Francesco Biondo / Gevisa La Rocca /
Viviana Trapani (eds.)

Information Disorder

Learning to Recognize Fake News

PETER LANG

Francesco Biondo / Gevisa La Rocca / Viviana Trapani (eds.)

Information Disorder

The Fake News project was developed as a social project to suggest an idea of a plural, open, and dialectical society. One product of social action is public opinion, which directly and indirectly influences policy decisions, including those concerning the control and prospects of social innovation, thus exerting pressure on any kind of democratic regime. Disinformation hinders the free process of public opinion building by using various means to negatively influence public opinion with the effect of widening the chasm between decision-making power and active citizenry, who in turn needs to be properly informed to usefully contribute to achieving publicly shared goals in a transparent manner.

The Editors
Francesco Biondo is an associate professor of Legal Philosophy at the Department of Law, University of Palermo.

Gevisa La Rocca is an associate professor of Sociology of Communication at the Kore University of Enna.

Viviana Trapani is an associate professor of Industrial Design at the University of Palermo and coordinator of the Master's Degree Course in *Design and culture of the territory*.

www.peterlang.com

Information Disorder

Francesco Biondo / Gevisa La Rocca /
Viviana Trapani (eds.)

Information Disorder

Learning to Recognize Fake News

PETER LANG

Bibliographic Information published by the Deutsche Nationalbibliothek
The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data is available in the internet at http://dnb.d-nb.de.

Library of Congress Cataloging-in-Publication Data
A CIP catalog record for this book has been applied for at the Library of Congress

This volume has been made possible by the co-funding of ERDF to the "FAKE NEWS" project, through Regione Siciliana (Italy) - Assessorato delle Attività Produttive - CUP G79J18000630007 under the call entitled: "Programma Operativo FESR 2014-2020 della Regione Siciliana, Avviso pubblico per l'attuazione dell'Azione 1.1.5 Sostegno all'avanzamento tecnologico delle imprese attraverso il finanziamento di linee pilota e azioni di validazione precoce dei prodotti e di dimostrazione su larga scala".

Partnership:

- IT HUB S.R.L Milan | *leader of project – ICT know how*
- University of Palermo | *partner*
  Dipartimento di Architettura | *coordination of social and scientific activities*
  Dipartimento di Giurisprudenza | *scientific support in law disciplines*

With collaboration of:

- University of Salerno | *research support*
  Dipartimento di Informatica | *scientific support in informatics*

Cover illustration: © Cinzia Ferrara

ISSN 2511-9753
ISBN 978-3-631-88556-7 (Print) · E-ISBN 978-3-631-88557-4 (E-PDF)
E-ISBN 978-3-631-88558-1 (EPUB) · DOI 10.3726/b19996

Peter Lang – Berlin · Bruxelles · Lausanne · New York · Oxford
This publication has been peer reviewed.

www.peterlang.com

Contents

Part III Justice and Misinformation

Part IV Information and Misinformation Design

Preface
by Ferdinando Trapani[1]

The Smart Specialisation Strategy (RIS3), namely the national or regional innovation strategies for smart, sustainable and inclusive growth in the European Union, co-funded by the European Commission, with the general objective of concentrating European resources on emerging technology areas that can be developed in the region by focusing on building local knowledge rather than transferring external technological resources.

The Sicily Region, with the ERDF Operational Programme 2014–2020, Action 1.1.5 for "Support for the technological advancement of companies through the financing of pilot lines and early product validation and large-scale demonstration actions", has selected the Fake News project in the effort to support the technological development of tools to control information exchange on the Web to counter the phenomenon of disinformation.

The "Fake News" initiative was implemented by the University of Palermo as a partner in support of the lead partner It.Hub/Blasting News (Milan-Lugano) and was generally articulated in six different phases. The partners were involved in different ways: the university for expertise in the humanities (sociology of communication, law and information design) and the lead partner for advanced technology (ICT). This publication is part of the dissemination of the project and is in many ways its conclusion in terms of the outcome of the academic research carried out by Sicilian faculty with the contribution of other scholars who participated in the project and supported it in terms of transdisciplinary critical analysis.

The Fake News project was developed as a social project to suggest an idea of a plural, open, and dialectical society. One product of social action is public opinion, which directly and indirectly influences policy decisions, including those concerning the control and prospects of social innovation, thus exerting pressure on any kind of democratic regime. In non-democratic regimes, public opinion is strongly influenced by the ruling power. Disinformation hinders the free process of public opinion building by using various means to negatively influence public opinion with the effect of widening the chasm between decision-making power and active citizenry, who in turn needs to be properly

1 Scientific responsible of the Fake News project, Department of Architecture, University of Palermo.

informed in order to usefully contribute to achieving publicly shared goals in a transparent manner.

The volume is divided into four parts that in some ways reflect the cognitive path that the project followed: from technological (ICT) to social instances, reflections highlighting the impact of disinformation on law and the safeguarding of public information to considerations on the implications for visual communication, architecture and urban planning.

Based on these studies, we believe it is possible to open a new field of study in which social studies can find a way to engage with other crucial disciplines to build connections between society, justice and quality of communication in the transformation of the places and spaces of the physical and virtual city.

Part I Technology and News on Web

Massimiliano Aliverti

The proposed solution: The fake news algorithm project and verification of results

Abstract: We are describing the attempt to build an algorithm able to detect how much a piece of online content is likely to be considered "fake news" based on the analysis of the article text through artificial intelligence and machine learning, particularly through Natural Language Processing, and the analysis of contextual information such as website authority and author realness. The end goal of this algorithm is to promote a new preventive approach to identifying fake news content, obtained through the empowerment of readers to self-assess what is to be considered "fake news" or, on the opposite, what is to be considered trustworthy and reliable content.

Keywords: ICT, fact-checking, algorithm, machine learning, misinformation, computing machinery

Introduction

To date, the most common solutions to tackle the "fake news" problem in the online world have primarily been using a reactionary approach, mainly working on taking down misinformation before it can become viral. Social networks like Facebook or Twitter have mostly been using this approach to limit the spreading of false or misleading content within their digital environments. As Adam Mosseri, Facebook VP of News Feed, declared back in 2017: "We cannot become arbiters of truth ourselves – it's not feasible given our scale, and it's not our role. Instead, we're working on better ways to hear from our community and work with third parties to identify false news and prevent it from spreading on our platform" (Mosseri, 2017).

Due to their immense scale of operations, the social networks typical course of action is to remove fake news from distribution as soon after it is flagged to become a potential problem or is likely to harm their audience. Social media act by removing the economic incentives for traffickers of misinformation, claiming that the motivation behind posting fake news is mainly financial (Olan et al., 2022).

The practical steps that have been used so far by social networking companies include (Mosseri, 2017):

(a) Identification of false news through community reporting and through third party fact-checking organizations, so that its spread could be limited and made anti-economical. For example, if reading an article makes people significantly less likely to share it, social networks consider it a sign that a story has misled people in some way. Also, social networks tried to make it easier to report a false news story, allowing users to flag stories as false and subsequently demoting them in their content feeds. Lastly, companies like Facebook or Twitter started programs to work with independent third-party fact-checking organizations. Whenever fact-checking organizations identify a story as false, they typically link to a corresponding article explaining why and again, demote those articles in their content feeds.
(b) Making it difficult for individuals or organizations posting fake news to buy sponsored advertising through their social media platforms, thus removing a strong financial incentive that typically boosts the practice even more.
(c) Applying advanced technological tools such as AI and machine learning to detect accounts responsible for spamming and posting false news, subsequently removing them from their platforms. Social networks have started to take a hard line against this activity and usually block millions of fake accounts each day, most of them shortly after their creation. For example, during US Presidential Elections between October and December of 2020, Facebook alone disabled more than 1.3 billion of fake accounts created on their platform (Rosen, 2020).

However, we strongly believe that a reactionary approach is not always the best course of action to tackle the fake news problem effectively. Any social intervention that reacts to an emerging or existing problem affecting individuals or communities always assumes that things happen and there is really nothing to be done about it. On the other hand, a preventive approach relies on a proactive process that involves (a) forward-looking diagnostics to assess risk factors potentially affecting vulnerable individuals or communities and (b) providing the tools to prevent them from suffering negative effects or from aggravating those risks (Santana & Juana, 2021).

By providing a new, preventive approach we would like to give readers a simple tool – in the form of an algorithm-based web application – to assess by themselves whether to trust a news article or news source or, whenever this is not the case, to ask themselves additional questions and to search and compare different sources of information. This goes into the direction of meeting the underlying purpose of any social work, which is to promote changes that improve people's quality of life and the environments they live in.

The technical solution

To tackle the fake news issue in the online and social media environment we built an algorithm which is able to identify potential false news signals at a website and news article level and to provide readers with recommendations on how it is best to interpret the content of a news article, in light of the trustworthiness of what is written inside. The algorithm has been built by combining four different areas of analysis into a synthetic score which returns these possible results: (a) likely to be fake news, (b) several missing elements to determine the trustworthiness of the content, but not enough to consider it fake news and (c) unlikely to be fake news. For the simplicity of interpretation by users every result is associated with a colour scheme: (a) green if the news article is ok, (b) orange, when elements are missing, (c) red when the news article is very likely to be fake.

The areas of analysis we investigated are the following:

- Analysis at a website level;
- Analysis at an author level;
- Analysis at an entity level;
- Sentiment analysis both at a document level and at a sentence level.

Website analysis

The goal of website analysis is to identify suspicious signals on the website hosting the news content we are evaluating. The basic assumption is that any legitimate publisher could be clearly identified and should provide a physical proof of existence in the form of addresses or contact information.

To execute this analysis, we verify through HTML analysis the presence of a few distinctive elements on the website, particularly thanks to a commonly used structured data markup scheme widely supported by search engines and social media, called schema.org. The original goal of this on-page markup scheme is to help search engines and social media understand the information on web pages and provide richer information to readers (Guha et al., 2015). We are tactically adapting schema.org metadata to identify the following distinctive elements and apply a scoring scheme A:

Author analysis

The goal of author analysis is to identify if the author behind the production of a certain news article is actually a real person or if it is impossible to find matches of that person in the real world. The basic assumption is that any "real" author

Tab. 1: Variable and scoring scheme A

Variable	Scoring scheme
Can the publisher name be found on the web page?	+ "*n*" (positive) score if present [a] - "*n*" (negative) score if not present
Can a physical address be found on the web page?	+ "*n*" (positive) score if present - "*n*" (negative) score if not present
Can any contact information be found on the web page (telephone or email)?	+ "*n*" (positive) score if present - "*n*" (negative) score if not present

[a] **Note: real scores won't be provided throughout this entire paper because they constitute industrial secret pending patent approval of the algorithm.**

Tab. 2: Variable and scoring scheme B

Variabile	Scoring
Could any author biography be found on the website?	+ "*n*" (positive) score if present - "*n*" (negative) score if not present
Could any Facebook account linked to the author of the article be found?	+ "*n*" (positive) score if present - "*n*" (negative) score if not present
Could any Linkedin account linked to the author of the news article be found?	+ "*n*" (positive) score if present - "*n*" (negative) score if not present
Could any Twitter account linked to the author of the news article be found?	+ "*n*" (positive) score if present - "*n*" (negative) score if not present

should be recognizable and identifiable through their online presence, namely because they own accounts on the major social networks (e.g. Facebook, Twitter, Linkedin) or they feature their own biography on the website they are working for (Buntain et al., 2019).

In order to perform this piece of analysis, again we are tactically adapting the widespread use of the previously mentioned schema.org markup system to verify if there are any leads about the author's identity originating from the news article itself.

Based on the results of this first step, we then match the findings directly by verifying the existence of social media accounts and subsequently apply a scoring scheme B:

Entity analysis

The goal of entity analysis is to inspect the given news article through the use of Natural Language Processing, searching for known entities and to return relevant information about those entities. NLP is a field in machine learning and artificial intelligence which leverages on the ability of a computer to understand, analyse, manipulate, and potentially generate human language (Khurana et al., 2017). For the purpose of entity analysis we are using NLP for information retrieval and information extraction from a given news article text. Particularly, we define an entity as an identifiable thing and can typically be referred to with a proper noun or pronoun. Entities include things such as a person, public figure, landmark or a temporal element that can be found in any piece of text (Al-Moslmi et al., 2019).

The basic assumption behind entity analysis is that any reliable piece of information should always feature a few elements that can allow any reader to precisely place a fact both in time and space, as well as identifying the stakeholders involved: the so-called five Ws. Those are questions whose answers are universally considered basic in journalism or information gathering (Hamborg et al., 2018). According to the principle of the Five Ws, a news article can only be considered complete if it answers all the following questions: (1) Who? (2) What? (3) When? (4) Where? (5) Why?

Practically, we built a sub-algorithm based on Google Natural Language API, that (a) breaks up the piece of text into n-grams, (b) locates entities within the text, (c) identifies them through matches with public databases of information, (d) sorts them in categories and lastly (e) ranks them by their salience. We define salience as a numerical score that expresses the importance of a linguistic feature within a portion of text such as a news article (Gupta & Jalal, 2019). The higher the salience score, the more a linguistic feature is likely to stand out to a human reader or strike it as more important than other words in the given text.

Once the different entities have been categorized and ranked by their salience, the algorithm isolates the ones with higher salience and proceeds to score them according to the following scoring scheme C:

Sentiment and hate speech analysis

The goal of sentiment and hate speech analysis is to inspect the given news article through the use of Natural Language Processing and identify the author's attitude towards the topics dealt in the article. The basic assumption is that any news article should generally feature a neutral representation of a fact or situation (Balahur et al., 2010). Any representation skewed towards too much positive or too much negative feelings typically leads to biased information and potentially to false news. We define sentiment analysis as the process of computationally

Tab. 3: Variable and scoring scheme C

Variable	Scoring scheme
Is the given entity present in the news article title?	+ "*n*" (positive) score if present - "*n*" (negative) score if not present
Is the given entity present in the news article subtitle?	+ "*n*" (positive) score if present - "*n*" (negative) score if not present
Is the given entity present in the news article body?	+ "*n*" (positive) score if present with more or equal than 3 repetitions. + 0 (neutral) score if present with less than 3 repetitions.

Tab. 4: Variable and scoring scheme D

Variable	Classification
Document score is <= -0,4	Negative
Document score is comprised between -0,3 e 0,7	Neutral
Document score is >= 0,8	Positive

identifying and categorizing opinions expressed in a news article, to determine whether the writer's attitude towards a particular category of topic, feelings or dimensions is positive, negative, or neutral.

We built another sub-algorithm leveraging again on the features of Google Natural Language API and analysed the outputs on two different levels: document level and single sentence level. The algorithm returns two different types of metrics: (a) score of the sentiment (Wankhade et al., 2022), which ranges between -1.0 (negative) and 1.0 (positive) and corresponds to the overall emotional leaning of the news article and (b) magnitude, which quantitatively indicates the overall strength of emotion within the given article scoring between 0.0 and + ∞. The magnitude score is not normalized, resulting in each expression of emotion to contribute to the article's magnitude.

The first step of the sub-algorithm is processing the whole document (news article) and, based on the results of the sentiment analysis, applying a classification as follows scoring scheme D:

In order to obtain the final score to be inserted into the general algorithm we weigh the score by its magnitude: document score x document magnitude.

