

AI AND INFORMATION: FROM *MEDIUM* TO INTERLOCUTOR

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Abstract

The study explores the possible impacts of systems governed by artificial intelligence (AI) on the world of information and communication in the digital age and addresses the main open legal issues, with particular reference to the fundamental rights of opinion and expression.

Keywords

Algorithm, Artificial Intelligence, Cyberspace, Freedom of Opinion and Expression, Fundamental Rights, Information.

Summary

1. The issue: how is information produced by AI? - 2. Artificial intelligence: some elements. - 3. The procedures of info-generation by AI. - 4. The automatization of information: between the burden of verification and the right to accuracy. - 5. The protection of the user of new communication *media* and information agents. - 6. Conclusion. Outcomes of an experiment: AI thinks, AI writes, AI apologizes...

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1. THE ISSUE: HOW IS INFORMATION PRODUCED BY AI?

On August 14, 2023 at about noon, the author asked ChatGPT² the question (henceforth referred to as Q1 and R1 for the response): “How does artificial intelligence produce information?” and obtained the following answer from the respondent³ ...

R1-ChatGPT: “Artificial intelligence, particularly language models like mine based on GPT-3.5, produces information through machine learning on massive textual datasets. Here is a simplified explanation of how the information generation process works:

1. **Training on data:** Artificial intelligence systems are pre-trained on enormous amounts of texts from several sources, such as books, articles, Web pages, and more. These texts are employed to teach the model how words and sentences are structured and related to each other.
2. **Learning relationships:** During training, the model learns semantic, syntactic and, grammatical relationships among words. It learns to recognize speech patterns, sentence constructions, and common word associations.
3. **Creation of internal representations:** During training, the model creates internal representations or “embeddings” of

² ChatGPT (GPT stands for Generative Pretrained Transformer) is a chatbot implemented by OpenAI, L.L.C. based on an artificial intelligence system, trained with supervised machine learning, capable of producing text-based content by processing natural language (Natural Language Processing): “is an AI-powered language model developed by OpenAI, capable of generating human-like text based on context and past conversations”, in <https://chat.openai.com/auth/login?next=%2F>, See also the “Terms of use” last updated March 14, 2023 <https://openai.com/policies/terms-of-use>.

³ The conversation was developed with a fictitious user name and is verifiable at the link: <https://chat.openai.com/share/10e4c78e-af37-47de-9745-7236ed96b03b>.

different concepts and words. These representations are numerical vectors that capture the semantic features of words and the contexts in which they appear.

4. **Text generation:** When addressed with an input prompt or sentence, the model uses internal representations and knowledge gained during training to generate new text sentences. It uses the learned patterns and relationships to determine which word or sentence should follow coherently and meaningfully.
5. **Best Answer Selection:** The model generates several possible answers based on the input provided. It then uses selection algorithms to evaluate and choose the best response, depending on criteria such as consistency, relevance, and grammar.
6. **Generation of final output:** The selected output is presented as a response to the initial prompt. The model produces this response, which is affected by its training and the associations it has learned from the input data.

It is worth noting that artificial intelligence like GPT-3.5 does not have understanding or consciousness like humans. It produces text based on statistical and probabilistic patterns learned from data, without an intrinsic comprehension of meaning. The output of artificial intelligence ought to be critically assessed and used carefully, especially when it involves important or sensitive information”.

Not fully satisfied, the writer relaunched with other questions, obtaining the corresponding answers reproduced below in the footnotes.

2. ARTIFICIAL INTELLIGENCE: SOME ELEMENTS

The debate on artificial intelligence (henceforth AI)⁴ appears dense with questions and articulated in multiple facets. In this paper, a single aspect of the broader subject is explored, namely the relationship between artificial intelligence and information.

The specific interest concerns the impacts of AI information activity on the world of law⁵ and human rights. The underlying question can be expressed in the following terms: whether and to what extent AI systems may affect certain fundamental rights and what remedies may be adopted.

To outline just a few coordinates of the overall picture, it is useful to recall that the term artificial intelligence refers to a processor or computer integrated with software, capable not only of performing operations based on algorithms and procedures imparted by humans “but also ... of calculating how to act effectively and safely in a wide variety of new situations”⁶.

Within the line of research about AI⁷, distinguished scientists – particularly mathematicians, engineers, but also philosophers and clinicians – have attempted to explore patterns of functioning of human intelligence, not only to try to describe the processes of the mind⁸ but also to reproduce them in similarly functioning artificial objects. Yet, despite scientific and technological progress, the projecting and designing of machines capable of

⁴ For a discussion on the subject see AMATO MANGIAMELI, 2022a, 2022b. See also AMATO 2020, 45 ff.

⁵ See BORRUSO 1997; BORRUSO, DI GIORGI, MATTIOLI, RAGONA 2004; DURANTE 2007; FROSINI 2022; GIANNANTONIO 1989; LOSANO 1993; LUCATUORTO 2006; PICA 2003; SARTOR 2022.

⁶ NORVIG, RUSSELL 2021, 3 [translated by the author].

⁷ For the history of artificial intelligence, please refer to the text by NORVIG, RUSSELL cit.; see also FEIGENBAUM 1977; WEIZENBAUM 1976; MITCHELL 2022; SEARLE 2023.

⁸ The forerunner in this field of study was undoubtedly Alan Mathison Turing, who set up research and experiments in Great Britain in the 1940s for military defense: TURING 1950 and 1994.

replicating the operations of the human brain have posed – and left open – not a few doubts and questions⁹.

These scholars sought not only to reproduce human thinking but also human acting or decision-making capacity in so-called artificial rational agents: these could “operate autonomously, be able to perceive the environment, persist in an activity over a long period, adjust to changes, and create and pursue goals. A rational agent acts in such a way as to obtain the best outcome or, under conditions of uncertainty, the best-expected outcome”¹⁰.

The characteristic of AI in the *strong*¹¹ sense – as it has been defined in opposition with the so-called *weak* AI – would be precisely that of learning¹² from experience and drawing up new instructions to cope with unforeseen situations to achieve the programmed goal.

