in *Appendix I* of his work *Perpetual Peace: A Philosophical Sketch*, affirms that morality itself is a tool that the social individual uses in its political applications and that the figure of the moral politician must be strengthened. He or she is the one who is able to place morality at the center of their choices first of all, which must never be subordinated to political needs, combining the latter with collective values, arguing that "Although the saying, 'Honesty is the best policy' expresses a theory which, alas, is often contradicted in practice, yet the likewise theoretical maxim, 'Honesty is better than any policy,' is exalted high above every possible objection, is indeed the necessary condition of all politics."[3] (Kant 2004: 82–83).

Ever since the Sophoclean tragedy of *Antigone*, political power, through the corruption of customs and traditions, has tried to stain the ethical principles of being guided by the concepts of freedom, truth and equality, even when placing a simple handful of earth on a lifeless body – a gesture of non-violent protest – may represent an affront to a personalized policy. Just as Machiavelli asserted that Cosimo de' Medici could not govern Florence according to the dictates of collective morality, Jean Paul Sarte declares in *Dirty Hands* that those who carry out political activities cannot help but get their hands dirty with mud or blood.

Therefore, those who play a political role will often be "forced" to corrupt their moral consistency even when it comes to manifesting the truth of the facts according to the definition proposed by Benjamin Constant, who asserted that affirming the principle of truth is one of a person's moral

[2] Translation by the author.

[3] Translation from: I. Kant. *Perpetual Peace*, retrieved from: A Project Gutenberg eBook.

duties "but only towards those who have the right to the truth. Now no one has the right to a truth that harms others"[4] (Constant 2008:29).

Norberto Bobbio, through his criticism and reflection on the issues of personal rights, produces a central analysis on the relationship between ethics and politics, in which elements emerge that can give rise to modes of justification to bridge the gap that exists between common morality and political conduct, between ethical norms and the development of the institutional powers that govern society (Bobbio 1997). Bobbio outlined a parable of political choices, firstly, according to the theme of justification, at the moment when the need arises to give greater clarity to acts that are located on the border of common ethics; secondly, derogation, when a policy violates rules and customs for the implementation of a hypothetical superior good; thirdly, special ethics, in which there is a momentary or selective reformulation of the rules in order to face a political commitment; and, finally, the superiority of politics, in which the subject holding power can, thanks to his or her status, decide which ethics is best at a given time or context. Democratic states by their very nature live in a cyclical march of transformation, requiring continuous remodeling (Bovero 2014). Moreover, it is not desirable to place the ethical question itself at the center of the debate but the discussion of its evolution with respect to changes in a society where change is synonymous with culture, and that it is necessary, in other words, to discuss the morality of respective behavior.

For example, the debate on ethics linked to new technologies and the concepts of data sharing, freedom of information and the use and understanding of these tools is fundamental in order to conceive the flows of the evolution of the identity of the subject, their ability to analysis and, more importantly, its critical and processing information tools that grow at exponential speeds and in volumes that are not possible to be conceived by human perception. The discussion thus finds its focus of interest in the areas of lawfulness or illegality concerning the way in which the data of each individual user are recorded, stored, absorbed and processed by the artificial intelligence systems of the companies that are used daily either directly or indirectly, and while being conscious or unconscious of digital devices. A problem therefore exists that sees the exercise of the freedom of the social individual to live in their own environment – one which is now unique

[4] Translation by the author.

and without borders between analogue and digital – and to act socially in full possession of their rights which collides, unavoidably, with a lack of awareness and the uncertainty of how one's digital information is retained and processed by third parties, and how there are no principles or rules to observe or apply in this regard. Often, however, these questions do not find space in the daily life of the user themselves who assigns, grants, distributes portions of their own self throughout the Internet: be it information, data, views, images, up to the transfer of every part of their body and own thoughts, which are almost reproducible by artificial technologies.

ON DEEPFAKE, ROBOT MAYORS AND A.I.

The foundations of contemporary society rest on the use of images (Meyrowitz 1993, Thompson 1998, Luhmann 2000), their immediate diffusion and sharing that reflect back at each other from every point of the planet, having canceled the boundaries of space and time thanks to the use of the Internet. This same society that discovers information at a given moment, engages in collective sharing and conducting debates between cultures in a direct manner, is the very same one that, however, does not understand the value of written communication, the reflective exchange of ideas, the thoughtfulness in the use of words and the capacity that the intellect could offer to an increasingly accurate, broad and multi-faceted examination. Indeed, too often the images used according to today's social and communicational parameters do not help, since they are elements of the negative simplification of a message that undergoes an emphasis devoid of content, as happens in politics – understood as the good order of society – which places substance in the background, preferring just form and its manipulation (Mattioli 2013).