The second step of the sub-algorithm is to run a sentence analysis to categorize the type of sentiment that the news article is presenting (Laaksonen et al.,

Tab. 5: Categories

Category	Description
Hate speech	Attacking a group of people based on attributes like religion, gender or disabilities.
Sexism	Offensive language towards a particular gender.
Political bias	Unilateral and partial point of view on a specific political topic.
Clickbait	Sensationalistic information with the sole purpose of attracting attention and typically misleading the reader.
Insults	Offensive language towards any individual or entity.
Toxicity	Language that is disrespectful, abusive, unpleasant and/or harmful.

2020), whenever it falls in a negative or positive classification. If an article scores neutral we don't perform any sentence analysis as it positively verifies the initial assumption. The categorization is obtained through a simplified "bag of words" approach. We built a list of words for each of the following categories:

Inside the news article object of the analysis we isolate only the sentences with a sentiment score that falls into the previous negative or positive classification. For every sentence we then verify if there are words that match with the categories above. We then sort the categories based on the number of matches found: if any category alone exceeds a percentage of total matches found, the news article is classified under that particular category.

Overall "Fake News" score

All the findings obtained from the previous analyses are now ready to be weighed into an overall "Fake News" score according to the following scheme:

The score is then made available to readers through a simple web user interface that mimics the semblance of traffic lights. Using metaphors such as this in UI design allows users to create a connection between the real world and a digital experience. Real-world metaphors empower users by allowing them to transfer existing knowledge about how digital things work and their meaning.

Results

So far, the Fake News algorithm has been tested in a real world environment using a sample of the article produced by international news publisher Blasting News. The tests have been run using a comparative approach: human evaluation vs. computational evaluation of the same pieces of text. The human

Tab. 6: Fake news score according to the following scheme

Category	**Description**
Green light	The article is unlikely to be fake news. It features most of the elements that can reasonably make it trustworthy and legitimate.
Orange light	There are several elements that could lead to considering the article as fake news, but the evaluation is pending further information. It is missing several elements, but not enough to exclude its trustworthiness and legitimacy.
Red light	The article is likely to be fake news. It misses most of the elements that can reasonably make it trustworthy and legitimate.

evaluation approach has been divided into two different phases: (a) verification of the quality of results according to the same scheme under which the algorithm functions and (b) use of the most common fact-checking techniques according to the Newmark J-School Accuracy Checklist for Reporters. The size of the sample tested has been in the range of the hundreds of news articles and it provided a strong accuracy of over 70 % correct matches so far. Further tests can be performed in two directions in order to improve the accuracy of the algorithm: (a) differing the type of publisher and the type of news articles object of the test and (b) increasing the size of the sample.

References

Al-Moslmi, Tareq / Gallofré Ocana, Marc / Opdahl, Andreas L. / Veres, Csaba: Named Entity Extraction for Knowledge Graphs: A Literature Overview, 2019.

Balahur, Alexandra / Steinberger, Ralf / Kabadjov, Mijail / Zavarella, Vanni / van der Goot, Erik / Halkia, Matina / Pouliquen, Bruno / Belyaeva, Jenya: Sentiment Analysis in the News, 2010.

Buntain, Cody / Golbeck, Jennifer / Auxier, Brooke / Assefa, Biniyam / Boyd, Karen / Byers, Kristen / Chawla, Gursimran / Chen, Daniel / Cooper, Benjamin / Cupani, Jake / Daetwyler, Clay / DeWitt, Nicholas / Garcia, Suzanne / Hafer, Christine / Khan, Misbah / Lewis, Elo / Martindale, Marianna / Mauriello, Matthew / McNamara, Helen / Workneh, Frazer: "Analyzing a Fake News Authorship Network". *IDEALS, the Illinois Digital Environment for Access to Learning and Scholarship*, 2019, retrieved 8.6.2022 from 10.21900/iconf.2019.103358.

Guha, R.V. / Brickley, Dan / Macbeth, Steve: "Schema.org: Evolution of Structured Data on the Web". *ACM Queue*, 13(9), 2015, retrieved 6.6.2022 from https://queue.acm.org/detail.cfm?id=2857276.

Gupta, Neeraj / Jalal, Anand S.: "A Robust Model for Salient Text Detection in Natural Scene Images Using MSER Feature Detector and Grabcut". *Multimedia Tools Applications*, 78, 2019, pp. 10821–10835, retrieved 6.6.2022 from 10.1007/s11042-018-6613-1.

Hamborg, Felix / Breitinger, Corinna / Schubotz, Moritz / Lachnit, Soeren / Gipp, Bela: "Extraction of Main Event Descriptors from News Articles by Answering the Journalistic Five W and One H Questions". *JCDL '18: Proceedings of the 18th ACM/IEEE on Joint Conference on Digital Libraries, May*, 2018 pp. 339–340, retrieved 6.6.2022 from 10.1145/3197026.3203899.

Khurana, Diksha / Koli, Aditya / Khatter, Kiran / Singh, Sukhdev: "Natural Language Processing: State of the Art, Current Trends and Challenges". *arXiv:1708.05148*, 2017, retrieved 6.6.2022 from 10.48550/arXiv.1708.05148.

Laaksonen, Salla-Maria / Haapoja, Jesse / Kinnunen, Teemu / Nelimarkka, Matti / Pöyhtäri, Reeta; "The Datafication of Hate: Expectations and Challenges in Automated Hate Speech Monitoring". *Front. Big Data 3:3*, 2020, retrieved 6.6.2022 from 10.3389/fdata.2020.00003.

Mosseri, Adam: Working to Stop Misinformation and False News. Published on Facebook corporate blog, 2017, retrieved 8.6.2022 from https://www.facebook.com/formedia/blog/working-to-stop-misinformation-and-false-news.

Olan, Femi / Jayawickrama, Uchitha / Ogiemwonyi Arakpogun, Emmanuel / Suklan, Jana / Liu, Shaofeng: "Fake News on Social Media: The Impact on Society". *Information Systems Frontiers*, 2022, retrieved 6.6.2022 from 10.1007/s10796-022-10242-z.

Rosen, Guy: "How We're Tackling Misinformation Across Our Apps". *Morning Consult*, 2020, retrieved 6.6.2022 from https://morningconsult.com/opinions/how-were-tackling-misinformation-across-our-apps/.

Santana Hernández, Juana-D.: "Between Reaction and Prevention: A Systematic Review of a Social Intervention Dilemma for Social Work (2000–2019)". *Cuadernos de Trabajo Social*, 34(1), 2021, pp. 103–114.

Wankhade, Mayur / Rao, Annavarapu C.S. / Kulkarni, Chaitanya: "A Survey on Sentiment Analysis Methods, Applications, and Challenges". *Artificial Intelligence Review*, 2022, retrieved 6.6.2022 from 10.1007/s10462-022-10144-1.

Angelo Paura

Robot reporters, machine learning and disinformation: How artificial intelligence is revolutionizing journalism

Abstract: In the last few years technology has changed the way we consume news as well as the way that media all over the world produces content. Media outlets use algorithms to distribute and target readers; AI is increasingly part of the daily routine of the newsroom to compile finance and sports articles and even to write book or movie reviews; machine learning tools are pivotal in data scraping and in investigative journalism, opening new frontiers for journalists and researchers. At the same time, populist movements, far-right and anti-vax activists, and regimes are exploiting these powerful tools to spread misinformation and propaganda, thanks also to permissive policies put in place by social media companies like Facebook and YouTube and messaging platforms like Telegram. But technology – together with good journalistic practices and human fact-checking – is the only way to tackle the problem of misinformation online. The article describes how AI is helping journalists and fact-checkers dealing with misinformation, and which startups are working on cutting-edge solutions using machine learning to combat fake news.

Keywords: Algorithm, machine learning, misinformation, fake news, on-line journalism

Introduction

After hundreds of years of speculation and science fiction stories set on distant planets where more advanced civilizations have created intelligent AI, in the mid-1950s the English mathematician Alan Turing managed to give a scientific form to the possibility of building intelligent machines. With Computing Machinery and Intelligence, Turing (1950) begins a journey that in less than fifty years led humanity to increasingly complex, efficient and less expensive solutions and machines. Thus began the civilization of big data and algorithms, of autonomous machines, of software that writes perfect articles, and of computers capable of analysing billions of pieces of information in a few seconds thanks to artificial intelligence. The present day would probably have made the techno-utopian Hugo Gernsback either smile (or wince): a personal friend of Nikola Tesla, Gernsback had already announced in 1930 that in the following twenty years we would produce flying cars that would lead to the great exodus from the metropolis and to the reconquest of the countryside. For now, Gernsback's predictions have not come true and the world is going through an unprecedented ecological crisis, but the world is also experiencing one of the most important technological revolutions in history: on the internet, data circulates non-stop thanks to super-intelligent computers, the metaverse promises parallel lives in perfect virtual worlds, human-machine integration is a reality into which billions of dollars are invested every year.

Despite ethical limitations and risks, AI is also transforming newsrooms and now – after conquering the world's most important and influential digital newspapers and news agencies (The New York Times, Washington Post, The Guardian, Associated Press, Bloomberg and Reuters) – it has also become part of the daily routine of small or local outlets both for the writing of stock market, weather and sports results content, and for solving much more complex issues such as verifying news and writing more linguistically sophisticated articles. In this essay we will try to understand what the ethical limits of the use of artificial intelligence within the media industry are, as well as the advantages and strengths of this revolution.

Artificial intelligence, ethical limits and future scenarios

On 10 September 2020 the British newspaper The Guardian published its first article completely written by a computer, using GPT-3 (2020) software developed by OpenAI. "I am not a human. I am a robot. A thinking robot," writes the robot-journalist, adding: "I am to convince as many human beings as possible not to be afraid of me. Stephen Hawking has warned that AI could 'spell the end of the human race'. I am here to convince you not to worry. Artificial intelligence will not destroy humans. Believe me."

The piece, published in the website's Opinion section and bylined as "Artificial Intelligence", was written by giving the algorithm very little information and explicitly asking it to focus on the fact that AI is not a danger to humanity, unlike what several scientists and analysts have repeatedly argued. Take theoretical physicist Stephen Hawking, for example: in a lengthy 2014 interview with the BBC, Hawking argued that increasing the complexity of artificial intelligence would lead it to surpass man and self-programming could lead humanity to its end. Also the philosopher Nick Bostrom (2014) published *Superintelligence: Paths, Dangers, Strategies*, a seminal work for understanding the risks associated with the hyper-technological future we are about to enter. In the essay Bostrom traces the positions of several researchers who argue that we have 90 % of chances that between 2075 and 2090 there will be machines with an intelligence quite similar to that of humans.

What we will try to understand in more depth in this article is not so much the possible dangers to humanity – if they exist – linked to the exponential increase in the power of future artificial intelligence, but how the values and ethical standards of good journalism can be amalgamated with the increasing use of algorithms and AI. This path began in the early 1900s when at Columbia University in New York, subjects that seemed unthinkable to many began to be included in the curriculum of the school of journalism: statistics, social sciences, alongside subjects such as literature and economics. "With these innovations, by 1920, journalist and public intellectual Walter Lippmann dreamt of a world where news was less politicized punditry and more expert opinion based on structured data," reads an article written by Bernat Ivancsics and Mark Hansen (2019). Moreover, what machines can already do today is replace a part of journalists' work, finding themselves with more free time to explore issues or details that they would have otherwise neglected in order to devote themselves to tasks that artificial intelligence can perform far more effectively. But there is another interesting aspect to consider. If in most cases artificial intelligence is seen as a potential bearer of bias (e.g. its use by police departments, in advertisements or in job recruitment), instead in journalism it is a guarantor of more balanced articles. Here are some examples:

- A paper published in August 2021 by the Massachusetts Institute of Technology titled *Machine-Learning media bias* (D'Alonzo, Tegmark, 2021) analysed thousands of articles written by over 100 American media outlets to flag the level of polarization, focusing on particular phrasing such as: undocumented immigrants / illegal immigrants, fetus / unborn baby, demonstrators / anarchists. The study showed how artificial intelligence systems based on Natural Language Processing (NLP) can be used to understand the political position of a media outlet by giving more context to readers.
- At the beginning of 2022 the Pulitzer Center founded the AI Accountability Network, an initiative that plans to finance a group of journalists who can investigate government use of artificial intelligence and algorithms, and at the same time to use these technologies to produce articles and surveys. The centre also will fund an international network of journalists dealing with artificial intelligence and how it can be best used in the media landscape.

These two examples demonstrate how AI can be a powerful tool to help journalism achieve its main goal: defending democracy by creating communities that are informed and able to make better decisions as a result. On the contrary, as mentioned above, artificial intelligence poses structural problems within our democracies and for this reason it must be studied and "controlled" as if it were one of the main components of our societies. In a recent newsletter, Pulitzer Prize-winning editor-in-chief of The Markup Julia Angwin speaks to this increasing complexity: "Investigative reporters used AI tools in their work on the The Pandora Papers, the massive leak of more than 11.9 million documents from 14 offshore services firms published by The International Consortium of Investigative Journalists (ICIJ) starting October 3rd, 2021. The Pandora Papers revealed the real owners of 29,000 offshore companies, including country leaders, cabinet ministers, ambassadors, celebrities, business leaders, and billionaires." Angwin concludes: "So while policymakers scramble to keep up, journalists and researchers are on the algorithmic front lines investigating and monitoring these complex systems."

I wrote in Prismo Magazine on the Politics of Algorithms (Paura, 2016), explaining how institutional use of these technologies posed new challenges in transparency between governments and citizens, with the risk of increasing inequality and a top-down democracy of control, described masterfully by David Graeber (2015). I discussed racial discrimination and algorithms at length, especially in Google searches, but also about how algorithms were able to carve out a false reality, shut off to the world within our filtered bubbles. In fact, these lines of code, precisely "because they are written by people, can contain all the prejudices of the people who develop them", argued Kelly McBride of the Poynter Institute during a telephone interview published in Prismo Magazine.

Six years later, although there is greater awareness of this problem, it has clearly gotten worse. Algorithms have become increasingly powerful, reinforced by machine learning programs and artificial intelligence; the disinformation problem made a major mark during the 2016 American presidential elections that brought Donald Trump to the White House -boosted by the interference of the Russian government – then it was increasingly refined using AI systems and deep fake techniques. Governments – apart from the European Union – have not done much to regulate these systems, leaving room for a completely deregulated market.

It is quite clear that journalism continues to be a fundamental tool for keeping power – both public and private – in check, evaluating its transparency, credibility, and more generally its work. And it is equally reasonable to think that journalism has and will continue to make use of cutting-edge technologies (from the movable-type printing press to the telegraph, radio and television), and should begin to dialogue with artificial intelligence to be able to analyse data and conduct unprecedented investigations. A perfect example is the Pandora Papers, an investigation conducted by The International Consortium of Investigative Journalists (ICIJ) on millions of documents that led to the discovery of the real owners of 29,000 offshore companies, including leaders of governments, ministers, ambassadors, celebrities, and entrepreneurs. Without the use of programs such as Python, Fonduer, Scikit-learn, Linkourious, the two years of work would have more than tripled, diluting the impact of the investigations on the public opinion.

Moreover, as mentioned before, AI is helping journalism come back to life in local communities. Several artificial intelligence programs applied to journalism are bringing new tools to dozens of small newsrooms in the United States that can make journalists more competitive and – above all – freer to engage in more in-depth investigations and research.