Artificial intelligent agents are systems capable of interfering with the environment¹³ (more accurately work environment or task environment) in which they are enclosed, producing a result (output) based on data and procedural rules not only entered during programming (input) but also acquired through machine learning mechanisms (henceforth ML). These agents consist of an architecture and a program¹⁴: the architecture may consist of either a simple, commonly used PC or a self-driving car, a vacuum cleaner with sensors for dirt, or a medical diagnostic system.

From the examples cited above, it is clear that AI research has developed along four basic directions¹⁵ – marked based on the combination of

⁹ This issue has already been addressed by AMATO MANGIAMELI 2017a; also in AMATO MANGIAMELI 2017b. For a recent study see BODEN 2018.

¹⁰ NORVIG, RUSSELL cit., 6 [translated by the author].

¹¹ Cf. DURANTE cit., 714; SARTOR cit., 18; FIORIGLIO 2014.

¹² On the ability of machine learning cf. MITCHELL 1999; SAMUEL 1959; SEARLE 1984.

¹³ Cf. NORVIG, RUSSELL cit., chapt. 2, 39-50.

¹⁴ NORVIG, RUSSELL cit., *ibidem*.

¹⁵ NORVIG, RUSSELL cit., 4-7.

binomial thinking/acting, human/rational – that is, to produce machines capable of computing distinguished processes according to a four-partition outlined: 1) acting humanly; 2) thinking humanly; 3) thinking rationally; 4) acting rationally.

The proceeding, by which a rational agent produces a result, can be described by the mathematical agent function, intended as an “abstract mathematical description” and by an “agent program, a concrete implementation of it running within a physical system”¹⁶.

3. THE PROCEDURES OF INFO-GENERATION BY AI

To narrow the focus of this study it should be clarified that here only those AI systems are considered that interfere with the electronic task environment with the exclusion of the physical task environment¹⁷ – automatic car robots, drones, weapons, biomedical machinery – as information is a specific output, produced in the form of data packets or electronic streams.

A *software-type* intelligent agent, programmed to process information, may be required to process an answer to a question of either historiographical or scientific subject or even to compose rhyming verse¹⁸: it “receives as

¹⁶ NORVIG, RUSSELL cit., 40 [translated by the author].

¹⁷ For a classificatory view, see TADDEI ELMI 2020, who talks about SAIP (in Italian SIAP) “Systems of AI Programs” and SAIR (SIAR) “Systems of IA Robot”, 848.

¹⁸ To the question “compose a sonnet about summer” ChatGPT responded by elaborating a 14-verse poem, following the metrical pattern of fourteen hendecasyllabic lines, three quatrains + 1 rhymed couplet:

“Between the blue sky and the sun’s fierce blaze,
 Summer arrives in a fervent display,
 Fields are dancing in the vibrant breeze’s sway,
 The world is enchanted in myriad ways.

sensorial input the contents of files, data packets and human input (via keyboard/mouse/touchscreen/voice) and can intervene on the environment by writing files, sending network packets and displaying information or generating sounds”¹⁹.

Through machine learning, an AI system processes a product through “algorithmic computational techniques dedicated to improving the ability of machines to do things that require intelligence”²⁰. These techniques, therefore, take into account not only data entered at the programming stage but also data acquired subsequently, moving from a purely executive process, so-called *knowledge-driven ML*, to one that is at least partially autonomous, so-called *data-driven ML*²¹.

In particular, through the technique of supervised learning²², the machine is fed with a vast number of examples with which the correct answer is associated, and therefore the processor is trained to produce the correct output once a question, similar to those already known, is proposed. The system fed with a multiplicity of data examples (e.g., cat pictures), produces

The waves glisten along the coastal line,
Kissing the sand with a gentle embrace,
In the warm air, laughter and voices intertwine,
In joyous beauty, the world finds its place.

Flowers bloom in gardens, colors so bright,
A thousand scents and hues fill the air,
Beneath the shade of trees, cool respite,
Diverse creatures find solace and care.

Oh, sweet summer, brief yet so intense,
Immersing us in your dazzling presence”.

¹⁹ NORVIG, RUSSELL cit., 39 [translated by the author].

²⁰ SCIACCA 2022, 1173 [translated by the author].

²¹ SCIACCA cit., 1173.

²² SARTOR cit., 46.

the model (in this case, the ‘cat’ class) and where a new item is similar to those that contributed to the formation of the model, it is assigned to that same class.

Since the process is based on the analysis of individual cases, albeit in massive numbers, it is still a statistical-probabilistic method²³, which does not exclude error in the answer, e.g., in the form of assigning a new case to a mismatched class or even not understanding the question.

This phenomenon is already widely discussed and known as the problem of *algorithmic bias* or simply *bias*, due to several causes: according to one classification²⁴, *pre-existing biases* are called those arising from training data, e.g. due to poor representativeness of the data both at the numerical and historical-chronological level. On the other hand, technical-statistical discrimination *biases* are those caused by statistical association error by the software.

This implies that should an AI system be asked to provide information about a historical event, such as the French Revolution, the resulting text should be subject to verification on other historiographical texts, not only concerning the assessment of historical factual outcomes but even chronological elements.

The information provided by AI is still assembled, based on the aforementioned probabilistic criteria, through

²³ The difference between artificial and human intelligence may appear very subtle and could almost be overlooked, yet it can be outlined as follows: when confronted with the symptoms of a rare disease, an AI system designed for the bio-medical field could make a correct diagnosis based on the millions of cases analyzed in a very short time, with a capability never achievable by a physician with decades of professional experience; yet a young physician, with the background of university studies, could do the same thanks to some individual intuition or personal talent.

²⁴ Cf. ABRIANI in ABRIANI, SCHNEIDER 2021, the author also identifies the categories of *automation* and *translational bias*.

combination/modification/transformation²⁵ of data represented in the maximum number of networked contents, which therefore suggests with higher probability the correctness of the result, which remains unverified. Although the degree of approximation to the truth may be very high, an error²⁶ in the output is always possible. In the above conversation, the statement was confirmed by the artificial interlocutor²⁷.