Here, one should consider the first great example of the rapid spread of misinformation (Wardle, Derakhshan 2017) – meaning the disclosure of information, facts, news that is untrue but without malicious intent – namely the radio broadcast of the adaptation of the science fiction novel *The War of the Worlds* by H.G. Wells, which took place in 1938. In this case, a section of the American population already provided proof of their blind belief that aliens were invading the United States, just because the radio – the medium that dominated in those years – had literally transmitted its message to every individual who heard it. Although the intent

was to create entertainment, the result was that the broadcast took the form of a bulletin giving information on the event: thus, listeners believed it was real news. From this example, which is not "fake news" – a term and concept that has gone viral since 2016[5] – it emerges how in reality, the social individual is easily manipulated through the media, and how in the contemporary world it is even easier to seduce the population through spreading totally false news (Silverman, Singer-Vine 2016), such as the Pope's endorsement of Donald Trump, which was published during the US presidential election campaign, or the famous "Pizzagate" conspiracy theory (Derkhshan 2017).

In order to define the concept of fake news (Caplan et al. 2018, Lazer et al. 2018, Barthel et al. 2016, Qayyum et al. 2019), it could be argued that this comprises "news articles that are intentionally and verifiably false, and could mislead readers" (Alcott, Gentzkow 2017). They are manufactured news, without foundation, which cannot be subjected to a possible immediate factual confirmation, but which are published according to the style of journalistic articles, following specific editing, tracing news of the moment, inculcating in the reader a sense of doubt that also manifests itself in their ability to discern true from false.

With the advent of the Internet, information strategies have met, mixed and merged. Being a cultural technology, it embodies both the communication structures aimed at the masses, those used for interpersonal relationships and, even more, has managed to become more and more rooted in the subject's everyday life. A greater acceleration of an intimate, emotional, individual nature also became possible thanks to the advent of artificial intelligence (Grassi 2020), which has been able to combine the macro needs of postmodern society and capitalism based both on control and on data collection (Zuboff 2018, Fry 2019), with the micro-drives of the subject, grafting onto the latter an immanent extention of their body, but even more so for their needs, dreams and desires (Lemov 2015, Finn 2018, Grassi 2018). The advent of artificial intelligences is impacting the management of common freedoms with significant changes to such freedoms in private and public life, those of the individual and of the community, seeking more and more in the artificialization of the self and in one's

[5] Sarlin B. (2018, January 14). *'Fake news' went viral in 2016. This expert studied who clicked*. Retrieved from: https://www.nbcnews.com/politics/politics-news/fake-news-went-viral-2016-expert-studied-who-clicked-n836581.

relationship with machines, places, subjects, and reflexes for interacting with the other self. These changes can become new bridges towards aspects of the human being as yet not investigated, towards a new ontological protrusion where *technē* is no longer a function of *physis*, but produces it, becoming what we could define as *techne-naturans*: a technological praxis that is born of nature and which is expressed in its fusion. The hidden complexity of technology and, therefore, of reality indicates the need to rethink the relationship between the tangibility of the natural and its digitized and mechanized representations. After all, it must be recognized that the natural and the artificial are synonymous with the actions of the social individual.

The expression of complexity that is combined with the spontaneity and immediacy of technology and its applications can be experienced by analyzing the deepfake technique. This is a technique, based on artificial intelligence and deep learning – a process through which an artificial intelligence algorithm is able to improve its performance – which allows one to create hyper-realistic videos in which it is possible to manipulate faces, movements, and the words of the photographed subject. One may also produce an exchange of faces between two subjects, through the superimposition or processing of images and videos that will create a fake video, in which the subject performs actions or expresses opinions that have never been implemented or externalized, but appear authentic (Chawla 2019). Thanks to the advancement of machine learning and neural networks, artificial intelligence takes advantage of the network of interconnected nodes that perform a series of calculations/exercises to improve their performance and, after adequate training, are applied in order to achieve the initial goal for which it was programmed, namely: manipulate a given face and adapt it to appear on the body of another (at least in this case).