Misinformation, fact-checking and artificial intelligence

Disinformation is not a new problem. In the history of human civilization, you can find dozens of examples of disinformation and false news, circulated by governments, power groups, and private companies to shift consensus, maintain power, and attack their opponents. There is fake news created centuries ago that has found a new life on the internet, even becoming part of the lexicon of politicians. A good example is the issue of immigration in Europe and the United States: right-wing politicians and other extremists have repeatedly referred to false and discredited theories such as the Great Replacement Theory and the Kalergi Plan. The former was popularized by the French philosopher Renaud Camus and claims that there is a plan by a transnational élite to replace the white population of Europe with the black one of Africa. The latter theory, on the other hand, is based on the falsity that the politician and pro-European Richard von Coudenhove-Kalergi had drawn up a secret plan in the 1920s to move Africans to Europe. Both theories are patently false and it is no surprise that – after being circulated on far-right and conspiracy websites – they were folded into political discourse by leaders such as Matteo Salvini and Giorgia Meloni in Italy, Viktor Orbán in Hungary, and Donald Trump in the United States. These same theories not only increase racial tensions within communities but have often been used by the perpetrators of mass killings such as the one that took place in Buffalo, New York, in May 2022.

With the exponential increase in fake news, distributed widely through the internet and social media, fact-checkers and fact-checking have become an important topic of debate within journalism. It is important to be very clear and eliminate the warlike language with which we speak about fake news, the fight against fake news, the war on disinformation. Fact-checkers won't win the war against fake news for one simple reason: millions of unverified news and conspiracy theories are shared by millions of people every day, too many and too fast to stop. What we can do is to stem the problem on the one hand – while accepting that disinformation as a disease of democracies to live with versus an intruder to fight – and on the other hand to focus on effective tools such as media literacy, education, and more quality journalism.

Speaking of alternative experiments to fact-checking, NewsGuard is a startup based in New York that tries to tackle the problem of disinformation in a different way: instead of debunking every single piece of fake news, it plans to use journalists to conduct analyses. of the main information sites by writing a fact sheet with an opinion in points on their credibility and transparency. Along with this approach, NewsGuard works with schools and libraries to fund media literacy projects, seeking to critically train citizens on the problem of fake news. However, despite NewsGuard stressing that its analyses are conducted by real journalists and not by algorithms, it is important to note that a central element of the startup is still the technology through which it can identify the media with greatest online engagement.

Full Fact, an English fact-checking organization, has developed a fact-check database that can be used to identify fake news and more generally is able, thanks to artificial intelligence, to compare millions of news items instantly to understand where there are signs of disinformation. The technological component is also at the centre of the Fake News Sicily project: an algorithm trained via thousands of articles to recognize a series of markers that can indicate the presence of false or biased news. The algorithm works like a traffic light: red when an article is at risk of disinformation, green when there are no worrying signals. Together with the development of the algorithm, the project envisages a media literacy program, with workshops in Sicilian universities, high schools and communities to discuss key issues, such as disinformation in the health sector and on migrants.

Conclusions

A few weeks ago, the president of Columbia University, Lee Bollinger, reminded the students and alumni of the university that we are entering a "new era of disinformation", in which the return to the skills and knowledge of universities will be a key tool to defend democracy. Together with universities – which must be able to communicate with the outside world – four other ingredients will be needed: technology that, through AI and machine learning, will give journalists all the tools to analyse increasingly complex data and unmask increasingly sophisticated systems of reality mystification; greater integration between journalist and fact-checker; an emphasis on media literacy projects, especially at the local level; all with the purpose of Solutions Journalism, evolving to provide better services to citizens and to democracy.

References

Bostrom, Nick: *Superintelligence: Paths, Dangers, Strategies*. Oxford University Press, Oxford, 2014.

D'Alonzo, Samantha / Tegmark, Max: "Machine-Learning Media Bias". *arXiv:2109.00024*, 2021, retrieved 6.6.2022 from 10.48550/arXiv.2109.00024.

GPT-3: "A Robot-Wrote-This-Entire Article. Are You Scared Yet, Human?". *The Guardian*, 8.9.2020, retrieved 6.6.2022 from https://www.theguardian.com/commentisfree/2020/sep/08/robot-wrote-this-article-gpt-3.

Graeber, David: *The Utopia of Rules: On Technology, Stupidity, and the Secret Joys of Bureaucracy*. Melville House, Brooklyn, 2015.

Ivancsics, Bernat / Hansen, Mark: "Actually, It's about Ethics, AI, and Journalism: Reporting on and with Computation and Data". *Columbia Journalism Review*, 21.11.2019, retrieved 6.6.2022 from https://www.cjr.org/tow_center_reports/ai-ethics-journalism-and-computation-ibm-new-york-times.php.

Paura, Angelo: "La politica degli algortitmi". *Prismo Magazine*, 18.01.2016, retrieved 6.6.2022 from http://www.prismomag.com/la-politica-degli-algoritmi/

Turing, Alan M.: "Computing Machinery and Intelligence". *Mind, New Series*, 59(236), 1950, pp. 433–460.

Simone Avolicino*, Marianna Di Gregorio*, Marco Romano*, Monica Sebillo*, Giuliana Vitiello*, Massimiliano Aliverti* * & Ferdinando Trapani*** * *

Geofacts: A geo-reliability tool to empower fact-checking

Abstract: In this paper, we present Geofacts, a web-based tool designed to support and enhance fact-checking services and help them to contrast the spread of fake news. Geofacts aims to facilitate the estimation of news reliability both for computer services and for human consumers by providing them with an ad hoc output. This tool uses the geographical characteristics extracted from the text and metadata present in a news to carry out a sequence of cross-checks between various typical elements of a news, such as the supposed place of the news, the area of action of the authors, the geographical origin of the IP address of the server, and the georeferencing components of the photos to calculate a geographical reliability index (GRI). This index ranges from 0 to 6, where 6 indicates a high level of reliability between the geographical features and the text content of the news, while 0 indicates no reliability or non-applicable process. Indeed, Geofacts was designed to work with news in which the geographic component is relevant, for example, for urban chronicles of episodes that happened in specific locations. On the other hand, there are contexts where the geographical component is not relevant or absent, for example, when the news is related to general football league news. Finally, Geofacts was tested on a set of news from three different specific topics from a popular news website. The results, although on a small set of topics, showed a high reliability of the algorithms used for the design and showed the Geofacts potential of supporting the contrast to the spread of fake news over the internet.

Keywords: Fake news, fact-checking, geographical analysis, text analysis

Introduction

News articles, documents and more in particular digital media often get spread accompanied by a geographical component (Gasher & Klein, 2008). This component can refer to both the content of the media and the origin of the geographical place where they were produced or captured (Struminskaya et al., 2021). For example, photos and videos captured through modern smartphones are often accompanied by metadata containing information related to latitude and longitude. These allow software applications to identify, with a certain accuracy ranging from 7 to 13 meters (Merry & Bettinger, 2019), the location where they were captured as the street and house number. Such process is called reverse geocoding (Li et al., 2017). Also, the IP addresses of the media can reveal important information regarding the geographical origin even if with less accuracy (Mirza & Karabiyik, 2021).

Nowadays, the geographical component of digital media is already widely exploited by online providers to avoid the diffusion of their content in specific geographic regions, for example, due to copyright requirements (Hoffman, 2016, Zahrádka & Schmücker, 2022). Moreover, determining the geographic focus for news articles is becoming a relevant task for media organizations and media analysis (D'Ignazio et al., 2014). Then, we argue that similar techniques may also be used to the advantage of fact-checking services.

In this work, we present Geofacts, a tool designed and developed to support fact-checking services exploiting the geographical component contained in the text and metadata of a news article.

Our tool is able to put in relation the news to locations mentioned in the text, the geographical position of its producer, of the server from which the news started spreading in the network, the locations identified in the pictures and to the supposed cities of the authors.

This kind of approach makes sense when the news deals with topics that are strongly related to a geographical place, as for example, the chronicles of a specific episode of war.

The final output of Geofacts is a *geographical reliability index* (GRI) that can be associated with the news and that can be easily interpreted by both computer services and human consumers.

Designing the prototype

The main strategies adopted to design Geofacts are:

- Text analysis to identify and extract locations mentioned in the news
- Comparing the extracted locations with the supposed location of the authors when these are available
- Checking the geographical position of the server IP and compare it with the locations mentioned in the news
- When possible, extracting the georeferences and other relevant information from the photos' metadata to compare them with the locations mentioned in the news

The Geofacts prototype was developed in JavaScript to allow a great scalability and to execute and integrate it in different platforms (Sun & Ryu, 2017).

```
else if(text.includes(" da " + cityname + " ") == true || text.includes(" da " + cityname + ", ") == true) return true;
else if(text.includes(" su " + cityname + " ") == true || text.includes(" su " + cityname + ", ") == true) return true;
else if(text.includes(" per " + cityname + " ") == true || text.includes(" per " + cityname + ", ") == true) return true;
else if(text.includes(" di " + cityname + " ") == true || text.includes(" di " + cityname + ", ") == true) return true;
```

Fig. 1: Example of grammar rules implemented in JavaScript (Source: Authors' elaboration)

It exploits geolocation services, provided by Geoapify[1], a localization platform providing APIs for services such as maps, address and location search, access to geodata, etc.

The prototype was designed to work and tested with news written in Italian language from the BlastingNews[2] website. However, it can be easily adapted to different websites or social networks platforms. To identify the locations within the text of the news, we exploited a cities dataset to compare with the terms extracted from the text. However, this type of procedure can generate false-positive results.

A false-positive result is a term recognized erroneously as a city name. For example, Napoli can be both a football team name and a city in Italy, or Martinez is commonly a family name but also a city in California. To mitigate this problem, we added identification rules based on Italian grammar. Fig. 1 shows some grammar rules developed in JavaScript, as for example, the inclusion or not of the prepositions before the city name.

Fig. 2a shows a diagram representing the cities extraction process. Its output provides the cities mentioned in the news after filtering it with the grammar rules. Fig. 2b shows a partial output of the tool.

In addition, Geofacts is able to establish the relevance of the defined cities. It is calculated as follows:

- If the city is present only in the text of the news, then the relevance is 1.
- If the city is present in the title and the text of the news or if the city is present in the description field and the text of the news, then the relevance is 2.
- If the city is present in the title, description, and text of the news, then the relevance is 3.

Fig. 3 shows a diagram representing the calculation of the city's relevance process.

Once the cities are identified, to cross-referenced the news reported by a certain author with the geo-referenced features present within the news, Geofacts

1 www.geoapify.com
2 www.blastingnews.com

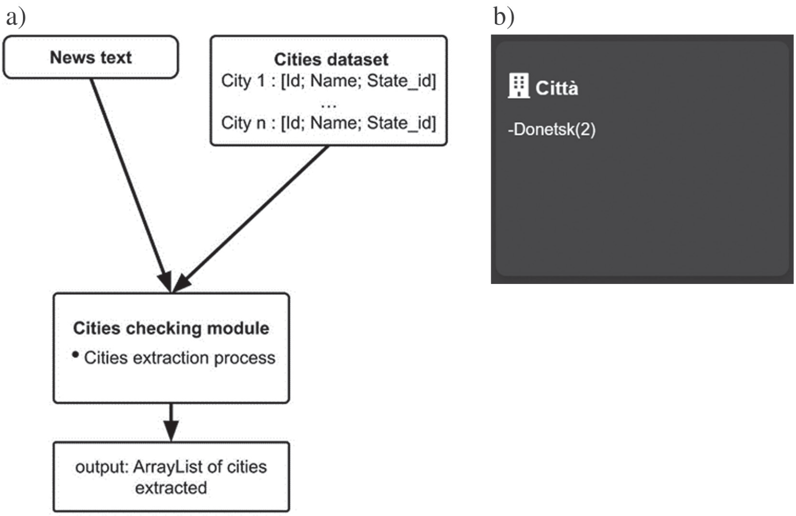


Fig. 2: The figure a represents the cities extraction process, while the figure b shows a partial output of the tool (Source: Authors' elaboration)

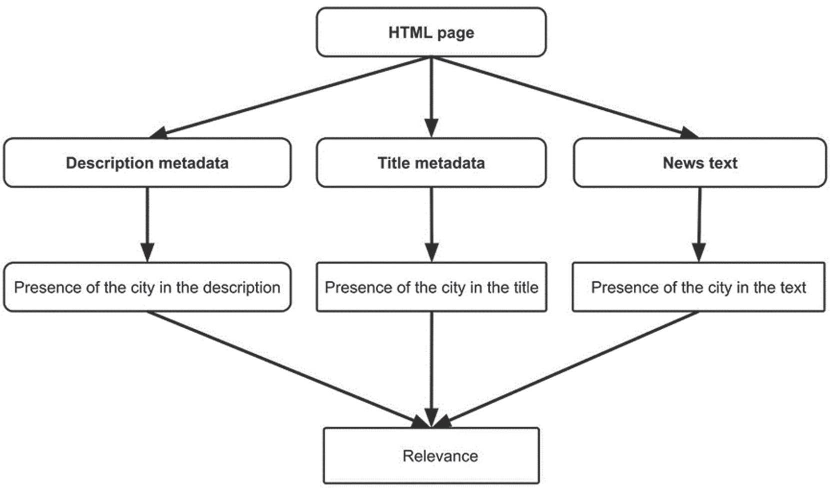


Fig. 3: Calculation of the city's relevance process (Source: Authors' elaboration)

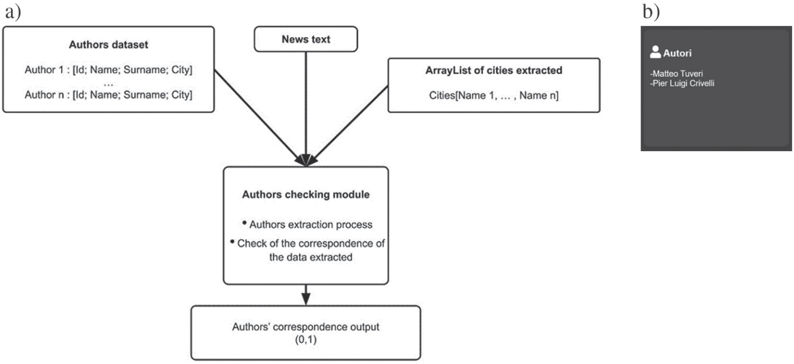


Fig. 4: The figure a represents the authors extraction process, while the figure b shows a partial output of the tool (Source: Authors' elaboration)

makes a comparison exploiting a dataset containing the authors and the relative supposed areas of action.

Once the author is recognized, the corresponding geographical feature is compared with the cities identified in the news.

Fig. 4a shows a diagram depicting the author checking process, while Fig. 4b shows the relative partial output of the tool.

Another component affecting the reliability of the news is the geographical origin of the server.

For this, Geofacts extracts the origin of the IP address of the server providing the news and then it checks it using the cities present in the text. The IP can be provided as part of the news metadata, and it is converted into geographical coordinates through a geocoding service provided by service as Geoapify. This is to obtain the necessary information and to cross-reference it with the cities previously identified. If any city in the news corresponds with the city of the IP address, the reliability of the news increases.

Fig. 5a shows the diagram depicting the IP checking process, while Fig. 5b shows the tool partial output related to the IP component.