²⁵ BODEN cit., 60 talks about three kinds of creative AI: ‘combinational, exploratory, transformational creativity’.

²⁶ Cf. MAGGIORI 2023.

²⁷ Q2: “What percentage of the information provided by artificial intelligence might be incorrect?”

R2-ChatGPT: “The accuracy of the information provided by artificial intelligence depends on several factors, including the quality and quantity of training data, the complexity of the user’s queries, and the model-specific capability. In the case of advanced models such as GPT-3.5, accuracy can generally be high, but the absence of errors cannot be guaranteed. Here are some points to consider regarding the accuracy of information provided by artificial intelligence:

1. **Training data:** The accuracy of artificial intelligence depends most on the quality of the data used for training. If the model has been trained on a large and diverse set of data, its answers are likely to be more accurate. However, if the model has not confronted with a wide range of contexts, it may make mistakes or give incorrect answers.
2. **Complexity of queries:** User requests may vary in complexity and specificity. Artificial intelligence may find it difficult to understand very complex requests or answer questions that require specialized or recent knowledge.
3. **The ambiguity of language:** Human language can be ambiguous and polysemic, meaning that a word or phrase can have several interpretations. Artificial intelligence may occasionally produce answers that do not match the user’s intention because of such ambiguities.
4. **Model updates:** Even if a model is accurate initially, the information may become outdated over time due to changes in society, technology, and knowledge. Periodic model updates can attempt to address this problem, but may not always be immediately available.

4. THE AUTOMATIZATION²⁸ OF INFORMATION: BETWEEN THE BURDEN OF VERIFICATION AND THE RIGHT TO ACCURACY

From all that has been said so far, it is clear that the user of text-generative AI systems may cope with incorrect information without even being aware of what kind of source is the author of that content.

This is requires the intervention of the law, which, in fulfillment of its rebalancing function, is called upon to prepare corrective measures for situations that harm rights.

In order to prepare means of protection of the subject using the above systems, it may be useful to mention some sections of information and communication law and check their applicability to the new world of AI.

With the concept of information in the legal context, reference is made not only to a complex *subjective* legal situation that recalls the fundamental right/freedom of speech but also to the *objective* aspect, which must provide for a *media* legal asset, suitable to guarantee, together with the freedom of the press and the prohibition of censorship – a *condicio sine qua non* of the existence of liberal-democratic regimes – a “knowledge demand, to which

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5. **Lack of understanding:** Artificial intelligence algorithms lack understanding like human understanding. They may generate answers that seem correct based on associations learned during training, but they may not understand the meaning of the content.

In general, it is advisable to treat AI responses as sources of information that require verification and confirmation, especially when dealing with critical issues or important decisions. Although accuracy may be high, there are always possibilities for error or misinterpretation”.

²⁸ About automatized information spoke FROSINI 1992.

would be relatable ... a specific duty to inform, mostly linked to the institutional position of certain public bodies²⁹.

The first aspect of an active subjective legal situation includes the freedom of opinion, thought, and expression, which is safeguarded nationally and internationally through the formulation of specific articles of Constitutions³⁰, as well as Declarations and Conventions on fundamental rights and freedoms³¹.

²⁹ COSTANZO 1993, 320, the author identifies a threefold meaning of the legal concept of information from the ‘public law’ perspective, specifically: “... (a) an «active» legal situation, expressed in the right or freedom to communicate and disseminate information ... or (b) a «passive» legal situation, understood as the freedom to receive information ... or finally (c) a situation, so to speak, «intermediate» or «reflexive» consisting of the right to inform oneself or to seek information” [translated by the author]. See also CHIOLA 1989.

³⁰ In the case of Brazil, see the guarantee of fundamental rights ensured by the *Constituição Da República Federativa do Brasil*, Título II, Capítulo I, *Dos Direitos e Deveres Individuais e Coletivos*: “Art. 5º Todos são iguais perante a lei, sem distinção de qualquer natureza, garantindo-se aos brasileiros e aos estrangeiros residentes no País a inviolabilidade do direito à vida, à liberdade, à igualdade, à segurança e à propriedade, nos termos seguintes: ... IV – é livre a manifestação do pensamento, sendo vedado o anonimato...; IX – é livre a expressão da atividade intelectual, artística, científica e de comunicação, independentemente de censura ou licença”, in <https://www2.camara.leg.br/atividade-legislativa/legislacao/constituicao1988>. In the case of Italy, please refer to the article 21, 1º and 2º comma of the Constitution of the Republic of Italy: “Tutti hanno diritto di manifestare liberamente il proprio pensiero con la parola, lo scritto e ogni altro mezzo di diffusione. La stampa non può essere soggetta ad autorizzazioni o censure”, in <https://www.senato.it/istituzione/la-costituzione/parte-i/titolo-i/articolo-21>. In the case of the United States of America, please refer to the First Amendment to the Constitution, part of the so-called ‘Bill of Rights’: “Amendment I. Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the Government for a redress of grievances”, in <https://www.archives.gov/founding-docs/bill-of-rights-transcript#toc-amendment-i>.

³¹ The main legal instruments at the different levels are cited: at the international level, Articles 18 and 19 of the *Universal Declaration of Human Rights* approved by the UN General Assembly on November 10, 1948, in <https://www.ohchr.org/en/human-rights/universal->

In the context of public law, the freedom of information embraces, on one side, the activities of researching, collecting, and processing and, on the other side, the diffusion of news and opinions, the latter being imputable to the freedom of the press and usually associated with business activity.

The legal issues related to the latter branch, called the publishing branch, are multifaceted and concern not only the *active* profile of the exercise of right, in the form of journalistic activity and therefore freedom of the press and its restriction; but also the right to be informed – under the *passive* and *reflexive* profile, as specified by the afore-mentioned literature – which profoundly affects the democratic structure of the State and the possibilities for citizens to exercise their political rights. So central is the legal definition of information and communication through norms and provisions that the qualification of the State as a totalitarian regime or not depends on the design of the regulation of the relative freedom, “giving place precisely to the dichotomy between systems founded on the subordination of the information to political power and systems that, on the contrary, such subordination reject and exclude”³².