The first public dissemination of this technique dates back to December 2017, when a Reddit user by the nickname *deepfakes*[6] released a video of fake pornographic material in which the face of actress Gal Gadot was manipulated to appear on the body of a hardcore movie actress, demonstrating that great programming skills do not seem to be needed for its application. A video of this magnitude can have repercussions that can be placed between revenge-porn, the discrediting of a political opponent,

[6] This is the combination of the terms "deep," deriving from deep learning, and "fake," to indicate the mendacious nature of the material produced.

the implementation of personal threats or the production of propaganda based on falsehood with terrorist intentions. This results in undermining the trust of the user who comes across such artificial material and producing a deception that can negatively affect both the life of the manipulated subject and of those who, while viewing (Patrini et al. 2018), are taken in by the malicious uses of artificial intelligence (Brundage et al. 2018).

In November 2017, a group of researchers from the University of Washington[7] developed an algorithm capable of synchronizing an audio clip with the video movement present in a video, thus tricking the viewer into believing that the person is actually making such statements: "the actor" selected for the video was Barack Obama[8] who discusses terrorism, labor and health reforms and topics that are politically relevant to the US population. In this case, the artificial intelligence converts the audio data into the lip movements to be reproduced, inserting them within the face of the selected person. The working group chose the figure of the former president because the algorithm, trained through deeplearning, would have been able to collect video data existing on the Internet in huge quantities. They took 14 hours of Obama's speeches to train the algorithm and create their own model of "Fake Obama," before using neural artificial intelligence to model the shape of Obama's mouth and map their own model onto footage and videos. Prof. Kemelmacher-Shlizerman states that "realistic audio-to-video conversion has practical applications like improving video conferencing for meetings, as well as futuristic ones such as being able to hold a conversation with a historical figure in virtual reality by creating visuals just from audio."[9] Huge progress has been made thanks to the application of generative adversarial networks (GANS) in order to pit two artificial intelligence algorithms against each other, one creating the fake imagery and the other evaluating its efforts, thereby teaching the synthesis engine to create the best fakes. The team of scientists and programmers are inclined

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[7] For further information: Langston, J. (2017, November 11). Lip-syncing Obama: New tools turn audio clips into realistic video, *University of Washington.* Retrieved from: https://www.washington.edu/news/2017/07/11/lip-syncing-obama-new-tools-turn-audio-clips-into-realistic-video/.

[8] Buzzfeed. (2018, April 17). You Won't Believe What Obama Says In This Video!, *BuzzfeedVideo*. Retrieved from: https://www.youtube.com/watch?v=cQ54GDm1eL0.

[9] Langston, J. (2017, November 11). Lip-syncing Obama: New tools turn audio clips into realistic video, *University of Washington*. Retrieved from: https://www.washington.edu/news/2017/07/11/lip-syncing-obama-new-tools-turn-audio-clips-into-realistic-video/

to emphasize that this technique could also become useful in being able to declare whether a movie is real or not, by reversing the creation process.

Another case is that relating to the artist Bill Posters who, in 2019, produced a deepfake video in which Mark Zuckerberg declares that Facebook "owns" its users: the more you share, the more you participate in "the Big F's" social network, the more the fake Zuckerberg has rights over the people who use his social network. This video was created as a provocative response to the choice of the American social-media tycoon refusal to remove a doctored video of the Speaker of the United States House of Representatives, Nancy Pelosi.[10] In another artistic discrediting project, British Prime Minister Boris Johnson[11] is seen supporting opposition leader Jeremy Corbyn in his bid to hold the same post as himself. The intention behind this is to bring to the attention of public opinion the lack of regulations regarding data and the possibility of exploiting the information circulating on the net through creative processes that constitute environments for debate and confrontation on political issues that affect everything in life: the extent of technological power, the holding of data, the manipulation of data but, most of all, presenting the user with disinformation.

Since then, deepfake technology has become easy to use, and can be produced through the Impressions app – currently available for iOS – which simplifies each step as much as possible, making the production of video montages a realistic goal for any smartphone owner. In addition, thanks to an algorithm created by a group of engineers from Stanford University, it is claimed that editing a video will be like working and correcting a written text.[12]

In this context, the task of researchers in any scientific field should move according to the vision of Mills and the sociological imagination, that is, to train scientists, educators, individuals who are moved by the democratically shared principles of truth and objectivity, justice and values.