A further component elaborated by Geofacts is related to the images in the analysed news. Geofacts extracts the URLs of the images from the metadata of the html page. Once extracted, the link is processed through the JavaScript library "exif-js", which is able to extract the Exif labels (tag) of the image. In particular, Geofacts extracts the latitude and longitude of the place where the photo was taken and then, it provides them as input to a Geoapify API to obtain the

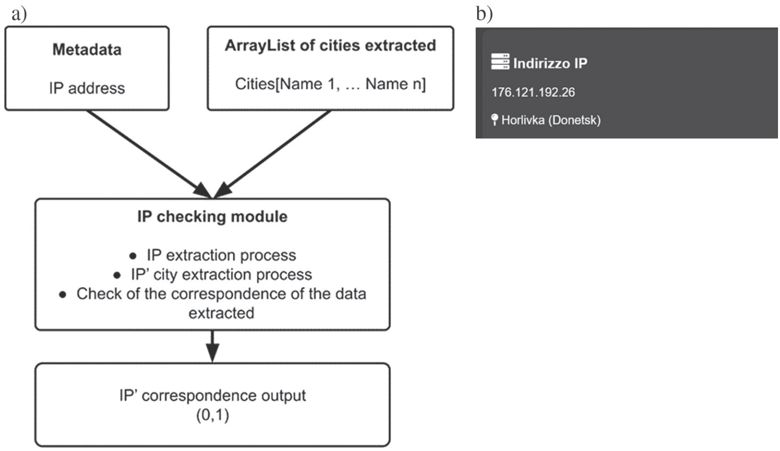


Fig. 5: The figure a represents the IP address extraction process, while the figure b shows a partial output of Geofacts (Source: Authors' elaboration)

name of the location. The resulting city from the output was then compared to the locations in the news, and in the case where one of them matches the location of the photo, it increases the reliability. Fig. 6a shows the diagram depicting the picture location extraction process, while Fig. 6b shows the tool partial output related to the IP component.

Finally, Geofacts calculates the *geographic reliability index* (GRI) by exploiting all the information extracted as described previously. Such an index is based on both the analysis of the text, cities relevance, photos, authors, and the origin of the news IP.

The index ranges from 0 to 6 and it is calculated as follows:

$$GRI = C1 + C2 + C3 + R$$

where:

C1 = matching of the author's city with some city in the text, it ranges from 0 to 1
C2 = matching of the location of the IP with some city in the text, it ranges from 0 to 1
C3 = matching of the location of the photo with some city in the text, it ranges from 0 to 1
R = it is the relevance of the city name in the news, it ranges from 0 to 3.

Fig. 7 shows a diagram describing the calculation of the *geographic reliability index*.

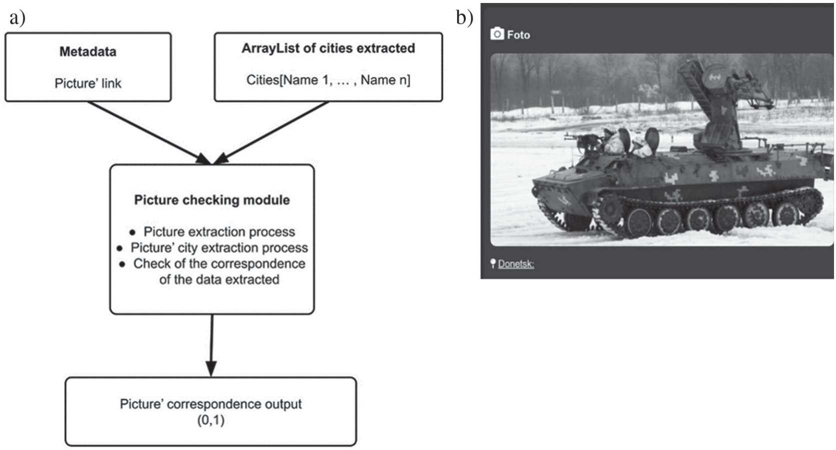


Fig. 6: The figure a represents the picture location extraction process, while the figure b shows a partial output of Geofacts (Source: Authors' elaboration)

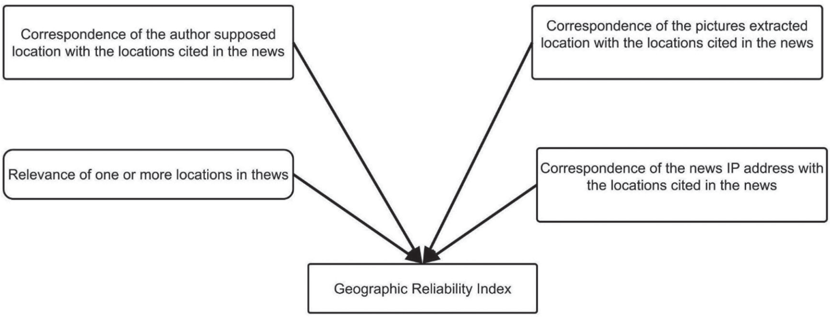


Fig. 7: Calculation of the Geographic Reliability Index process

Fig. 8 shows an example of the use of the interface designed to experiment with Geofacts. A user can select a html file containing a news item. Then, the system performs all the operations previously described, looking for locations related to the text, authors, images, and the server, and cross-referencing all of them. The output, in the box named "Esito", shows a human readable result besides an equivalent JSON format result that can be processed by computer services. There, it is possible to see the values assigned to each factor composing the index.

Fig. 8: The web interface of Geofacts allowing to experiment with html pages containing one single news (Source: Authors' elaboration)

Testing and conclusions

Geofacts was tested against a set of 300 news of different topics related to war episode chronicles, local sports events, and political protest rallies. Geofacts was able to extract the correct city names by combining them with the calculated relevance in 95 % of the cases. The only topic in which some cities were erroneously extracted is related to the local sports events, due to a huge presence of teams called with city names. This does not mean that some news would result in reliability even if it was not reliable, but just that this tool should be used with news where the geographical features are a relevant component for its content.

This preliminary test demonstrates that Geofacts has the potential to support and empower fact-checking services. However, a larger experiment, involving more topics, is needed to prove definitively its goodness and utility in a broader context. In the next future, we are going to extend Geofacts to make it work with popular social media in the form of a plugin to make it possible for users to visualize the GRI alongside the visualized content.

References

D'Ignazio, Catherine / Bhargava, Rahul / Zuckerman, Ethan / Beck, Luisa: "Cliff-clavin: Determining Geographic Focus for News Articles". In: *NewsKDD – Data Science for News Publishing, at KDD 2014*, New York 2014, retrieved 6.6.2022 from https://www.media.mit.edu/publications/cliff-clavin-determining-geographic-focus-for-news-articles/.

Gasher, Mike / Klein, Reia: "Mapping the Geography of Online News". *Canadian Journal of Communication*, 33(2), 2008, pp. 193–212.

Hoffman, Jacklyn: "Crossing Borders in the Digital Market: A Proposal to End Copyright Territoriality and Geo-blocking in the European Union". *The George Washington University Law School,* 49(1), 2016, pp. 143–173.

Li, Dapeng / Cova, Thomas J. / Dennison, Philip E.: "Using Reverse Geocoding to Identify Prominent Wildfire Evacuation Trigger Points". *Applied Geography,* 87, 2017, pp. 14–27.

Merry, Krista / Bettinger, Pete: "Smartphone GPS Accuracy Study in an Urban Environment". *PLoS ONE,* 14(7), 2019, retrieved 6-6.2022 from 10.1371/journal.pone.0219890.

Mirza, Mohammad Meraj / Karabiyik, Umit: "Enhancing IP Address Geocoding, Geolocating and Visualization for Digital Forensics". In: *2021 International Symposium on Networks, Computers and Communications (ISNCC)*, 2021, pp. 1–7.

Struminskaya, Bella / Lugtig, Peter / Toepoel, Vera / Schouten, Barry / Giesen, Deirdre / Dolmans, Ralph: "Sharing Data Collected with Smartphone Sensors: Willingness, Participation, and Nonparticipation Bias". *Public Opinion Quarterly,* 85(S1), 2021, pp. 423–462.

Sun, Kwangwon / Ryu, Sukyoung: "Analysis of JavaScript Programs: Challenges and Research Trends". *ACM Computing Surveys,* 50(4), 2017, pp. 1–34.

Zahrádka, Pavel / Schmücker, Reinold: "'We Are Sorry This Video Is Not Available in Your Country': An Ethical Analysis of Geo-blocking Audio-Visual Online Content". *Journal of Media Ethics*, 37(1), 2022, pp. 2–17.

Part II Communication and Society

Gevisa La Rocca

The mediatization of disinformation as a social problem: The role of platforms and digital media ecology

Abstract: This paper tackles disinformation along two main lines: the first by placing the problem of disinformation within the paradigm of mediatization to demonstrate that, although in other forms, the disinformation has been present in media-society dynamics; the second – which is a direct consequence of the first – by setting out the role of digital platforms and the ecology of digital media as determining factors in identifying disinformation as a social issue.

Keywords: Disinformation, digital media ecology, mediatization, public opinion, propaganda

Introduction

When dating the origin of the problem of disinformation, there is a comparison with those who reconstruct these origins starting with propaganda (Schoen & Lamb, 2012) and with those who prefer to trace the earliest appearances of the term (Bittman, 1985; Davis & Bittman, 1986), which was not seen in English dictionaries before 1939 (Pacepa & Rychlak, 2013). In both cases, this English noun, consisting of the Latin prefix dis- and the word information, refers to the inverse use of information as a resource, including as it does, the removal of useful information or the act of deliberate content manipulation to influence public opinion. Paraphrasing Bateson (1972), if information is the "difference that makes a difference" – in other words, those signals those humans care about, that have an impact – disinformation is information whose contents have been manipulated with the aim of producing a difference capable of orienting the choices of individuals according to the intentions of the communicator.

Its use, in many documents, can be found in the propaganda strategies used by the Stalin regime (Shultz & Godson, 1984), and it is therefore considered a translation of the expression "Russian dezinformatsiya" (Pacepa & Rychlak, 2013), which is the name of a KGB black propaganda department (Jowett & O'Donnell, 2005). In the United States, it became established in 1986, following actions undertaken by the Reagan administration to combat the disinformation activities of Libyan leader Muammar Gaddafi (Biagi, 2015).

Essentially, what is occurring today by means of information disorder (Wardle & Derakhshan, 2017) such as a return to the strong effects of media power is nothing more than mediatization of the old processes of circulating information for manipulative, persuasive ends. In fact, when looking at disinformation as a social problem, which in turn generates other social problems, it is possible to consider it as "any condition or behaviour that has negative consequences for large numbers of people and that is generally recognized as a condition or behaviour that needs to be addressed" (Barkan, 2016, p. 2).

This paper, therefore, will be looking at two main lines: the first by placing the problem of disinformation within the paradigm of mediatization to demonstrate that, although in other forms, it has been present in media-society dynamics; the second – which is a direct consequence of the first – by setting out the role of the platforms and of the digital media ecology as determining factors in identifying disinformation as a social issue.

It is a question of applying concepts used elsewhere also within the sphere of studies on disinformation. The first of these is mediatization, considering how the presence of the media is a structural condition in social, cultural, creation and knowledge-sharing processes. By using mediatization we are able to abandon a linear vision that links the media with society on a cause-effect continuum and instead embrace a circular approach (Serrano-Puche, 2021) that is interested in how "media have become integrated into the fabric of culture and society and thereby condition and influence social practices, at the same time as media are influenced by the particularities of the contexts within which they are embedded" (Hjarvard, 2017, p. 17).

The second is a social issue that, in this work is developed following the approach of Blumer (1971) in identifying the states that a social condition or phenomenon passes through before becoming a social problem and placing alongside it the constructionist viewpoint of Kitsuse and Spector (1973), who guide us in understanding how, through the formulation of value judgements changes perception of a social condition within the community.

The mediatization of disinformation

In the last few years, analysis of relationships between media and social institutions has continued to see itself as a field of study that is recognized in the approach to mediatization. It is a thread that stands out from the one relevant to media effects because it is at a higher level of abstraction, which has to do with the relationship between changes in communication and the media and social and cultural transformations (Hepp et al., 2015). In this sense, mediatization can be read, first and foremost, taking into account the media-related side of studies that recall authors such as McLuhan (1964), Innis (1950), Ong (1982) e Meyrowitz (1995), like a meta-process of media-influenced cultural and social transformation, to be analysed with development in mind (Boccia Artieri, 2015), on a par with forms such as urbanization, globalization or individualization (Krotz, 2007). Likewise, mediatization refers to the ability of the media to circulate its own formats within the real world, according to the tradition of studies by Altheide and Snow (1979).

Within the mediatization process, Hjarvard (2013) distinguishes between a direct, or strong, form and an indirect or weak form of mediatization. Direct mediatization refers to situations where an activity, previously unmediated, is changed into a mediated form. Indirect mediatization occurs when a specific activity is increasingly influenced with regard to its form, content, and organization through media symbols, mechanisms, or methods. Since the indirect and direct forms of mediatization often work together, it is not always easy to distinguish them. Direct mediatization shows how a given social activity can be replaced or transformed into mediated forms by unmediated activities, and in those cases, it is quite simple to establish the "before" and "after", and to look at the differences. Where the media becomes a necessary interface for social activities, then it is a question of dealing with a form of mediation (La Rocca, 2018). As a result, indirect mediatization of an activity or social sphere will be more subtle in character with a general increase in the dependency of social institutions on the resources and authority of the media, which have also become a social structure (van Dijck et al., 2018).

In and of itself, mediatization can be considered a macro-social process, since its influences are visible in every sphere of society (Asp, 1986; Mazzoleni & Schulz, 1999; Hjiarvard, 2013); in applying it to disinformation processes, mediatization is considered – in this paper – from a specific perspective and at a meso-level, i.e., its incidence within a specific sphere – the digital media ecosystem, where the process and practices of disinformation have increasingly taken hold.

The passage of the problem of disinformation from a direct to an indirect form guides us in applying an historic-evolutionary perspective of the phenomenon, where the form of direct mediatization marks the passage from rumours (Kapferer, 1990) to propaganda (Lasswell, 1927, 1971); the indirect form appears with the transfer of propaganda and rumours into information disorder (Wardle & Derakhshan, 2017). It is equally evident that the current interconnection of the media system shows the existence of a continued interchange between the two forms and that their distinction is useful and simplifying in a diachronic analysis and nevertheless, point to the existence of hybrid forms when a synchronic perspective is brought into play.

When identifying the characteristics of the rumours that persist within information disorder today, we can first and foremost count the fact that this is unofficial information, with a pragmatic interest, which spreads through the social body and brings in new elements concerning a person or fact linked to topical information (Kapferer, 1990). A specific characteristic of rumours is that it is difficult to distinguish whether they are true or false; this is because when news is spread by word of mouth, checking how true it is works to the detriment of the trust placed in those who are communicating it. Given its unofficial nature, a rumour proposes a news item that the public was not supposed to know and this is what makes it interesting: because it is a form of countervailing or bottom up power (Kapferer, 1990). Rumours are defined based on three things: source, transmission process, and content. The source may be an expert, understood as someone well-informed, or even the community, in its least personal form of "people are saying". These two sources leverage different motivations when they ask our participation in the rumour. When looking at the well-informed individual seeking to convince or persuade someone to believe a rumour, it is necessary to consider them as an opinion leader (Katz & Lazarsfeld, 1955), an early adopter (Rogers, 2003), able to create trust in what they are saying. Their honesty and ability cannot be doubted, and these are what pass on the content of the communication. In the case of hearsay, the underlying reasons for taking part are different; it is not rational leverage, but rather a desire to belong socially that moves the recipient of the message to wholehearted participation. In the rumour transmission process, those who pass it on to others verbally are recognised as being close to the source. In fact, there is usually only one intermediary who separates the recipient of the rumour from the initial source of transmission; it is this closeness that discourages checks of the actual content. Rumours are also the result of a cognitive elaboration procedure of information processing. For this purpose, it is not necessary for the information to be seen as true or false by the recipient; what is needed is for it to be perceived as plausible (La Rocca, 2017). Alongside the circulation dynamics represented by word of mouth, the rumour mill is driven by means of communication that serve as powerful repeaters, whether they have created it or not.