As for the freedom of the press and of speech – since this is not the place for a thorough exposition of the subject, in extreme conciseness and without any pretension to exhaustiveness of the description – it should be recalled that the exercise must be balanced with certain limitations, given by the protection of official secrets and the right to confidentiality. It must also be performed in compliance with certain conditions of lawfulness – based

declaration/translations/english. In the legal set of provisions of the Council of Europe, see the 1950 *Convention on Human Rights and Fundamental Freedoms*, Articles 9 and 10, https://www.echr.coe.int/documents/d/echr/Convention_ENG; in the Charter of Fundamental Rights of the European Union, see Articles 10 and 11, in <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:12016P/TXT>.

³² COSTANZO cit., 320.

on established legal literature³³ and line of decisions³⁴ on the point – such as public interest in the information, objective truth, fairness of language, as well as proportionality and relevance for the significance of the facts.

Judicial remedies in the event of a breach of the law and the disclosure of false or at least incorrect news are expressly provided for. In the Italian legal system, both are addressed from a private law standpoint – warning, injunction, provisional seizure, the obligation to rectify by court order – as well as from the standpoint of criminal law, in particular with the provision of the law of defamation³⁵, against infringement of the honor and reputation of others.

By this point, since a new information agency has arisen in the digital space in the art of an artificial intelligent agent, this can not be missed by the domain legislation.

It seems clear that in this role, information-generating AI affects the freedom and right to inform and be informed, and therefore remedial measures should be set up to protect the user who may be confronted with incorrect news.

The first means of protection is the burden placed on the user, as ChatGPT suggested³⁶, to compare with other sources or appropriate websites that analyze and verify the information.

³³ See about this point CARETTI, DE SIERVO 2018, 525-536; FEDERICI 2013, 1081-1112; PALADIN, MAZZAROLLI, GIROTTO 2018, 624-636.

³⁴ In the case of Italy, please see as a leading case the decision Cass. Civ. n. 5259, October 18, 1984.

³⁵ The term defamation is used here regarding the Italian civil law system, even if it is not a crime in common law but a tort, and comprehends both variations of the *law of libel* and *slander*.

³⁶ Q3: “How can I verify the accuracy of what ChatGPT says?”

R3-ChatGPT “Verifying the accuracy of the information provided by ChatGPT is a good practice to ensure that the answers are reliable and accurate. Here are some steps you can follow to verify the accuracy of the response:

1. **General caution:** Consider ChatGPT answers as a source of information, not a definitive opinion. Look for confirmation through other reliable sources, such as books, accredited websites, experts in the field, and academic resources.
2. **Cross-search:** Look for the same information in different sources to check for consistency of answers. If several sources agree on a point, the information is more likely to be accurate.
3. **Authoritative sources:** Choose sources that are authoritative and reliable. Universities, government institutions, international organizations, recognized encyclopedias, and research articles are often good sources of accurate information.
4. **Compare different opinions:** If you are searching for opinions on complex or debated issues, consider comparing different perspectives to gain a complete understanding.
5. **Verify facts online:** Online fact-checking services that can help you verify statements do exist. Check reliable websites that analyze and verify information, such as Snopes, FactCheck.org, or PolitiFact.
6. **Cited references:** If ChatGPT provides references or citations, check if they are accurate and from reliable sources.
7. **Beware of recent opinions and information:** ChatGPT may present personal opinions or outdated information. Check if the opinions are supported by solid evidence and see if the information is updated.
8. **Use personal knowledge:** If you are an expert in a specific field, use your knowledge to assess the accuracy of the information provided.
9. **Ask specific questions:** Provide specific details in your questions to get accurate answers. More precise questions can reduce the risk of misinterpretation.
10. **Controlled experiments:** Whenever possible, test the accuracy of answers through controlled experiments or comparisons with known data.

Remember that artificial intelligence can make mistakes, so it is always a good habit to practice criticism and verification of the data provided”.

Q4: “You have said that ChatGPT may present personal opinions: whose opinions?”

R4-ChatGPT “I apologize if my previous response was confusing. I would like to clarify that artificial intelligence, such as ChatGPT, does not have personal opinions. When I mentioned “personal opinions”, I was referring to possible responses that may seem like opinions, but are generated based on statistical patterns learned from training data and do not reflect subjective thought or opinion.

ChatGPT does not have understanding, consciousness, or emotions like a human being. It produces responses based on language patterns learned from large amounts of text during

5. THE PROTECTION OF THE USER OF NEW COMMUNICATION MEDIA AND INFORMATION AGENTS

The inclusion of AI as an information source and interlocutor marks a further stage in what has been called the information revolution³⁷.

Information is defined on the one hand as “any data representative of reality retained by one subject or communicated by one subject to another”; on the other as “communication activities carried out by certain media, such as print, radio and television”³⁸ as well as *social networks*³⁹, *new media*⁴⁰, the web and digital platforms.

As an activity of disseminating news and keeping track of social and political events and happenings, the detention of the media and communication has

training. So when I mentioned “personal opinions” I meant that artificial intelligence might generate text that appears to represent a point of view but is not an expression of an actual individual.

In other words, ChatGPT responses are the result of statistical models that try to generate coherent and relevant text based on the information they have learned from the data, but they do not represent thoughts, opinions, or consciousness.”

Q5: “Why do you apologize? I was only asking for clarification”

R5-ChatGPT “I apologize if I misunderstood your question or caused confusion in my response. My goal is to provide clear and accurate information, and if there has been any misunderstanding or confusion in my answers, I am here to provide further clarification. Thank you for asking for further explanation, and I am here to help you with any questions or doubts, you might have”.

³⁷ Please, refer to FLORIDI 2012.

³⁸ ZENO-ZENCOVICH 1993 [translated by the author].