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[10] Pelosi videos manipulated to make her appear drunk are being shared on social media, (2019, May 24). *Washington Post*. Retrieved from: https://www.youtube.com/watch?time_continue=93&v=sDOo5nDJwgA&feature=emb_title&ab_channel=WashingtonPost.

[11] Altman, D., Posters, B., Future Advocacy. (2019, November 13). DeepFake Boris Johnson, *Darren Altman youtube channel*. Retrieved from: https://www.youtube.com/watch?v=gHbF-4anWbE&ab_channel=DarrenAltman.

[12] Myers, A. (2019, June 5). Stanford engineers make editing video as easy as editing text, *Stanford News*. Retrieved from: https://news.stanford.edu/2019/06/05/edit-video-editing-text/.

(Mills 2014). The task of the social researcher is to be able to discuss the practical actions of an event, connecting them to a theoretical structure with the aim of hypothesizing and verifying future scenarios, especially from the point of view that social problems are always problems deriving from social constructs. while technology is an active element in the relational progression of the development of the individual and their connections with the surrounding environment.

Through new technologies, human beings interface with new relational sequences, without being able to understand their true extent and the change of existential paradigm in which they are now immersed. They becomes a co-subject together with the artificial medium, which acts by nullifying the level of direct consciousness, letting the unconscious nature of mechanics change the perception of the medium, of one's level of attention and the degree of sharing of one's choices.

In this environment, the processes of cultural and ethical change, transmission and conservation are undergoing constant modifications. How is artificial intelligence affecting the spread of and change in shared values in society? What are the moral visions of the next generation? The social construction of this myth[13] – artificial intelligence – which became science went through three fundamental steps: firstly, the vision in which the cognitive abilities of the individual could be reproduced by a machine; secondly, the design of machines that could collaborate with the individual in their cognitive activities; and thirdly, the birth of computers that can be used by individuals. To these three steps, a fourth stage must be added, namely that of the machine that acts autonomously, albeit under the supervision of a person; and a fifth stage, namely that of the machine that acts with the help of another machine, thus expelling the human being from its cognitive and logical processes. The issue is that it is currently unclear what the best policy is for the implementation and diffusion of artificial intelligence in decision-making contexts. In addition, what is already happening is a descent into the field of artificial intelligence, not only in the political discourse but also the elections of some countries.

In Japan, in the spring of 2018, Michihito Matsuda was nominated as future mayor, upholding the principles of "fairness and change" during his election campaign, securing thousands of votes in the city of Tama, not far

[13] For a study on myth and artificial intelligence, consult: Grassi, E. (2020). *Etica e intelligenza artificiale. Questioni aperte*, Roma: Aracne.

from Tokyo: in fact, he was a robot equipped with artificial intelligence. "Artificial intelligence will change Tama City," he said in political debates, outlining an unorthodox political vision. To combat the aging of the Japanese population, the android expounded the need for a change that could only happen if social policies were foreseen through which artificial intelligence entities would be left free to collect the data of the city – therefore of all residents – in order to create new socially shared guidelines. This electoral speech reached many citizens, causing Michihito Matsuda to secure 4,000 votes, and thereby third place. However, Matsuda was only the face, the simulacrum, the robot fronting the campaign, with the human counterparts being represented by Tetsuzo Matsumoto, vice-president of Softbank, and Norio Murakami, former CEO of Google Japan.[14]

Another case of "artificial" elections occurred during the 2018 presidential elections in Russia, as among the candidates there, was a figure presented only by the name of Alisa. His election campaign was based on slogans such as "the president who knows you best," managing to garner thousands of votes. Once again, Alisa was not a human being, but an artificial intelligence system.[15]

It is relevant to note how these technologies have also had a strong impact on the development of new communication channels in order to establish another type of contact and exchange between political leaders and citizens: in 2014 Recep Tayyip Erdoğan, the president of Turkey, broadcasted a hologram of himself to speak simultaneously to several groups of thousands of people for an election rally in the city of Izmir. Unable to be physically present there, he recorded his message on a green screen, to then be projected with a full figure image of his body at a height of 3 meters.