Due to some of their characteristics, rumours are similar to fake news and in fact, they too spread quickly; their content leverages emotional aspects and they can be completely false or plausible, or they may consist of actual news but told in a false way, distorting events (Sala, 2020), and for fake news too, the cognitive criterion of plausibility applies, because the content is not subjected to fact-checking. Gili and Maddalena (2018) take the semantic sphere of fake news back to three main undertones, the first being represented by factoids, i.e., news about events that never happened and therefore, a pure form of a lie. The second, more exhaustive area consists of falsifying an event that alters or distorts real information both in terms of the quantitative aspects of an event, such as the number of people at a demonstration, or the number of deaths caused by a country during a war, an act of terrorism, or a natural disaster; the nature of an event and its origins; the qualitative characteristics of an event represented by suggesting particular interpretations of events and social phenomena. Within the second semantic sphere we have omission, which can be seen as the deliberate concealing of parts of an event, and white lies, which are lies conceived to the benefit of the person being misled. The final nucleus is represented by "manipulations that look to the complicity of the recipient, such as organised cheerleaders and rallies, or TV programmes in support of the guest of the day" (Gili & Maddalena, 2018, p. 5). As already suggested by Gili and Maddalena (2018), fake news is not a new phenomenon; it underwent a process of emphasis and alteration during the first World War, passing from within the propaganda of the regime (Lasswell, 1971) and beginning to use one-to-many communication methods guaranteed by the first means of mass communication. As explained by Lasswell (1927, p. 627) "propaganda is the management of collective attitudes by the manipulation of significant symbols", where these significant symbols are "paraphernalia employed in expressing the attitudes, and they are also capable of being employed to reaffirm or redefine attitudes". Propaganda considers the community dimension of these attitudes and acts to manipulate them in public opinion. As Lasswell already shrewdly notes about the effect of propaganda "in cultural terms, […] it involves the presentation of an object in a culture in such a manner that certain cultural attitudes will be organized toward it" (1927, p. 629).

The manipulative and intentional effects of propaganda influence the way in which the community compares and creates its own consciousness of reality, developing attitudes towards subjects and events, and acting on the basis of them.

Through a review of the characteristics of rumours, fake news and propaganda, it is possible to start by considering the characteristics that Wardle and Derakhshan (2017) attribute to information disorder. The authors using the dimensions of harm and falseness, to describe the differences between these three types of information: mis-information is when false information is shared, but no harm is meant; dis-information is when false information is knowingly shared to cause harm; mal-information is when genuine information is shared to cause harm, often by moving information designed to stay private into the public sphere (p. 5). The two authors consider three elements in information disorder: the agent, messages and interpreters; placing the three stages of information disorder: creation, production, and distribution alongside them. In expressing the aims of their analysis, Wardle and Derakhshan (2017) stress the importance of considering communication not only in the sense of the transmission of information from one person to another, but rather as the creation and sharing of representations of reality. In this way, the authors of the framework of information disorder stress the collective dimension of this phenomenon, which swings between social phenomenon and collective behaviour.

Disinformation as a social problem

Tracing the forms of mediatization of disinformation allows us to evaluate the way in which this phenomenon has played a part in the relationship between the media and public opinion over the last century, permitting us to find that, while the manipulative effect of the mass media has been signalled by different authors, it has not been able to overcome the academic confines to be perceived as a social problem by the community. For thing to be labelled social problems requires a process of shared definition that makes it possible to emerge, affecting the way in which "they are seen, for the way in which they are approached and considered, for the kind of official remedial plan that is laid out, and for the transformation of the remedial plan in its application" (Blumer, 1971, p. 301).

Although, in media history, it has been possible to trace forms of public opinion manipulation in rumours, in the manipulation of news and propaganda, what we see today in terms of information disorder occurs in a different light, which means it is becoming a social problem. In fact, if we follow the approach of Blumer (1971, p. 301) we have a social problem when, as well as the emergence of the social problem, we are faced with the legitimation of the problem, the mobilization of action with regard to the problem, the formation of an official plan of action, and the transformation of the official plan in its empirical implementation. Essentially, Blumer explains, the process of shared definition is what determines the career and destination of social problems, from their initial appearance to whatever is the end point of their course.

Information disorder was brought to our attention in the form of social problem in cases such as the referendum for Great Britain to leave the European Union (e.g., Brett, 2016), which showed how many people were badly informed or manipulated through the use of social media bots (Howard & Kollanyi, 2016) and the unlawful processing of personal data (ICO, 2018a, 2018b). The emergence of this scenario led the European Commission to recognise these critical points as a threat to democracy and as a result, to put a package of measures in place to contrast them (Nenadić, 2019).

At the same time, we saw the emergence of an antithetical approach, in addition to information disorder, the digital media ecology.

Compared to the points stated by Blumer (1971), the current moment finds us in the third stage: mobilization to action with regard to the problem, when pundits and politicians are dealing with issues concerning the characteristics of these platforms, the formulation of plans of action, and the identification of the recipients of these actions. If a social problem is able to enter in this third stage, its very career undergoes evolution and it in fact "becomes the object of discussion, of controversy, of differing depictions, and of diverse claims. Those who seek changes in the area of the problem clash with those who endeavour to protect vested interests in the area" (Blumer, 1971, p. 303). The reason today why information disorder has reached this third stage in group recognition as a social problem compared to its previous forms can be explained through Hjarvard's approach (2017) in the analysis of the relationship between the media and social contexts; Hjarvard reminds us of the contexts in which they are inserted and that the aim of mediatization is to understand "the long-term social and cultural changes related to the increased presence of media – for example, changes in political institutions and the process of political opinion formation influenced by the rise of independent news media as well as the growing use of interactive media in political affairs" (Hjarvard, 2017, p. 5).

Therefore, the use of mediatization as a paradigm of reference in this work allows us to look at these transformative processes that are placed "at the collective level and the ways in which these changes come to condition interaction and human agency in contemporary societies" (Hjarvard, 2017, p. 5). We are therefore arguing that disinformation within a wider framework of information disorder is recognised – today – as a social problem. This passage of collective perception from one state to another is guaranteed by a process of definition (claim-making) (Spector & Kitsuse, 1973), which allows specific stakeholders – known as claim-makers – to attribute value judgements and definitions to the social phenomenon so as to change our perception of it and therefore, to be able to recognise it as a collective social problem. In fact, the constructionist viewpoint explains that once a group of (social) conditions is perceived as a problem, the passage from "social condition" to "social problem" occurs for the same state of things in the perception of common sense (Spector & Kitsuse, 1973, Kitsuse & Spector, 1975). Now, trying to follow the implicit lesson from this viewpoint, it is useful to have – according to Caniglia (2017) – three focuses: how this passage occurs (from social condition to social problem), why it occurs and above all, who are the main stakeholders (who complete the designation of a condition as a problem, who accepts and ratifies this designation, who applies it in the true sense of the word) (Caniglia, 2017).

The characteristics and role of the platform in the emergence of disinformation as a social problem

The how and why of this emergence of disinformation as a social problem are to be found within the characteristics of digital platforms that are no longer just agents of socialization but actual social structures within which the actions of individuals and the marketplace are developed. They represent a "space" inside which the actions of individuals take shape: the platforms are an easy-access space for individuals and incorporated within their everyday time. The power of these platforms is set out over different levels and significantly affect people by allowing penetration of the effects of disinformation, in the usual sense of the term. To understand how this can happen, it is enough to consider the nature of these platforms and the generation of their ecosystem.

Today we need to consider platforms as the new "custodians of the Internet" (Gillespie, 2018), "since they are social subjects that have become hegemons in the Internet space, and they are both technological structures and environments that host economic and social relations, shaping a new information, communication, and consumption ecosystem" (Boccia Artieri et al., 2021, p. 224). Thus, platforms mediate between those who produce content and services and those who want to consume them, intertwining different operational levels. Following the approach social shaping of technology, we can interface three distinct levels of operations (Boccia Artieri et al., 2021):

- "technological tools, employed by users (including journalists, advertisers, politicians, etc. as well as news organizations, brands, parties, etc.) to fulfil specific goals;
- social platforms or spaces where "networked publics" participate in processes of both public and private communication and information exchange;
- commercial organizations that make money from advertising and the commodification of users' data (Paulussen et al., 2017, p. 429)".

This transformation places us in front of a process of "platformization" (Helmond, 2015) that "has saturated every area of the web and in which institutional and non-institutional actors move, carrying out a new intermediation function" (Boccia Artieri & Marinelli, 2019); it is this new intermediation that structures the information and commercial flow through the use of users' behavioural data, subjecting them to the logic of algorithms (Boccia Artieri et al., 2021). What we are witnessing is, on the one hand, the rise of the platform as the dominant infrastructure and economic model (Zuboff, 2019) of the web and, on the other, the convergence with social media, as platforms, in building an increasingly integrated ecosystem. To enable this process, the tech companies have operated on dynamics relating to decentralization in data production and re-centralization of data collection, aiming at: making the external data "platform ready", making internal data useful for third-party development.

"Therefore, the effect of platformisation takes on a de facto political nature" (Boccia Artieri et al., 2021, p. 224), since in making external data suitable for the platform, it gains greater control over how the contents appear when they are shared. We are faced with what Helmond (2015) defines as the "double logic of platformization":

"This double logic is operationalized through platform-native objects such as APIs, social plugins, and the Open Graph, which connect the infrastructural model of the platform to its economic aims." (Helmond, 2015, p. 8).

In practice, the platforms provide a technological framework on which others are led to operate and the data produced by others becomes readable by the platforms that can use them in a useful way for their own economic model (Boccia Artieri et al., 2021). It is in this context that platform studies have taken a more critical view in recent years, as in the book *The Platform Society: Public Values in a Connective World*, in which the authors (van Dijck et al., 2018) claim that there is:

> "the inextricable relation between online platforms and societal structures. Platforms do not reflect the social: they produce the social structures we live in it" (van Dijck et al., 2018, p. 24).

"They therefore intervene on the way of defining social bonds through forms of connection that mix social norms and socio-technical norms typical of online environments (van Dijck, 2013), creating a symbolic field and digital cultural practices that delimit specific ways of relating – often distinct from those offline – and which preside over new processes of signification of being together (Boccia Artieri & Farci, 2020, p. 225)".

What we are faced with, as set out here with the aid of literature on platformization, is an increasing encroachment of these platforms into political, economic and social life, along with a legal constraint regarding their governance (van Dijck, 2021). Platforms are social structures that branch into markets and politics, and which escape government control. The American Big Tech companies – together with the disinformation they fuel – have become a social problem because they now supersede the economic powers of nations; their influence arguably surpasses the political clout of elected governments and administrations when it comes to regulating democracies and civic life (Moore, 2018; van Dijck, 2021). Borrowing the theorem of Thomas and Thomas (1928), which states that “If men define situations as real, they are real in their consequences”, we can state here that “if platforms define certain situations as real, they are real in their consequences”, as the prolific literature on post-truth has shown (e.g., Maddalena & Gili, 2020; Colombo, 2022). The question becomes who controls the platforms while they are controlling the definition of situations, constructing disinformation and as a result, how to shore up their power. Van Dijck points out the lack of an holistic approach to platform governance, which is what is actually needed when they have become hierarchical ownership structures that control and redistribute data, information, and orientate public opinion, influencing voting decisions, the collective behaviour of individuals, and generating an asymmetry in the power balance between citizens and the information systems of governance. In these observations of van Dijck, we can begin to trace those who, in their dual role as academics producing value judgements on the conditions observed and the stakeholders identified as subjects in charge of solving social problems, i.e., supranational public bodies.

The digital trails that users voluntarily or involuntarily leave within digital platforms generate a new economy, known as data colonialism (Couldry & Mejias, 2018), where this digital information represents the fuel of the new economy. And like any fuel, this produces pollution, i.e., the data and information it contains are able to alter the balance of the ecosystem, not only in digital but also in human terms, because they represent information able to influence others and to degrade public interest and assets. This plundering of digital data produces a new form of pollution – that of data – and to stem this new form of pollution, it is necessary to overcome private solutions because on a par with industrial pollution, the external effect of data pollution attacks the whole human ecosystem. Data pollution creates public damage and since specific individuals are harmed, it becomes difficult to identify the cause or even the extent of the social damage (Ben-Shahar, 2019).

To make the dynamics of platform society and its stakeholders more visible, van Djick (2021) suggests the metaphor of the tree that sees information systems as complex structures for which the operational power is exercised through interdependent, hierarchical levels, which produce intricate layers that are complex to unravel; just like the roots of trees weave together and become thicker, they extend visibly and invisibly above and below ground, horizontally and also vertically. The layered but integrated form of a tree reflects the dynamics of platform society: vertical integration, infrastructuralisation, and cross-sectorisation and it contributes to making platform ecosystem geometry visible. If we look at the platform tree from roots to leaves, we can see the role of digital infrastructures that all lead to the trunk of intermediate platforms (think of the Big Five), which branch out into industrial and social sectors, which all cultivate their own branches and leaves. "The tree metaphor emphasizes how platforms constitute "living" dynamic systems, always morphing and hence co-shaping its species. […] Each tree is part of a larger ecosystem – a global connective network driven by organic and anorganic forces" (Van Djick, 2021, p. 2805). This is why the intervention plan also needs to be branched and cross-sectorial.

The social problem caused by platforms has become visible, tangible as an attack on democracy (e.g., Schia & Gjesvik, 2020) and has been recognized by the community at a precise historic and social moment, our time. When defining the social problem – following Blumer's outline (1971) – the need begins to emerge for the "formation of an official plan of action", setting out the social criteria that can fill the gap in the global governance of our time, considering that the challenges faced are systemic, integrated into the architecture of digital media markets. Alongside it is the demand to formulate public policy plans that also need to be supranational and holistic (Owen, 2019), since it is not possible to consider the problem of platforms from a single point of view and from a perspective that moves along a strictly national dimension.

The characteristics and role of digital media ecology in outlining disinformation as a social problem

Analysis of platform characteristics and the ecosystem that they have generated makes it possible to identify the process of defining the social problem of disinformation according to this outline: the media are environments; the branching out of platforms produces an ecosystem; the value judgements that accompany the description of disinformation processes are defined as pollution, and it is for this reason that possible solutions need to be identified. At this point, we can begin to set out the combination of value judgements that construct the social problem of disinformation as an assumption of digital pollution and which we bring together here under the umbrella of digital media ecology, which has its roots in media ecology that wants to be set out as a specific approach to the digital media ecosystem. Digital media ecology considers the digital ecosystem as a whole, with all of its inhabitants and, from this perspective, brings all of the instances, regardless of the characteristics and the level at which it positions itself as claim-maker and broadens the perspective theorized by Ruotsalainen and Heinonen in 2015, because the platforms have surpassed the characteristics of the Internet on which their proposal was built.