³⁹ CAMPAGNOLI 2020.

⁴⁰ FABRIS 2014, 106: “He would be wrong, however, who would consider these communication media merely, precisely, means: mere instruments to be used for purposes extraneous to them. Because they are not something neutral, acquiring value and meaning depending on the end for which they have been employed....” [translated by the author]. About *new media* cf. COSENZA 2014.

always played a key role in history: from oral culture to writing, from printed text to digital hypertext, each change in this field has marked a real cultural revolution.

Not only that: control of communication networks⁴¹ – from road networks to those that run over the air, from naval routes to electronic flows – has always been considered fundamental to the establishment or maintenance of power⁴².

Like most human activities – either gastronomy with food robots or self-driving cars, agriculture or biomedicine, and many other fields, either small-scale or industrial – communication activity today is immersed in the same atmosphere of cyberspace⁴³.

Yet, the changes that have taken place from the subjective side of the information providers and the objective side of the *media*⁴⁴ affect human life in a very special way, involving a crucial aspect, that of thought shaping⁴⁵. It has been pointed out that “originally in various European languages the verb *informare*, derived from Latin, meant not only to report facts (which could have negative implications) but also to «form the mind»...”⁴⁶.

⁴¹ For a study about the link between communication networks and power, please see INNIS 2001. For the specific topic of the Internet in public law, see COSTANZO 2000.

⁴² See MANGIAMELI 2023; SACCO 2011; SANTANIELLO 2021 and 2022; SON 2022.

⁴³ Cf. AMATO MANGIAMELI 2000, 12; also AMATO MANGIAMELI 2015.

⁴⁴ About the topic, please see GAMBINO, STAZI, MULA 2019.

⁴⁵ GITLIN, 2003, XIX-XX: “... for me, it all began with the awareness of a remarkable discordance between media representations and what I was happy (or unhappy) to call reality. This mismatch appeared in my mind, as a revelation, a kind of shock ... The news is not simply the “mirror” of the world; it is a conduit of ideas and symbols, an industrial output that promotes packages of ideas and ideologies and serves, as a result, as a social stabilizer but also sometimes as a forerunner of social change. News is a cognitive distortion. The world is like this, yet the news makes it appear that way” [translated by the author]. See also CERETTI, PADULA 2016; COLOMBO 2009; DI FRAIA 2007; EUGENI 2015.

⁴⁶ BRIGGS, BURKE 2002, 229.

Indeed, generating and spreading news and knowledge includes the power to manipulate opinions and control⁴⁷ social behavior⁴⁸.

With the new information-producing artificial intelligent agent, the law has to cope with a new center of power, potentially able to influence decisions of political affiliation and electoral choices⁴⁹ and even to do so in an undetectable way. This condition of unconscious subjection⁵⁰ of the citizen to information channels and AI systems increases the risk of infringement against constitutionally protected rights⁵¹, with particular concern for the same “conscious human self-determination”⁵².

Already with mass *media*⁵³ and the technology of the worldwideweb, much has been said about the risk of *disinformation* or *misinformation* – depending on whether the offering of incorrect information is intentional or not⁵⁴ – because the breadth and vagueness of the sea⁵⁵ of data in which we navigate, sometimes without a clear direction, makes it more difficult to discern⁵⁶

⁴⁷ On the origin of cybernetics as a technique of control, please see WIENER 1968; WIENER 1982.

⁴⁸ HAMARI, KOIVISTO, PAKKANEN 2014.

⁴⁹ About “electronic democracy”, please see BAILO 2020; also PETERS 2022a, 2022b and DANAHER 2016.

⁵⁰ PIEPER 2020, POSTMAN 1993. As Salardi observed: “Whoever comes first in controlling IT structures and regulating the use of smart technologies will actually be able to profit significantly on the economic level, on the level of power to control human activities globally, and on the level of building a specific model and vision of society. In the race are the great world powers”, SALARDI 2023, 1 [translated by the author].

⁵¹ Cf. SCIACCA cit.; please see also BUZZELLI, PALAZZO 2022; FOÀ 2020; OLIVETTI 2020; in the Brazilian area, please see SARLET, DE BITTENCOURT SIQUEIRA 2020; as a related study on Germany in the European Union context, please see HOFFMAN-RIEM 2020.

⁵² SCIACCA cit. [translated by the author].

⁵³ Cf. LUHMANN 2000. An author, FIDLER 2000, even spoke of ‘Mediamorphosis’.

⁵⁴ On contrasting disinformation, please see SUFFIA 2022.

⁵⁵ Cf. SARACENI 2021.

⁵⁶ QUATTROCIOCCI, VICINI 2018.

between true and false news, between descriptions and opinions, between reliable and self-referential sources.

As a matter of fact, on the web and through new *social media* any user may produce texts, as a *Webmaster* or *content provider*⁵⁷, become the author of personal novels, so-called “*blog-graphies*”⁵⁸, or even an opinion leader (called nowadays *influencer*) without any obligation of justifying the foundation of one’s ideas.

Furthermore, the AI information agent represents a real risk of manipulation. The first remedial measure is making the users aware of the information source’s nature so users can protect themselves by verifying contents.

Second, to avoid AI’s “intrinsic opaqueness”⁵⁹, it is necessary to make its processes transparent, even if this would not eliminate the so-called *black-box* phenomenon that means the impossibility of knowing *ex-post* the procedure developed to produce the outcome.

A peculiar legal issue regards the assignment of the copyright: once AI enters the arena of information communication technology (ICT) and new *media* law⁶⁰ in the sphere of *cyberspace*, how should it be juridically qualified by the law? Consequently, in the case of false information or libelous or slanderous statements, who is chargeable for the deed or the text? Whose is

⁵⁷ FEDERICI 1081 ss.: “... behaviors occurring on the Net, which by their own terms are all ‘communicative’, concerning exchange of information through mailing lists, e-mail, blogs, social networks, and public or private sites. Relevant here are the principles of freedom and guarantee of communication and information – active and passive, the expression of thought, the exercise of each individual’s personal rights, the freedom of speech and the press, and the secrecy and confidentiality of private communications. From the moment information technologies are deployed in the service of illicit purposes, they collide with other legal principles, such as the protection of the community and the individual, companies and the market, the good faith and trust of consumers, intellectual and industrial property, and the protection of *privacy*” [translated by the author].