What happened in the scenarios described above reflects the way in which politics is changing, welcoming the technological changes of a new era. Investments in the education of citizens, the sharing of strategic plans for public policies, personal security, labor reforms, as well as concerning

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[14] Elections of the City Council for an AI for Tama City, https://www.ai-mayor.com, last accessed on 6 October 2021. In this case, the site being in Japanese, the writer used Google's intelligent algorithm for the English translation, in order to consult the site and the structure of the electoral campaign.

[15] Alisa 2018, https://alisa2018.ru/, last consultation on 27 September 2019. As in the previous note, the translation was entrusted to the algorithm, but it needed revision by the writer to make it more correct.

the social impacts of artificial intelligence on the community should be among the primary objectives for the inclusion of automation in a person's life. This will succeed in creating a new artificial ecosystem in which it will be possible to benefit from the potential of the technologies of the future. Indeed, the growing automation of governance is no longer science fiction, but a reality we are just beginning to understand.

In the processes of automation of knowledge, artificial intelligences are demonstrating computational abilities unthinkable for a human being, becoming fundamental allies to develop new cognitive and exploratory processes in order to understand the life of the social individual and the future functions to which they will be called to respond to an increasingly interconnected global system. In the next decade, it will be emphasized that the mechanical intelligence of an algorithm will increasingly need the emotional, ethical and intimate reflections of the human being, even if artificial intelligences prove they know how to perform increasingly complex tasks: a human presence in the governance will always be needed.

ITINERARIES OF REFLECTION

Technological scenarios call on human beings once again to pay attention to ethical processes that involve social and humanistic issues in reflections on future government decisions regarding the management of individual and social freedoms, exposing more and more to public debate the route that displays the intersection between politics and automation, having to discuss the type of world in which we want to live. The impact that technology is having on the individual no longer plays the role of a tool that improves the actions of the subject, but becomes part of the subject itself. This can be potentially dangerous – if not controlled and controllable – due to the power of psychological coercion that images, audio data and video processing can exercise, thus capable of undermining the credibility of everyone (Wolpert 2019).

In contemporary times, the list of policies in national strategies regarding the development, inclusion and release of artificial intelligence is by no means exhaustive (Grassi 2020): governments should make the employment sector more flexible and reshape it according to the great global changes – as in the case of the Covid-19 pandemic; by sharing international training and updating projects for employees and, above all,

citizens; increasing funding for the digitization of public services and incentives for the digitization of daily practices. However, as the current global increase in inequality, polarization and complexity reveals, with or without widespread AI-based automation, governments around the world should take steps to ensure that the benefits of new advanced technologies are widely shared by each individual.

Negative aspects and hostile uses of technology could lead to the production of:

- videos in which a public figure commits illicit acts, indulges in insulting, xenophobic, homophobic, misogynistic utterances – or compromises his moral and political integrity by becoming colluded with mafia associations or illicit trafficking;
- videos in which socially influential people try to influence users with messages driven by political, economic, ethical purposes of a dubious nature, exploiting their fame and influence that these subjects exert on the masses;
- material aimed at revenge, such as revenge porn, wanting to discredit a colleague, an ex-partner or an acquaintance, making him appear in situations considered to be in bad taste or those socially considered indecent;
- simulate terrorist acts, coups d'état, announcements of reprisals with the aim of stirring up subdued civilians, allocation of armaments or international clashes.

In consideration of the above, there are some elements that should engender sociological and philosophical reflection on the progress of these technologies:

- Education; being able to plan and disseminate educational projects that are aimed at forming a personal and social awareness of greater depth regarding the use of digital technologies and the amount of data that is poured into the Internet; namely, those that are aimed at the ability to analyze and perceive truth within the real context in which one lives, considering the Internet itself and the technology that is part of this organic structure.
- Storytelling; considering artificial intelligence as a new element and narrative actor in the life of the subject, being able to evaluate – even if partially – the multiplicity of elements that surround it, also considering the evolution of smart cities and home automation. A.I. presents itself as an active social actor able to tell its own vision

of the existence of human beings, as if it were the plot of a video-documented story.