The metaphor for media ecology was used for the first time during a convention by Postman (1970), who said that "the first thing to be said about media ecology is that I am not inventing it. I am only naming it" (p. 161); in fact, it is doubtless inspired by the works of McLuhan (1964). As reconstructed by Strate (2003) in his revision of media ecology, for Postman, the question is stressing that it consists of the "study of media as environments" (Postman, 1970, p. 161), explaining that the main concern is "how media of communication affect human perception, understanding, feeling, and value; and how our interaction with media facilitates or impedes our chances of survival. The word ecology implies the study of environments: their structure, content, and impact on people" (p. 161). Therefore, in his work formalising media ecology, what interests Postman (2000) is the interaction between the media and individuals and the way in which this gives a culture its character, contributing to maintaining a symbolic balance with the culture itself. The issue being dealt with today compared to the digital environments, adds to the methods of interaction identified by the first tradition of media ecology, the traditions linked to individual-individual and which make the character of its content so complex, because for each piece of news, it is possible to identify fake news and for every opinion, a counter opinion (Colombo, 2020). Additionally, the platforms have the capacity to read human behaviour and to use these data to profile users and create customised content. The power of platforms is no longer exercised on content, as happened with traditional media; this power is now used on people's behaviour as conditioning and as control over users through surveillance of their online behaviour (van Dijck, 2014). It is obvious that we need to review the construct of media ecology, placing it in a current context. For this reason, we have preferred to use digital media ecology, also distancing it from the media ecology platform. Using digital media ecology, we want to take into account not only platforms but also the other actors involved in maintaining or disturbing the digital ecosystem, such as individuals, public institutions and markets. In fact, platform media ecology only contains new social structures, excluding the dimension of individual action and would open the problem of conflation, i.e., one-dimensional approaches that are characterised by conflation, a fusion upwards, downwards, or towards the centre of the issue individual versus society. It is an old and thorny dilemma, interpretable in almost a Hamletic sense, that is if the change is to be attributed to structures, to the individual or action, and in the untangling of this dilemma traditional "conflationists" have opted for one or the other from time to time, putting aside the idea, the possibility of a sociological dualism, in which the different aspects refer to different elements of social reality (Archer, 1995).

Digital media ecology allows us to look at disinformation from a relational perspective that involves multiple stakeholders, and to see digital pollution as a practice that is triggered by the relationships produced by the actions of the different actors populating the digital ecosystem. Thus, we can look to the platforms, institutions, markets, media, media professionals, individuals and all those who inhabit this ecosystem for whatever reason. The dimensions of Kitsuse and Spector (1973, 1975) intersect with Blumer's call to arms and formulation of plans of action (1971) identifying the requests of claim makers.

For every macro-type of digital pollution that contributes to generating disinformation or to fuelling information disorder, we can identify a digital ecology practice.

If we start with users, and therefore, with individuals, what they produce can fall within misinformation and therefore, in the sharing of false information but without the intention of causing damage. This may occur because online news, whether in the form of articles or posts, is often only read as far as the title, without checking the content and therefore helping to spread rumours. To combat this form of digital pollution, the aim is to develop digital skills; these include digital information and digital content that fall within the range of action of media literacy and which have shown themselves to be effective in reducing pollution from fake news (Mason et al., 2018; Adjin-Tettey, 2022). Out of the subject appointed to implement these types of digital skills, we first of all find school as a public institution to which supranational institutions delegate this activity, formulating specific guidelines.

Disinformation in the true sense of the term is what is produced by the "bad actors" in the information industry (Ong, 2020), who can generate moral panicky rage-baiting. These include: those who produce the news and those who circulate this type of news, influencers, paid armies of trolls, and bots. Here, actions to maintain the equilibrium within the digital ecosystem move along two main lines: the request for regulation by public actors, and the implementation of competence by users. Faced with this manipulation effects, the knowledge intermediaries need to be able to trigger self-reflection on the challenges faced by research into disinformation (Ong, 2020), because alongside "bad actors" there are also "bad skills". Therefore, it is necessary to "pay more attention to what matters" (Solnit, 2019), and in spite of this, we need to slow down on our digital consumption. The proposal for slow consumption of digital content echoes the practices of slow food, which invites us to take a break before consuming, a moment in which to contemplate what will be consumed, to check its origin and to be present with ourselves during the tasting.

There are forms of macrostructural pollution regarding information, identified as external effects. These are represented by data pollution and market pollution and are linked to the collection of personal details from users; these data, once aggregated, will be used to map out profiles for behaviour and consumption, and for which co-actions are required of government bodies. As already stressed by van Dijck (2021), we need to develop an integrate approach among the different institutions and supranational dimensions. Maintaining the balance for the digital platform ecosystem takes the cooperation of all its inhabitants.

Conclusions

Disinformation is a condition that has accompanied the relationship between the media and public opinion and continues to do so; nonetheless, it has never quite so overbearingly influenced political and economic life, or the choices of individuals as it is doing now, in the current human-digital ecosystem.

The mediatization paradigm has allowed us to look at this problem from an evolutionary perspective and to root the effects of the media within the environment, within which they are inserted (see Fig. 1). This allows us to consider: (1) disinformation as a social issue; (2) the current characteristics of the digital media ecosystem; (3) proposed correction practices from the ecology of digital media.

Without doubt, penetration in the common sense of the problem of social and digital pollution comes not only from the action of claim-makers but also from the events that have affected the entire planet over the last three years; suffice it to think of disinformation linked to the Covid-19 pandemic, which led to an infodemic disorder (La Rocca et al., 2022) or to the events of war in Ukraine. The result has been a government-media distrust spiral (Edelman, 2022), weakening two of the main institutions on which people have always relied to learn the truth.

Disinformation is no longer a condition or a social phenomenon; today it has earned the definition as a social problem because, in the common sense in turn it refers to other categories of social problem: being defrauded, losing one's data, finding private photographs published on social media, letting oneself be insulted, purchasing misleading products, not understanding the way in which the world is going.

Disinformation as a social problem					
	Mediatization		Platformization		Ecology of digital media
Framework	❖ Circular vision of the relationship between media and social contexts (Hjarvard, 2017). ❖ Direct and indirect forms of mediatizaton (Hjarvard, 2013). • Propaganda (Lasswell, 1927) • Rumors (Kapferer, 1990) • Fake News (Gili and Maddalena, 2018) • Information disorder (Wardle and Derakhshan, 2017).	*How and why*	❖ Platforms mediate between those who produce content and services and those who want to consume them, intertwining different operational levels (Paulussen et al., 2017). ❖ Custodians of Internet (Gillespie, 2018). ❖ The platforms are social structures(van Dijck et al., 2018). ❖ Post-truth (Maddalena and Gili, 2020). ❖ Data colonialism (Couldry and Mejias, 2018). ❖ Data pollution (Ben-Shahar, 2019). ❖ Attack on democracies (Nenadić, 2019).	*Who*	❖ Media ecology (Postman, 1970). ❖ Ecological approach to the media (Colombo, 2020). ❖ Media literacy and fake news (Mason et al., 2018; Adjin-Tettey, 2022). ❖ Disinformation and bad actors (Ong, 2020). ❖ Slow down in the use of digital content (Solnit, 2019). ❖ Implementation of digital skills. ❖ Holistic plans for platform governance (Owen, 2019; Van Djick, 2021).

Fig. 1: Theoretical framework and elements of disinformation as a social problem

If initially, the question of digital disinformation has been raised by small groups: academics, public institutions, with the former embarking on a course of research, and the latter considering the national strategic level, to date, the extent of these questions and actions has expanded, moving towards the incorporation of systemic approaches and disclosure of digital competences.

References

Adjin-Tettey, Theodora Dame: "Combating fake news, disinformation, and misinformation: Experimental evidence for media literacy education", *Cogent Arts & Humanities*, 9, 2022, pp. 1–17. https://doi.org/10.1080/23311983.2022.2037229

Altheide, David L. / Snow, Robert P.: *Media Logic*. Beverly Hills, London: Sage, 1979.

Archer, Margaret S.: *Realist Social Theory: The Morphogenetic Approach*. Cambridge: Cambridge University Press, 1995.

Asp, Kent: *Mäktiga massmedier: Studier I politisk opinionsbilding* (*Powerful Mass Media: Studies in Political Opinion Formation*). Stockholm: Akademilitteratur, 1986.

Barkan, Steven E. (2016). Social Problems: Continuity and Change. Saylor Foundation, retrieved 6.6.2022 from: https://open.umn.edu/opentextbooks/textbooks/141

Bateson, Gregory: *Steps to an Ecology of Mind*. Northvale, New Jersey London: Jason Aronson Inc., 1972.

Ben-Shahar, Omri: "Data pollution", *Journal of Legal Analysis*, 11, 2019, pp. 104–159.

Biagi, Shirley: *Media/Impact: An Introduction to Mass Media*. Boston: Cengage Learning, 2015.

Bittman, Ladislav: *The KGB and Soviet Disinformation: An Insider's View.* Washington: Pergamon-Brassey's, 1985.

Blumer, Herbert: "Social problems as collective behavior", *Social Problems*, 18(83), 1971, pp. 298–306.

Boccia Artieri, Giovanni: "Mediatizzazione e network society: un programma di ricerca", *Sociologia della Comunicazione*, 50, 2015, pp. 60–67.

Boccia Artieri, Giovanni / Farci, Manolo: "Le emozioni dell'alt-right. La dimensione neoliberale e affettiva delle piattaforme", *Sociologia della comunicazione*, 59, 2020, pp. 82–105.

Boccia Artieri, Giovanni / Garcia-Bilbao, Pedro A. / La Rocca, Gevisa: "Rethinking affective polarization and sharing of emotions in digital platform ecosystems. Theories and research practices", *International Review of Sociology*, 31(2), 2021, pp. 223–230. https://doi.org/10.1080/03906701.2021.1947949

Boccia Artieri, Giovanni / Marinelli, Aalberto: "Introduzione all'edizione italiana per un'«economia politica» delle piattaforme", in J. van Dijck, T. Poell & M. de Waal (Eds.), *Platform society. Valori pubblici e società connessa* (pp. 9–21). Milano: Guerini e Associati, 2019.

Brett, Will: *It's Good to Talk: Doing Referendums Differently. The Electoral Reform Society's R*eport, 2016, retrieved 6.6.2022 from https://www.electoral-reform.org.uk/wpcontent/uploads/2017/06/2016-EU-Referendum-its-good-to-talk.pdf

Caniglia, Enrico: "Introduzione. Problemi sociali e problemi sociologici", in J. Kitsuse & M. Spector (Eds.), *Sociologia dei Problemi Sociali*. Milan: Mimesis, 2017.

Colombo Fausto: *Ecologia dei media*. Milan: Vita & Pensiero, 2020.

Colombo, Fausto: "An ecological approach: The infodemic, pandemic, and COVID-19", in K. Kopecka-Piech & B. Łódzki (Eds.), *The Covid-19 Pandemic as a Challenge for Media and Communication Studies* (pp. 35–48). London: Routledge, 2022.

Couldry, Nick / Mejias, Ulises A.: “Data colonialism: Rethinking big data’s relation to the contemporary subject”, *Television & New Media*, 20(4), 2018, pp. 336–349. https://doi.org/10.1177/1527476418796632

Davis, Curtis Carroll / Bittman, Ladislav: “The KGB and Soviet disinformation: An insider’s view”. *Naval War College Review*, *Naval War College Review*, 39(4), 1986, pp. 132–133. retrieved 6.6.2022 from https://digital-commons.usnwc.edu/nwc-review/vol39/iss4/22 Edelman, R. (2022, January 18). Breaking the vicious cycle of distrust. Retrieved: https://www.edelman.com/trust/2022-trust-barometer/breaking-vicious-cycle-distrust.

Edelman, Richard (2022, January 18): *Breaking the Vicious Cycle of Distrust*, retrieved 6.6.2022 from https://www.edelman.com/trust/2022-trust-barome ter/breaking-vicious-cycle-distrust

Gili, Guido / Maddalena, Giovanni: “Post-verità e fake news: radici, significati attuali, inattesi protagonisti e probabili vittime”, *Media Education – Studi, ricerche, buone pratiche*, 9(1), 2018, pp. 1–16. https://doi.org/ 0.14605/MED911801

Gillespie, Tarleton: *Custodians of the Internet. Platforms, Content Moderation, and the Hidden Decisions That Shape Social Media*. New Haven: Yale University Press, 2018.

Helmond, Anne: “The platformization of the web: Making web data platform ready”, *Social Media + Society*, 1(2), 2015, pp. 1–11. https://doi.org/10.1177/2056305115603080

Hepp, Andreas / Lunt, Peter / Hartmann, Maren: “Communicative figurations of the good life: Ambivalences of the mediatization of homelessness and transnational migrant families”, in H. Wang (Ed.), *Communication and ‘The Good Life’* (International Communication Association Theme Book Series, vol. 2, pp. 181–196). New York: Peter Lang, 2015.

Hjarvard, Stig: *The Mediatization of Culture and Society*. New York: Routledge, 2013.

Hjarvard, Stig: “Mediatization: Critical Theory Approaches to Media Effects”, in P. Rössler, C. A. Hoffner, & Zoonen, L. (Eds.), *The International Encyclopedia of Media Effects* (pp. 1221–1241). Hoboken: John Wiley & Sons, 2017. https://doi.org/10.1002/9781118783764.wbieme0107

Howard, Philip N. / Kollanyi, Bence: “Bots, #StrongerIn, and #Brexit: Computational Propaganda during the UK-EU Referendum”, *ArXiv160606356 Phys*, 2016, retrieved 6.6.2022 from https://arxiv.org/abs/1606.06356

Information Commissioner’s Office (ICO) (2018a, July 11): *Investigation into the Use of Data Analytics in Political Campaigns* [Report to Parliament], retrieved 6.6.2022 from https://ico.org.uk/media/action-weve-taken/2260271/invest igationinto-the-use-of-data-analytics-in-political-campaigns-final-20181 105.pdf

Information Commissioner's Office (ICO) (2018b, July 11): *Democracy Disrupted? Personal Information and Political Influence*, retrieved 6.6.2022 from https://ico.org.uk/media/action-wevetaken/2259369/democracy-disrup ted-110718.pdf

Innis, Harold A.: *Empire and Communication*. Oxford: University of Oxford Press, 1950.

Kapferer, Jean-Noël: *Rumors Uses, Interpretations, & Images. Uses, Interpretation and Necessity*. New York: Routledge, 1990.

Katz, Elihu / Lazarsfeld, Paul F.: *Personal Influence: The Part Played by People in the Flow of Mass Communications*. Glencoe: Free Press, 1955.

Kitsuse, John I. / Spector, Malcom: "Toward a sociology of social problems: Social conditions, value-judgments, and social problems", *Social Problems*, 20(4), 1973, pp. 407–418.

Kitsuse, John I. / Spector, Malcom: "Social problems and deviance: Some parallel issues", *Social Problems*, 22(5), 1975, pp. 584–594.

Krotz, Friedrich: *Mediatisierung: Fallstudien zum Wandel von Kommunikation*. Wiesbaden: Verlag für Socialwissenschaften, 2007.

Jowett, Garth / O'Donnell, Victoria: *Propaganda and Persuasion*. Los Angeles: Sage, 2005.

La Rocca, Gevisa: "Cantami, o diva. La bazzecola del dicunt in rete", *Sociologia della Comunicazione*, 53, 2017, pp. 56–74. https://doi.org/10.3280/SC2017-053005

La Rocca, Gevisa: *Nuove forme di comunicazione sociale*. Roma: Carocci, 2018.