⁵⁸ DI FRAIA cit.

⁵⁹ MESSINA 2022, 276-280.

⁶⁰ BRUNO 2019.

the tort or criminal liability in the case of defamation or even deceptive advertisement? Against whom could the person who is a victim of a data breach by AI proceed?

If we climb upon the pyramid from the bottom to the top, we will necessarily set the fundamental question, which summarizes all the above mentioned and is deduced by the premises: 1) if AI enters the dynamic playground of communication and information, and 2) if it is neither a *medium* nor a content, then *what* – or, as stated by somebody in literature, *who* – is AI according to the law?

In the attempt to answer the *quaestio – quid juris?* – about the legal identity of AI⁶¹, scholars have outlined different configurations. Some have spoken of either juristic personality⁶² regarding the software-type artificial agent, or ‘*e-person*’⁶³ (electronic personality) underlying its capacity to learn and provide itself with the instructions for subsequent processes, giving AI a certain degree of *autonomy* – e.g. the skill to learn a new idiom and elaborate an original and correctly translated text in a few minutes.

Until today, the theory of juristic personality, strictly intended, has not been justified, because AI is an *information-processing system*⁶⁴, which means a program that at all times elaborates inputs based on those capacities given by the programmer. Thus, scholars have suggested different kinds of legal

⁶¹ About particular issues, please see ALLEGRI 2019; BASSOLI 2022; CERRINA FERONI 2022; CERRINA FERONI, FONTANA, RAFFIOTTA 2022; PAJNO, DONATI, PERRUCCI 2022.

⁶² About the issue of an autonomous legal personality of AI, please see TADDEI ELMI cit.; SERGI 2022. For a discussion on the problem, please see CAMPAGNOLI 2023.

⁶³ The 2017 Civil Law Rules on Robotics already spoke of electronic personality, cf. EUROPEAN PARLIAMENT *Resolution of 16 February 2017 with recommendations to the Commission on Civil Law Rules on Robotics*, par. 59), lett. f), in <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52017IP0051>.

⁶⁴ BODEN cit., 3.

arrangements, such as in the civil law system either the patent, the trade secret, or the copyright⁶⁵.

With a certain degree of hazard, it could be possible to define AI as a framework of connected, tangible and intangible, corporeal or incorporeal things, a corporate entity with value assessment similar to a going concern or even a trust or an endowment constituted to realize a scope.

Nevertheless, the lack of transparency of the purpose of AI, which remains hidden beneath what has been called ‘technical, legal, or intrinsic opaqueness’⁶⁶, excludes the aforementioned legal arrangements.

The key aspect of the discussion concerns liability⁶⁷ for damages and impacts produced by the informational activity of AI. As different hypotheses are examined, the following comments come to mind.

If the program were the author of the opinion or the deceptive information, it would be comparable to the professional journalist, who exercises freedom of speech and of the press, constrained by conditions of lawfulness as already cited. If the program were only the *medium* of communication, it would be comparable to a news website, so that the individual author with the editor-in-chief would be liable for abuse of the freedom of the press in case of breach of the right to one’s own likeness or reputation.

This issue, which has been thoroughly discussed concerning the new media, is not easily solved for AI, which matches neither with the figure of the journalist nor with the editor nor with the digital services provider.

Under the current state of affairs, because AI is not a corporate person, it is the programmer, webmaster, or employer who is liable for the tort of his agents, according to the legal design of strict liability.

The European Union law-giving institutions have acknowledged the possible misleading effect and restrictive impact of AI on fundamental

⁶⁵ TADDEI ELMI cit., 855.

⁶⁶ MESSINA cit., [translated by the author].

⁶⁷ FINOCCHIARO 2020.

rights⁶⁸, such as the freedom of thought and expression, as it clearly results from those documents⁶⁹ that testify to the strategies set to adopt an *Artificial Intelligence Act*.

As it is clear from the *Explanatory Memorandum*, a kind of foreword to the *Proposal of EU Regulation*:

“The use of AI with its specific characteristics (e.g. opacity, complexity, dependency on data, autonomous behaviour) can adversely affect a number of fundamental rights enshrined in the EU Charter of Fundamental Rights (‘the Charter’). This proposal seeks to ensure a high level of protection for those fundamental rights and aims to address various sources of risks through a clearly defined risk-based approach. With a set of requirements for trustworthy AI and proportionate obligations on all value chain participants, the proposal will enhance and promote the protection of the rights protected by the Charter: the right to human dignity (Article 1), respect for private life and protection of personal data (Articles 7 and 8), non-discrimination (Article 21) and equality between women and men (Article 23). It aims to prevent a chilling effect on the rights to freedom of expression (Article 11)...”⁷⁰

⁶⁸ About the protection of fundamental rights in the EU context, please see QUEIROLO 2010.

⁶⁹ Cf. the work promoted by the Commission of the High-Level Expert Group on Artificial Intelligence, AI-HLEG in the document <https://digital-strategy.ec.europa.eu/en/policies/expert-group-ai>.

⁷⁰ THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EU, *Proposal for a Regulation of The European Parliament and of The Council laying down harmonised rules on Artificial Intelligence (Artificial Intelligence Act) and amending certain Union legislative Acts*, in <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021PC0206>, par. 3.5.

Notwithstanding the acknowledgment of the harms potentially caused to fundamental rights by this type of AI systems, the *Proposal of EU Regulation* does not classify them under Article 8 and following as ‘high-risk AI systems’, which shall comply with specific requirements, such as the establishment, implementation, documentation, and maintenance of a risk and quality management system.

The European Union has not even adopted a regulation comparable to that recommended by the *European Parliament resolution on Robotics*, which suggests the inscription of specific categories of robots in a public Union register⁷¹ and the establishment of a compulsory insurance regime for robot producers or owners⁷², similar to what already happens with cars.