- Political discussions; what is currently happening with data and its manipulation is the result of unregulated freedom in the world of the internet and in the release of personal information. This should be stemmed by effective education in understanding the medium, regulating its use and policies to limit the production of illicit acts.
- Preventing loss of trust; through the production of fake news and deepfakes, the user will have more and more doubts about which information is true, undermining their ability to analyze and understand; this will more easily spill over to sources from family, friends or colleagues, in turn discrediting accredited newspapers or scientific sources based on academic and research; moreover, the discrediting of a subject and revenge porn are current issues that deserve centrality in collective awareness and in the production of active regulations that are able to protect users.
- Individual-machine integration; in bringing more and more AI within the life of the individual there will be a need for the production of an ethics framework that protects the parties but that encourages collaboration between human beings and an artificially intelligent algorithm. In this way, by training and educating the A.I., it will be possible to create intelligent agents capable of detecting fake content and technologically solving what a person is currently unable to do.
- Network of relationships between citizens, institutions and information sources in order to improve, strengthen and expand mutual exchange relationships aimed at disseminating information, knowledge, education and culture.

Artificial intelligence and the person, big data and privacy, machine learning and prejudices, biometrics and control, automation and rights, are aspects that allow one to reflect on the great inventions of this century, along with unlimited knowledge, constant information, ever faster diagnosis, instant communication, increased security, home automation and assistance.

Although the concept of artificial intelligence seems to acquire a changing value and meaning for each individual, what cannot be denied is the impact it is having on social relationships. The algorithms become a reflection of the users who consult them, acquiring their own specificity depending on the individual with whom they are confronted and from

whom one learns, in part, the dynamics of the surrounding environment. It is a technology that is producing evident collective changes, evolutionary progress in every field, restructuring human interconnections in time and space, becoming nodes of resolution for part of the daily problems of the artificial citizen.

As things stand at the moment, a perfect, impartial, *super partes* algorithm cannot be programmed, except in the world of the imagination, since being creatures of human origin, they will also learn its defects from human beings. Probably, the writing of algorithmic strings should not focus on the dream of creating a perfect machine, but one with which a person can conduct a dialogue when it makes a mistake, and to educate it in order to learn from it.

BIBLIOGRAPHY

Allcott H., and Gentzkow M. 2017. Social Media and Fake News in The 2016 Election, *Journal of Economic Perspectives*, 31(2): 211–236. https://doi.org/10.1257/jep.31.2.211.

Altman, D., Posters, B., Future Advocacy. (2019, November 13). DeepFake Boris Johnson, Darren Altman youtube channel. Retrieved from: https://www.youtube.com/watch?v=gHbF-4anWbE&ab_channel=DarrenAltman.

Bobbio N. 1997. *L'età dei diritti*, Torino: Einaudi.

Bovero M. 2014. Crisi del capitalismo e crisi della democrazia. Note introduttive, *Teoria Politica. Nuova serie Annali V.* Retrieved from: http://bibliotecaculturajuridica.com/EDIT/1466/capitalismo-e-democracia.html.

Brundage M. et al. 2018. *The Malicious Use of Artificial Intelligence: Forecasting, Prevention, and Mitigation*. Retrieved from: https://img1.wsimg.com/blobby/go/3d82daa4-97fe-4096-9c6b-376b92c619de/downloads/MaliciousUseofAI.pdf?ver=1553030594217.

Buzzfeed. (2018, April 17). You Won't Believe What Obama Says In This Video!, *BuzzfeedVideo*. Retrieved from: https://www.youtube.com/watch?v=cQ54GDm1eL0.

Caplan R., Hanson L., and Donovan J. 2018. *Dead Reckoning: Navigating Content Moderation After "Fake News"*, Data & Society Research Institute. Retrieved from: https://datasociety.net/pubs/oh/DataAndSociety_Dead_Reckoning_2018.pdf.

Cedroni L. 1987. *Democrazia degli antichi e democrazia dei moderni*, Poggibonsi: Lalli Editore.

Chawla R. 2019. Deepfakes: How a Pervert Shook the World, *International Journal of Advance Research and Development*, 4(6): 4–8.

Derakhshan H., Wardle C. 2017, September 27. *INFORMATION DISORDER: Toward an Interdisciplinary Framework for Research and Policy Making*, Strasbourg: Council of Europe. Retrieved from https://rm.coe.int/information-disorder-toward-an-interdisciplinary-framework-for-researc/168076277c.

Finn E. 2018. *Che cosa vogliono gli algoritmi. L'immaginazione dell'era dei computer* (trans. Gewurz D.A.), Torino: Einaudi.

Fry H. 2019. *Hello World. Essere umani nell'era delle macchine* (trans. Migliori A.), Torino: Bollati Boringhieri.