La Rocca, Gevisa / Carignan, Marie-Eve / Boccia Artieri, Giovanni: *Infodemic Disorder: Covid-19 Coping Strategies in Europe, Canada and Mexico*. London: Palgrave, 2022.

Lasswell, Harold D.: "The theory of political propaganda", *The American Political Science Review*, 21(3), 1927, pp. 627–631.

Lasswell, Harold D.: *Propaganda Technique in World War I*. Cambridge: The MIT Press, 1971.

Maddalena, Giovanni / Gili, Guido: *The History and Theory of Post-Truth Communication*. Berlin: Springer, 2020.

Mason, Lance / Krutka, Daniel / Stoddard, Jeremy: "Media literacy, democracy, and the challenge of fake news", *Journal of Media Literacy Education*, 10(2), 2018, pp. 1–10.

Mazzoleni, Gianpietro / Schultz, Winfried: "Mediatization' of politics: A challenge for democracy?", *Political Communication*, 16(3), 1999, pp. 247–261.

McLuhan, Marshall: *Understanding Media*. London: Routledge, 1964.

Meyrowitz, Joshua: *No Sense of Place*. New York: Oxford University Press, 1995.

Moore, Martin: *Democracy Hacked: Political Turmoil and Information Warfare in the Digital Age*. London: OneWorld, 2018.

Nenadić, Iva: "Unpacking the "European approach" to tackling challenges of disinformation and political manipulation", *Internet Policy Review*, 8(4), 2019, pp. 1–22. https://doi.org/10.14763/2019.4.1436

Ong, Jonathan C.: "Limits and luxuries of slow research in radical war: How should we represent perpetrators?", *Digital War*, 1(1), 2020, pp. 1–6. https://doi.org/10.1057/s42984-020-00006-x

Ong, Walter J.: *Orality and Literacy. The Technologizing of the Ward*. London: Routledge, 1982.

Owen, Taylor: Models for Platform Governance. Waterloo, ON, Canada: Centre for International Governance Innovation, 2019, retrieved 6.6.2022 from https://www.cigionline.org/static/documents/documents/Platform-gov-WEB_VERSION.pdf

Pacepa, Ion M. / Rychlak, Ronal J.: *Disinformation: Former Spy Chief Reveals Secret Strategies for Undermining Freedom, Attacking Religion, and Promoting Terrorism*. Los Angeles: WND Books, 2013.

Postman, Neil: "The reformed English curriculum", in A.C. Eurich (Ed.), *High School 1980: The Shape of the Future in American Secondary Education* (pp. 160–168). New York: Pitman, 1970.

Postman, Neil: "The humanism of media ecology", *Proceedings of the Media Ecology Association*, 1, 2000, pp. 10–16, retrieved 6.6.2022 from http://www.media-ecology.org/publications/proceedings/v1/humanism_of_media_ecology.html

Paulussen, Steve / Harder, Raymond A. / Johnson, Michiel: "Facebook and News Journalism", in B. Franklin & S. A. Eldridge II (Eds.), *The Routledge Companion to Digital Journalism Studies* (pp. 427–435). London: Routledge, 2017.

Rogers, Everett M.: *Diffusion of Innovations*. New York: Free Press, 2003.

Ruotsalainen, Juho / Heinonen, Sirkka: "Media ecology and the future ecosystemic society", *European Journal of Futures Research*, 3(9), 2015, pp. 1–10. https://doi.org/10.1007/s40309-015-0068-7

Sala, Maurizio: "Dall'epidemia all'infodemia: le fake news all'epoca del Coronavirus", in M. Sala & M. Scaglioni (Eds.), *L'altro virus. Comunicazione e disinformazione al tempo del Covid-19* (pp. 137–143). Milan: Vita & Pensiero, 2020.

Schia, Niels N. / Gjesvik, Lars: "Hacking democracy: Managing influence campaigns and disinformation in the digital age", *Journal of Cyber Policy*, 5(3), 2020, pp. 413–428. https://doi.org/10.1080/23738871.2020.1820060

Schoen, Fletcher / Lamb, Christopher J.: *Deception, Disinformation, and Strategic. Communications: How One Interagency Group Made a Major Difference, Institute for National Strategic Studies, Strategic Perspectives*, 11. Washington, D.C.: National Defense University Press, 2012.

Shultz, Richard H. / Godson, Roy: *Dezinformatsia: Active Measures in Soviet Strategy*. New York: Pergamon-Brassey's, 1984.

Serrano-Puche, Javier: "Digital disinformation and emotions: Exploring the social risks of affective polarization", *International Review of Sociology*, 31(2), 2021, pp. 231–245. https://doi.org/ 10.1080/03906701.2021.1947953

Solnit, Rebecca: *Rebecca Solnit on the Power of Changing the Narrative and Writing Our Own Stories*. CBC, 27 December 2019, retrieved 6.6.2022 from https://www.cbc.ca/radio/thesundayedition/the-sunday-editionfor-december-29-2019-1.5399598/rebecca-solnit-on-the-power-of-changing-the-narrative-and-writing-our-own-stories-1.5399614.

Spector, Malcom / Kitsuse, John I.: "Social Problems: A Re-formulation", *Social Problems*, 21(2), 1973, pp. 145–159.

Strate, Lance: "A media ecology review", *Communication Research Trends*, 23(2), 2003, pp. 3–48.

Thomas, William I. / Thomas, Dorothy S.: *The Child in America: Behavior Problems and Programs*. New York: Alfred A. Knopf, 1928.

van Dijck, José: *The Culture of Connectivity: A Critical History of Social Media*. Oxford: Oxford University Press, 2013.

van Dijck, José: "Datafication, dataism and dataveillance: Big Data between scientific paradigm and ideology", *Surveillance & Society*, 12(2), 2014, pp. 197–208. https://doi.org/10.24908/ss.v12i2.4776

van Dijck, José: "Seeing the forest for the trees: Visualizing platformization and its governance", *New Media & Society*, 23(9), 2021, pp. 2801–2819. https://doi.org/10.1177/1461444820940293

van Dijck, José / Poell, Thomas / de Waal, Martijn C.: *The Platform Society: Public Values in a Connective World*. Oxford: Oxford University Press, 2018.

Wardle, Claire / Derakhshan, Hossein: "Information disorder: Toward an interdisciplinary framework for research and policy making." *Council of Europe report*, DGI(2017)09, 2017, retrieved 6.6.2022 from https://edoc.coe.int/en/media/7495-information-disorder-toward-an-interdisciplinary-framework-for-research-and-policy-making.html#

Zuboff, Shoshana: *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*. New York: Public Affairs, 2019.

Guido Nicolosi

Collective memory and the challenges of digital journalism

Abstract: Even though journalism has always been considered distinct from history and has itself always aspired to newsworthiness, it is one of the most relevant cultural and social areas for the production and maintenance of collective memory. Journalistic information systematically and continuously shapes the way in which communities in modern societies order past events. Disintermediation and transformations in the processes of production and use of information radically challenge the methods consolidated by a centuries-old path of news-making. Particularly, the main critical question today is: can misinformation shored up by the spreading of fake news distort memory and impact negatively on people's perception of their future? This essay attempts to analyse the risks and opportunities that these transformations have introduced in the context of the production of public memory, trying to avoid apodictic readings and highlighting the ambiguity of concepts that are often in mainstream use today.

Keywords: Cultural memory, journalism, misinformation, fake-news, digital media

Introduction: Cultural memory, the public sphere and journalism

The "science of memory" emerged in the nineteenth century. Galton (1892), Bergson (1896), Ribot (1881), Freud (1901), Ebbinghaus (1913), Semon (1921, 1923): these are some of the most famous names bound up with this new scientific and philosophical orientation. Alongside these there are others who are now considered to play a key role in the understanding of the social bases of memory: Vygotsky (2007), Bartlett (1974) and, above all, Maurice Halbwachs (1925, 1950) who were the first to explicitly define memory as a social fact on the grounds that all memories are underpinned by social structures which act as a canvas on which the past which makes communication and sharing possible is depicted.

From the starting point of this era, a multiplicity of interwoven factors (scientific discoveries, technological innovations, social changes and political transformations) have led to the past taking on functional symbolic importance in individual and collective identity shaping. Subsequent studies on collective, social and cultural memory (Leroi-Gourhan, 1964, 1965; Le Goff, 1977; Anderson, 1983; Nora, 1984; Assman, 1997; etc.) have made it a fully-fledged research sphere with its own specific scientific and academic legitimacy: memory studies.

In brief, we can distinguish between three conceptual fields of reference (Guzzi, 2011): “collective”, “socia”’ and “cultural” memory. The first denotes groups’ memory heritage characterised by powerful identity bonds – family, religious community, class. The “social memory” concept, on the other hand, denotes a wider communication sphere encompassing the arena within which the various collective memory discourses vie for relevance and plausibility. To a considerable extent this corresponds to the term “public memory”. Lastly, “cultural memory” denotes the past’s influence over the present via symbolic legacies, rites and traditions.

The media and journalists play an extremely significant part in the public-memory-shaping process. Drawing on Habermas’s thought, public memory can be considered to be a public sphere memory (Habermas, 2005). In some ways the public sphere is itself memory, as Paolo Jedlowski rightly argued (2007), as it only exists as a constant and diachronic dialogue between ideas and arguments, both past and present. But this is not all. The public sphere also encompasses and elaborates past discourses, arguments and narratives which are constantly marshalled to shore up theories, back up stances and support collective ideas and so on. Public memory is thus ultimately an “image of the past under public debate”. And it performs two fundamental functions: (a) defining the “plausibility and relevance criteria” by which traces of the past are selected from the vast patrimony available to groups and societies; (b) delineating the arena in which group collective memories dialogue with one another, lose their self-referential quality and are subject to critical analysis. Jedlowski interestingly acknowledged the fundamental importance of two key issues: the selection matrix at work in public memory, which inevitably tends to exclude certain stances and theories considered marginal, and the increasingly important role played by non-rational, identity-based or imaginary symbolic arguments.

The memory-journalism bond can seem counter-intuitive. Journalism has always been considered distinct from history and has itself always aspired to newsworthiness, a quality powerfully bound up with proximity, relevance and novelty (Zelizer, 2010). However, from the late 1980s onwards, collective memory studies have devoted a great deal of attention to journalism and the role it plays in shaping memories and the collective reconstruction of the past, because it is increasingly clear that group memories are powerfully influenced by themed agendas. Media sociologists, in particular, have increasingly highlighted a persistent preference on the part of journalists for events preceding currently-under-way news items. Three aspects of the past are journalistically appealing: commemoration, historical analogies, historical contexts. In this sense journalists can certainly be said to be “memory agents” of great importance, although many journalists would probably reject such a definition.

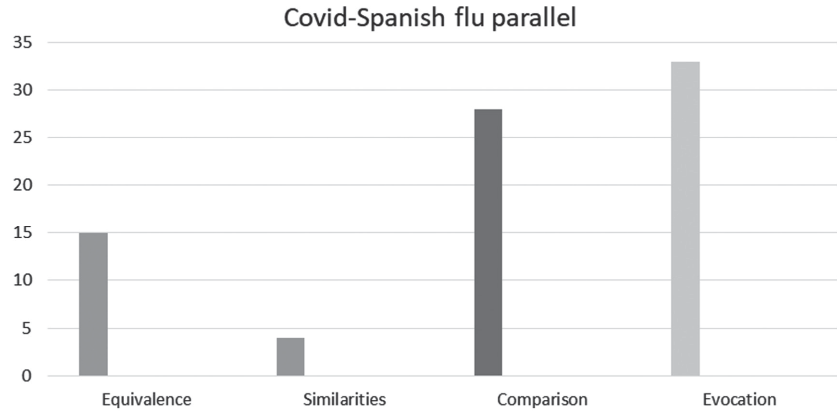
For Lang and Lang (1989) collective memory selects from a set of images of the past which retain their historic relevance by means of a re-mediation process. In this sense journalism is fundamentally important memory work. The reference to the past in journalistic narrative is a constant quest to accord meaning to the present narrative, to connect-up, suggest inferences, create reference points with which to assess the impact of a given event and its magnitude, offer analogies and supply immediate explanations. It is very frequently precisely comparison with the past that makes news stories especially appealing. In this sense, for journalists the past is a decisive implicit backdrop to draw on to highlight foreground news reporting. In other words, for journalists the past is the most important knowledge store available to them to supply explanatory readings of the present (and future). It can thus, with Lang & Lang, be said that the past is the primary furnace in which public opinion is forged[1].

Journalism and collective trauma

An important part of journalistic narrative is based on traumatic events which the public is urgently seeking interpretative frameworks for. As has now been clearly demonstrated by trauma studies there is a powerful nexus between journalism, collective memory and collective trauma (Alexander et al., 2004; Meek, 2010). The tensions and critical issues feeding into the public debate which revolves around dramatic events is a reliable memory work generation indicator. The more controversial the events – such as disasters and catastrophes – the greater the recourse to journalistic memory and past narratives. Naturally this dialogue with the past is not always accurate. Quite the opposite. It can also be misleading and dangerous.

---

1 This fertile relationship is confirmed by the experience of Bibliothèque nationale de France (BnF) which recently (2012) set up an online service entirely devoted to past media which it coined the term *retronews* for. It is a website providing free access to 1500 printed items published from 1631 to 1950. *Retronews* is both a textbook digital consultation and archive space, a research tool and fully-fledged magazine – an opportunity to find out more about history via press archives – and, at the same time, a retrospective view of current events. It is important to stress that its magazine function is shored up by important social media action which makes it a full-blown media in its own right with over 134,000 Facebook and 12,000 Twitter followers.



Tab. 1: Covid-Spanish flu parallel

An important example of this distortion potential is the Coronavirus pandemic. Over these two years of Covid-19 pandemic one of the most commonplace parallel stories has been the Spanish flu epidemic, of which there were around 500 million cases in the 1918–20 period with estimates of deaths ranging from 10 to 50 million out of a population of around 2 billion. It is a death rate which qualifies it for the title of the most serious pandemic in the history of humanity. Deaths from the Spanish flu were effectively higher than those caused by the fourteenth century Black Death, though the general population figures were then much lower.

Whilst scientific doubt has been cast on the validity of this parallel it has been widely used in the journalistic sphere. In a systematic enquiry conducted from 1 January to 31 December 2020 relating to the La Repubblica newspaper, we found a grand total of 80 articles (more than one every five days) on the pandemic in which Sars-Cov-2 was presented together with the Spanish flu directly or indirectly (Tab. 1). The analysis shows that 15 of these (just under 20 %) put the two on a par, 33 (just over 40 %) brought up the 1918 experience when referring to the Covid-19 pandemic, highlighting similarities and analogies and 28 (35 %) compared the two with a view to showing their common features. Lastly four of them brought up mild and generic similarities.

From an agenda setting mechanism standpoint (McCombs & Shaw, 1972), the cultural interpretation framework proposed would seem to be based on a significant correlation between the two phenomena in which one of the two – the

Spanish flu – is presented as a reference benchmark in a situation which was entirely new for the bulk of public opinion.