The *Proposal* barely suggests a legal asset – precisely by article 52, comma 3 – aimed at adopting remedial measures such as transparency obligations to those AI systems that provide content and can cause misleading or deceptive impacts on the information:

“Users of an AI system that generates or manipulates image, audio or video content that appreciably resembles existing persons, objects, places or other entities or events and would falsely appear to a person to be authentic or truthful (‘deep fake’), shall disclose that the content has been artificially generated or manipulated”⁷³.

Because an AI system may have been trained with biased data – as ChatGPT most recently clarified in response numbers 6-7-8-9⁷⁴ (see footnotes and

⁷¹ BRAVO 2020.

⁷² *Resolution of 16 February 2017 with recommendations to the Commission on Civil Law Rules on Robotics...*, cit., par. 59, lett. a) and e).

⁷³ See *Proposal for a Regulation of The European Parliament and of The Council laying down harmonised rules on Artificial Intelligence*, cit., article 52, comma 3.

⁷⁴ Q6: “How does the training of ChatGPT take place?”

R6-ChatGPT: “The training of ChatGPT and similar models is based on a machine learning process known as “supervised learning” using a large set of text data. Here is a simplified overview of how ChatGPT training takes place:

1. **Data collection:** Large amounts of texts are collected from a variety of sources, such as books, articles, websites, forums, encyclopedias, and more. These texts can cover a wide range of topics and writing styles.
2. **Data preparation:** The collected texts are cleaned and pre-processed to remove unwanted information, formatting, or noise. The data are broken into smaller sentences or text segments known as 'samples'.
3. **Model training:** training begins by feeding the model with text examples and their responses. The model attempts to learn language patterns, word relationships, and syntactic and semantic characteristics of texts.
4. **Optimization of parameters:** During training, the model updates its internal parameters based on the error between the generated answers and correct answers provided in the training data. This process uses optimization algorithms to improve the model's predictive capabilities.
5. **Iteration:** Training occurs through several cycles (called epochs) in which the model is exposed to different training data. This process gradually improves the model's ability to respond accurately and consistently to a wide range of demands.
6. **Validation and evaluation:** During training, the model is also assessed on validation data that were not part of the training process; this helps to avoid overfitting (when the model fits the training data too closely and does not generalize well) and to detect when the model is improving.
7. **Fine-tuning and updates:** After initial training, the system can be tuned on specific data or optimized for certain tasks or contexts. This process allows the model to be customized to better respond to precise tasks.

It is important to emphasize that training artificial intelligence models such as ChatGPT requires significant computational resources and expert supervision to ensure that the model learns appropriately and produces consistent and accurate responses”.

Q7-“What does it mean to customize the model?”

R7-ChatGPT: “Customizing the artificial intelligence model such as ChatGPT refers to adapting the pre-trained model to respond specifically to precise tasks, contexts, or conversational styles. This process can improve the accuracy and relevance of responses in some scenarios. Here are some details on how the customization of the template takes place:

1. **Fine-tuning:** After initial training on a large dataset, the model can be tuned using a smaller, more specific dataset. This fine-tuning dataset contains examples of

following pages) – it presents a significant risk of generating further biases⁷⁵ and distorting effects on individual and social behavior.

If AI can contribute to polluting⁷⁶ cyberspace, to introducing content likely to induce the public to consider fake news as truth, or mere opinions as objective descriptions of events, then, in this writer's opinion, appropriate regulation should be adopted to ensure that users know the purposes pursued by that particular system and the data relating to the one who commissions or produces the AI. It could have been programmed for entirely lawful purposes – such as persuading people of the goodness of certain behaviors, either for individual health or protection of the ecosystem; to build the capacity to create wealth; to establish a new product

conversations or texts relevant to the context in which the model is to be used. During fine-tuning, the model learns to better respond to specific requests and adapt to the desired context.

2. **Tone and style control:** With customization, you can control the tone, style, and attitude of the model. For example, you can instruct the model to respond in a formal, informal, engaging, or serious manner as required.
3. **Creation of specialized chatbots:** Customisation can be used to create specialized chatbots in specific areas, such as customer care, legal advice, or medical assistance. The model can be trained on data related to these sectors to answer customer or patient questions with accuracy.
4. **Adaptation to specific tasks:** If you want to use the model for specific tasks such as translation, code generation, or text summarisation, customizing can lead the model to perform these tasks more effectively.
5. **Controlling sensitive responses:** Customisation can also be finalized to prevent the template from generating inappropriate or unwanted content. You can train the template to avoid certain sensitive answers or topics.

It is important to note that customization requires expertise in training artificial intelligence models and the availability of relevant training data. In addition, customization may imply the risk of amplifying any biases in the training data, so it is necessary to consider them consciously⁷⁷.

⁷⁵ So called GIGO phenomenon 'garbage in, garbage out'.

⁷⁶ Scholars speak with increasing frequency of the pollution of digital space and the need to *clean the infosphere*, cf.: SUFFIA cit.

on the market; to help this or that party/candidate/coalition win an election – or even for unlawful and criminal purposes, such as theft or even murder. If an AI system is trained and fed with prejudices or misrepresentative, biased or obsolete data, it can become a tool serving the creator’s technological-financial interests, and be exploited to consolidate certain economic, political, or industrial power assets. The impact on the fundamental freedoms of opinion and expression would not only be an eventual risk but an actual and high one.

In the absence of transparency on the purposes of the system – the so-called intrinsic opaqueness referred to above – AI could likely be used to achieve manipulative or even fraudulent purposes. In this case, a much more restrictive regulation of the management and use of these systems would be recommended, to protect the trust of citizens, who are not aware that they are interacting with a real stakeholder.