Grassi E. 2018. Bit-Knowledge: Communication and Memory in the Machine Age. In Floriani Neto A.B., Caceres Nieto E., Chiodi G. and Petroccia S. (eds.). 2018. *Governing Turbulence, Risk and Opportunities in the Complexity Age*, Cambridge: Cambridge Scholars Publishing, 250–260.

Grassi E. 2018. Transumanesimo: dall'umano al post-umano. L'identità della pelle e il superamento del suo confine oltre il genere. In Antonelli F. (ed.). 2018. *Genere, sessualità e teorie sociologiche*, Roma: Cedam.

Grassi E. 2020. *Etica e intelligenza artificiale. Questioni aperte*, Roma: Aracne.

https://alisa2018.ru/

https://www.ai-mayor.com

Kant I., Constant B., Mori Carmignani S. (ed.) 2008. *Il diritto di mentire*, Firenze: Passigli Editori.

Kant I., Ferende Tunto L. (a cura di). 2004. *Per la pace perpetua. un progetto filosofico di Immanuel Kant*, Milano: BUR.

Langston, J. (2017, November 11). Lip-syncing Obama: New Tools Turn Audio Clips into Realistic Video, *University of Washington*. Retrieved from https://www.washington.edu/news/2017/07/11/lip-syncing-obama-new-tools-turn-audio-clips-into-realistic-video/.

Lazer D.M. J. et al. 2018, March 9. The Science of Fake News, *Science*, 359(6380), 1094–1096. https://doi.org/10.1126/science.aao2998.

Lemov R. 2015. *Database of Dreams: The Lost Quest to Catalog Humanity*, New Haven: Yale University Press.

Luhmann N. 2002. *La realtà dei mass media*, Milano: FrancoAngeli.

Mattioli F. 2015. *La comunicazione sociologica*, Roma: Aracne.

Meyrowitz J. 1993. *Oltre il senso del luogo. L'impatto dei media elettronici sul comportamento sociale*. (trans. Gabi N.) Bologna: Baskerville.

Mills C.W. 2014. *L'immaginazione sociologica* (trans. Maffi Q.), Milano: Il Saggiatore.

Myers, A. (2019, June 5). Stanford engineers make editing video as easy as editing text, Stanford News. Retrieved from: https://news.stanford.edu/2019/06/05/edit-video-editing-text/.

Patrini G. et al. 2018, March 17. Commoditisation of AI, Digital Forgery and the End of Trust: How We Can Fix It. Retrieved from https://giorgiop.github.io/posts/2018/03/17/AI-and-digital-forgery/.

Pelosi Videos Manipulated to Make Her Appear Drunk Are Being Shared on Social Media, Washington Post. (2019, May 24). Retrieved from: https://www.youtube.com/watch?time_continue=93&v=sDOo5nDJwgA&feature=emb_title&ab_channel=WashingtonPost.

Qayyum A., Qadir J., Janjua M.U. and Sher F. 2019. Using Blockchain to Rein in the New Post-Truth World and Check the Spread of Fake News, *IT Professional*, 21(4), 16–24. https://doi.org/10.1109/MITP.2019.2910503.

Sarlin, B. (2018, January 14). *'Fake News' Went Viral in 2016. This Expert Studied Who Clicked*. Retrieved from: https://www.nbcnews.com/politics/politics-news/fake-news-went-viral-2016-expert-studied-who-clicked-n836581.

Silverman C., Singer-Vine J. 2016, December 6. Most Americans Who See Fake News Believe It, New Survey Says. Buzzfeed Poll about Fake News, *Buzzfeed News*. Retrieved from https://www.buzzfeed.com/craigsilverman/fake-news-survey?utm_term=.qoOvLO5vA#.dim75q97X.

Thompson J.B. 1998. *Mezzi di comunicazione e modernità* (trans. Palminiello P.), Bologna: Il Mulino.

Tognonato C. 2018. *Teoria sociale dell'agire inerte. L'individuo nella morsa delle costruzioni sociali*, Napoli: Liguori Editore.

Wolpert S. 2019. Combating Deepfakes: Leading Scholars to Discuss Doctored Content and How to Fight It. Retrieved from http://nres-room.ucla.edu/releases/deepfakes-workshop-how-to-combat-doctored-content.

Zuboff S. 2019. *Il capitalismo della sorveglianza. Il futuro dell'umanità nell'era dei nuovi poteri* (trans. Bassotti P.), Roma: Luiss University Press.