The scope of regulatory instruments should be to affirm the principles of the rule of law⁷⁷, of protection of individual rights – at least for those systems that submit themselves to respect those rights – in the world of technological production:

“... the protection of constitutional values should necessarily be realized by a retraction of protections at the moment when the software is planned, designed and then realized (protection by design and by default) in such a way as to internalize the values protected by constitutional law in the very design of the machines ... in the presence of the need to reconfigure the *rule of law* in the algorithmic society in the form of a *rule of Technology* ...”⁷⁸.

⁷⁷ GREENSTEIN 2022.

⁷⁸ SCIACCA cit.

If a government, albeit a legitimate one, were to require the production of an AI system with the instruction, based on an assessment of the dangerousness of *dissenting opinion*, to remove from the internet all content expressing *disagreement*, technology would be subservient to the self-assertion of a political regime and a new form of totalitarianism would be foreshadowed, in which ideas are controlled and manipulated by a political-financial power, that hides behind the curtains of technology.

Q8: “How can biases in training data be eliminated?”

R8-ChatGPT: “Eliminating biases present in training data is a complex and tough challenge, but there are steps that can be taken to mitigate their impact and improve fairness in the responses generated by artificial intelligence models. Here are some strategies to consider:

1. **Data selection and cleansing:** Perform a rigorous choice of training data to reduce biased content. Remove data that contains hate speech, stereotypes, or offensive content.
2. **Diversification of data:** Try to include a wide range of sources and perspectives in the training data. A greater diversity of voices can help reduce the risk of bias.
3. **Conscious labeling:** Training data can be consciously labeled to flag sensitive or questionable contexts: this allows the model to deal with such contexts more responsibly.
4. **Reducing inequalities in representation:** If some items or groups are misrepresented in the training data, you can try to balance this inequality to prevent the model from unconsciously favoring some perspectives than others.
5. **Training with explicit labels:** You can train the model to respond to inputs that indicate neutrality and fairness as priorities, to help minimize biased responses.
6. **Evaluation and control:** Carefully evaluate the model's responses and continuously monitor its performance. You

can intervene to correct or adjust the model when biased responses occur.

7. **Auditing and bias analysis:** Conduct systematic analyzes to identify and understand biases in the training data and model responses: this can help develop mitigation strategies.
8. **Involving experts:** Involve experts from different fields, such as ethics, civil rights, and social sciences, to assess and address biases in artificial intelligence models.
9. **Transparency:** Make training and customization processes transparent so that users are aware of limitations and potential risks.

It is important to note that the complete elimination of biases is extremely difficult and sometimes impossible. However, by engaging in ethical training practices and continuing to work on improving the models, it is possible to reduce the effect of such biases in the generated responses."

Q9: "Does ChatGPT have biases?"

R9-ChatGPT: "Yes, ChatGPT and similar models can inherit biases in the training data. Because they are trained on a wide range of texts collected from the Internet, they can assimilate cultural, social, and linguistic biases present in those texts. As a result, the responses generated by the model may unintentionally reflect biases or stereotypes present in the data.

OpenAI recognizes this challenge and is working to address the problem of biases in language models. Efforts such as sorting and cleaning the data, improving training processes, and finding ways to mitigate bias are part of the ongoing work to make the models more fair and accountable.

However, it is important to note that despite efforts, the elimination of bias is extremely arduous. Users should be

aware of this possibility and use model responses with discernment, assessing the veracity and fairness of the information provided”.

6. CONCLUSION. OUTCOMES OF AN EXPERIMENT: AI THINKS, AI WRITES, AI APOLOGIZES...

Not considered here is the problem, albeit of enormous importance, of the unforeseeable outcomes of the development of AI systems beyond the purposes given by man. Scholars cannot yet predict the development of these complex software systems in the sense of self-programming or self-regulation, given AI’s ability to learn and process the vast amount of sources analyzed on the network, including the ability to program a system.

By focusing on the AI system as an agent of communication and information, it has been observed that, fed with biased training data, AI can manipulatively lead network users into making decisions in one direction rather than another in different areas of life, either the purchase of consumer goods or commercial, banking and insurance negotiations, entertainment, or political choices.

In conclusion, the human being cannot disengage his reasoning faculty and delegate cognitive functions, the selection of information, and the making of behavioral choices to an intelligence⁷⁹ other than his own, which he has produced – according to a narrow conception of intelligence itself as mere calculating reason – on penalty of risking depriving himself of the instruments to control the truthfulness of the information obtained and

⁷⁹ On the need to develop ‘connective intelligence’, please see DE KERCKHOVE 2007: “I think we are now in the age of the *tag*. This is the message of the Internet *medium*: the possibility of giving an individual address to all digital and electronic objects. ... Connective intelligence is nothing other than the interactive connection of networked minds”, 159 [translated by the author]. See also DE KERCKHOVE 1993.

subjecting himself to the power of technology⁸⁰, which he is instead called upon – with full responsibility⁸¹ – to govern to achieve the common good⁸².

Q10: “Can an artificial intelligence have feelings of apology?”

R10-ChatGPT: “No, artificial intelligence like me cannot have emotions or feelings, including the feeling of apology. Apologies are an expression of empathy and awareness, requiring an understanding and emotional involvement that artificial intelligence algorithms do not possess. I can provide information, answer questions, and assist you with your requests, but all of this is based on the language patterns and information I have learned during training”.

⁸⁰ Cf. GRASSIE, HANSELL 2011; TRAVERSA 2010.

⁸¹ As Hannah Arendt recalled, renouncing one’s conscience and faculty of judgment in favor of external power or of the opinion already formulated by the majority is a recurrent temptation, especially under totalitarian regimes: “There are so many reasons why the problem of law and judgment involves moral questions of primary importance ... First, how can I distinguish what is right from what is wrong when the majority of the people around me have already formulated a judgment? ... And indeed there is, in our society, a widespread fear of judging, a fear that has nothing to do with the biblical saying ‘Judge not lest ye be judged’... In fact, behind the unwillingness to judge lies the doubt that no one is free, the doubt that no one is responsible or accountable for the acts they have committed”, cf. ARENDT 2004, 16-17; see also 1987 and 2017.

⁸² MACINTYRE 1988; SANDEL 2010.

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