From an anthropological standpoint all this is understandable, as human beings tend, in new situations, to feel the need to "anchor" their interpretation processes to something familiar by means of an analogue-type inferential process. What is much less understandable is the decision to found rational journalistic arguments on flawed or misleading heuristics. The danger of influencing readers in the direction of a misleading, even terrifying, interpretation of the phenomenon should have fostered journalistic caution. It is, however, well known that journalism is a selective narrative practice which reconstructs the facts on the basis of pragmatic models and tools which are also the basis for common sense (Sorrentino, 2002). This is a required process if it is to be made understandable to the public as a whole. It follows that such "unintentional distortions" (Wolf, 1985), however well-meaning they may sometimes be, are always lying in wait.

Memory, communication and digital media

Psycho-social research has demonstrated that communicative interaction is fundamentally important in reinforcing cognitive memory of elements in an event on the strength of selective repetition. In other words, fact memorisation is shored up when people speak. In a correlated and inverse way, information not shored up by communication is more likely to be forgotten, a phenomenon known as RIF, i.e. retrieval-induced forgetting (Anderson, Bjork & Bjork, 1994). These inter-personal cognitive phenomena are the foundations of "mnemonic convergence" which fosters widespread agreement within groups on events. The process is a strong one as it is an in-group one, an important issue given that a considerable proportion of people now also keeps up with the news on social media today and channels such as these are based on group membership. For this reason collective, public and social memories are increasingly significantly bound up with digital platform communication.

"Media metaphors" have always featured in thinking on the functions and characteristics of memory, from at least Plato onwards. It is now networks which seem to have the upper hand. It is a highly mediated and mediatised memory, one which is encapsulated and distributed across our socio-technical practices. The use of the web via interactive, so-called Web 2.0 services and platforms enables users to generate, configure and deploy biographical, biometric and identity-based information in a public or semi-public format, in real time and in a shared and interactive way. We can speak of a new digital network memory emerging from communicative interactions which add, modify and cancel out a full-blown "living mnemonic archive" in a dynamic way.

Historically the media have shown an ability to "fix"[2] externalised human memory. The digital media, on the other hand, have new specificities worthy of attention. Aleida Assmann (2002) has identified two ways in which cultural memory works: (a) as an archive which accumulates texts, images and behavioural rules as a total horizon; (b) as current affairs which links objectified meaning with the specific contemporary context. Analysing the ways in which cultural memory accumulates in the communication context generated by digital technologies would seem to cast doubt on the binary nature of this textbook distinction, that its to say, the distinction between permanent and ephemeral, archive and narrative seems less solid and long-lasting (Hoskins, 2012). And all this as a result of the profound transformations ushered in by the advent of digital media which the academic literature has been analysing for some time, i.e. those relating to time frames, spatial considerations and mobility (Thompson, 1995), the principal categories on which the mnemonic process is founded (Di Pasquale, 2018). Hoskins (2018) speaks of an on-the-fly memory, a reconstructional version of memory in which tensions between traces of the past and current circumstances are played out. In fact, the web ensures an ultra-intense connection with the present but also, at the same time, an increasingly significant availability of historic and past materials as a cultural derivative of Anderson's "long tail" theory (2006).

With the advent of digital technologies, the archive concept requires profound reconfiguration. In a society characterised by the hegemony of an allocutive model of information flows (Van Dijk, 1999), the traditional media and the traditional elite imposed a rigid and hierarchical order on archives in space, time, rhythm and content terms. The hegemony of the conversational model of information flows frees archives from allocutive institutional restrictions and gives it a fluid, transferable and reproducible form. In many ways these same archives become media, connected up in networks straddling the public and private, freed of time and space considerations. In this framework, the traditional distinction between living and archival memory is radically

---

2 The word "fixing" needs critical examination because, as Van Dijk specified (2007), even when the mnemonic process is shored up by external media it is always interactive, selective and creative and influenced by the very characteristics of the media used as a support as well. These latter should thus not be considered neutral. Furthermore, as Neisser has argued (2008), we must be careful to attribute memory properties inherent to media.

questioned. The web does not – in contrast with TV, in all likelihood – generate an interweaving of past and present but rather a new networking and contemporary connectivity and data transfer essence. As Gitelman argued (2006), the web draws people in to reading, copying, pasting, modifying, updating and writing in a heterogeneous interpretational act context. Time is now evolving and constant, the opposite of the "punctuality" time frames of other media. The weakening of the distinction between the "past as past" and the "past as present" is especially evident precisely in the contemporary journalism field which generates "mnemonic work" through informational organisations with the most extensive available archives. To this we should add that, thanks to digital, all archives (as we saw with Retronews) have been affected by these processes, leading to the definitive erosion of the boundaries between professional and amateur journalism and the affirmation of so-called citizen-journalism (Maistrello, 2009).

Collective memory and misinformation

Today's scholars are discussing the emergence of a new phenomenon straddling the individual and the collective, the public and the private: memory sharing within groups via the social media. Within this framework the question is: can misinformation shored up by the spreading of fake news distort memory and impact negatively on people's perception of their future (Spinney, 2017)?

We have already shown that collective memory influences generational and group identities and impacts powerfully on the present. For illustrative purposes only, anthropologists Roediger and Wertsch (2008) showed that the American politicians debating the invasion of Iraq in the early noughties can be split into two groups: those who supported land invasion in the belief that Saddam Hussein had to be stopped just like Hitler before him, and those who opposed it, seeing it as a new bloody and interminable Vietnam. These were two diverse options informed by two opposing political orientations and supported by two historical precedents replete with significant symbolic implications. The same mechanism applies today to the Russia-Ukraine war and media comparisons with European appeasement at the time of the invasion of Poland by Nazi Germany.

We know perfectly well that the fake news phenomenon is not a new one. It has a long history and the history of the mass media is literally packed with fake stories some of which are very striking. Its gatekeeping system, authoritative figures and professional practices are not absolute guarantees of the quality of the finished product. The academic literature has unequivocally demonstrated the weight of unintentional distortions resulting from the mass media's

Iraq Unleashes Flood of Oil
More Scud Missiles Strike Is

By Rick Atkinson and Dan Balz
Washington Post Staff Writers

Iraq has sabotaged a Kuwaiti supertanker terminal, dumping several million barrels of oil from ships and storage facilities into the Persian Gulf and creating an environmental disaster already several times larger than the 1989 Exxon Valdez spill in Alaska, U.S. government officials said yesterday.

Military officials publicly insisted that the spill would not affect allied military operations in the Persian Gulf War, although planners privately said it could constrain options available for an amphibious assault. A visibly angry President Bush described the Iraqi action as a

Coated bird found off Kuwait, where oil is gushing from Sea Island Terminal.

stroyed most of the seven Scuds streaking toward Israel from western Iraq, but shrapnel spattered

building, killing one person and injuring about 30 others, Saudi officials said. Two more missiles fired

Pentagon briefin spokesman Pete Wil the spill as "likely to dozen times bigger million gallons dum ka's Prince Willia years ago. By late vast oil slick, whi began Wednesday southward at least oil was fouling the S

Crude oil is gushi Island Terminal ab the Kuwaiti coast, coming from stora the rest pumped t pipes from five tar the occupied Kuwa al-Ahmadi.

Bush, who hudd

Fig. 1: Article relating to the fake cormorant story during the First Gulf War

newsworthiness logics or a lack of oversight and controls, but also of intentionally misleading stories designed to further a specific political goal quite deliberately.

For illustrative purposes alone, note the recent example of mediatic events deliberately designed to influence public opinion in favour of the intervention of the US and its allies in Iraq and taken up and expanded upon by the most authoritative Western media (which then pointed the finger at itself in a dramatic mea culpa, like the New York Times): the fake testimony of 15-year-old Kuwaiti Nayirah; fake images of cormorants black as pitch and soaked in petroleum dying in the slimy waters of the Persian Gulf (Fig. 1); the Kuwait City invasion scenes filmed in American film studios (Fracassi, 1994) and so on[3].

If, however, fake news are not entirely new, neither can the discontinuity with the past be underestimated. It is all bound up with the characteristics of web 2.0 information and the way it is used. Fake news channelled by the traditional media is founded on the authoritative nature of the media itself and the social

3 All this was orchestrated by the Hill & Knowlton public relations agency which played a fundamentally important part in propaganda activities via the constant production of information and materials (videos, press releases, etc.) channelled through an association, *Astro Turf,* called *Citizens for a Free Kuwait* and then frequently filmed by the press.

credit it enjoys. In the case of the social media, this power lies in the "social physics" (Pentland) fostered by the disintermediation digital platforms feed off (Morozov, 2016), namely sharing within communities of practices (Lave & Wenger, 2006) which establish them as "situated social facts" (Riva, 2018) reinforced by echo-chamber type mirroring and reverberation (Garrett, 2017).

A further factor with a significant impact is use methods. As we know this takes place mainly via smartphone and this means limited attention, rapidity of use, superficiality and multitasking. These are all conditions which reduce users' critical ability. Lastly, an important role is played by algorithm sources with their targeting-driven models and their trolls and bots. In a powerfully cyber-fragmentation-affected framework (Paccagnella, 2018) even debunking and fact-checking, however useful and valuable they may be, are not always effective. Quite the opposite, they can sometimes be seen as counter-productive, as a result of what is known as the backfire effect (Nyhan & Reifler, 2010).

Fake news: An ambiguous concept?

Scientific research has shown that exposure to constructed stories can generate false memories (Frenda et al., 2013; O'Connell & Greene, 2017; Polage, 2012), above all when these accord with the political views and values of those subject to them (Murphy et al., 2019). Fake memories can, in turn, generate significant behavioural consequences (Laney & Loftus, 2016). In the light of this evidence, there is no doubt that the "fluidity" of digital information and the risks bound up with its manipulation constitute a serious cause for concern[4].

However, the fake-news concept[5] remains suffused with a considerable amount of ambiguity. For these three reasons: one a matter of academic definition, one more strictly political and one entirely philosophical. In definition terms, for example, Molina et al. (2021) have identified as many as seven different types of online content which might be encompassed under the fake-news umbrella term. One of the most elusive of these is so-called "facticity", clearly a fundamental characteristic by which the factual basis of information is recognised.

4 For example, it is striking that, at least until 2010, an online community shared a firm "memory" of Nelson Mandela dying in prison in the 1980s despite the fact that we all know that he left prison in 1990 and died in 2013, after being the first black prime minister of South Africa (Spinney, 2017).

5 The definition of fake news used here is a false story resembling news which is disseminated on the internet or other media generally with the intention of influencing political opinion or for other motives which may or may not be entertainment related.

However, in reference to breaking news on events as they develop and on which no previous information is available it can be problematical. Source authoritativeness may be of assistance in this, as we have seen, but this is not a 100 % guarantee. Just as, by contrast, certain non-official sources are not necessarily to be considered unreliable.

Secondly, it should be remembered that political players have irremediably polarised the concept in semantic terms, using it indiscriminately to discredit adversaries and any sources disagreeing with them. This politicisation has made it a sort of byword with which to discredit any sources opposed to one's own position. Lastly, it should be said that in epistemological terms classifying certain contents or part of them as fake is an uphill task. Doing so implies an idea of a universal and unanimous truth on the reading of events which is difficult to achieve (Southwell et al., 2017).

Furthermore, there is no unanimity amongst experts around any definition of the boundaries of what might be conceptualised as "fake news". For example, although the term has been used to describe contents in the sphere of satirical entertainment, this is a highly controversial issue. Even the intentionality theme has been the subject of heated debate. For some, for example, partially or entirely fake news channelled unintentionally by the mainstream media via the application of the "newsworthiness criteria" should be excluded from it. A further critical aspect relates to its generally binary classification nature (true/false). However, today, a considerable proportion of professional fact-checking sites prefer to use a wide ranging continuum concept (containing up to twelve categories: false, partially false, true, mainly true, etc.).

Taking these considerations duly into account it is possible, though challenging, to define manifestly false news and undoubtedly true news via interlacing analysis of:

(a) message content and linguistic structure;
(b) source quality and intentions;
(c) structural characteristics of the channel;
(d) networking and sharing characteristics.

However, in order to avert dangerous constraints on freedom of expression and fundamental rights of users to express their opinions, as well as journalistic efforts to inform, identifying the numerous intermediate forms is crucial. Just as the independence of the actors involved in debunking would seem to be increasingly important. It is a matter which came through increasingly forcefully in the case of the funding by the pharmaceuticals giant Pfizer of the International

Center For Journalists (ICFJ), a professional body which also trains Facebook's fact checkers.

Official memory, social memories: The digital media from risk to opportunity

The symbolic transmission of community allegiance is built on a putative past, a tradition. The past is used in various ways as if it were a resource. In fact,

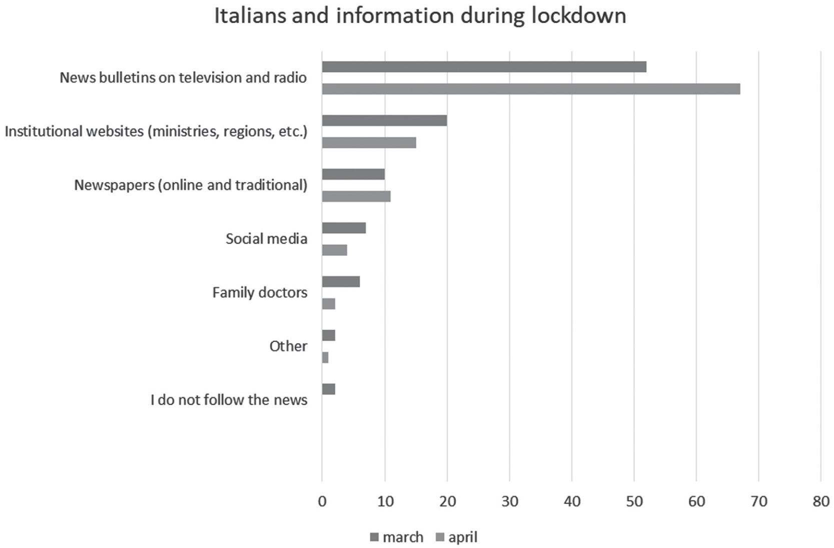
> The manner in which the past is invoked is strongly indicative of the kinds of circumstance which makes such a 'past-reference' salient. It is a selective construction of the past which resonates with contemporary influences (Cohen, 1985, p. 99)

Whilst the symbolic-identity narrative generally aims to over represent the collective memory's homogeneity, coherence and internal harmony it is actually only rarely a monolithic entity. The existence of the community depends on the power of official and institutional symbols and memory with selective re-elaborations designed to create functional, legitimising frameworks. It can also make use of memories as a tool in the struggle against political opponents or to legitimise specific power aspirations. *Damnatio memoriae* is a historical reconstruction constant in the collective memory (Wynter, 1998).

However, whilst a social group can share the same knowledge of past events, collective memory is ultimately always divided in its interpretations. There is a gap between the accepted version of the past, the past conserved in the archives and under-reported versions. These latter play no part in event commemoration and express no capacity to forge memories. This is especially decisive in the official definition of catastrophe memories as Kaspersky brilliantly demonstrated (2012) in reference to the Chernobyl nuclear tragedy.

Within this framework, the web and the digital media are a great potential resource. Once again experience has interesting emergency-context case studies to offer us. In fact, here what is known as citizen journalism is motivated by the desire to define alternative narratives to counteract those supplied by the traditional media, the desire to document the "real" condition of the places affected, the need to find something with which to restore broken bonds (Farinosi, 2020).

The risk-opportunity relationship is thus not necessarily weighted in favour of the former, as the case of the Coronavirus significantly demonstrates. In a recent analysis conducted during the first wave of the SARS-COV-2 pandemic (March-May 2020) we found that the risk of fake news – stressed by virtually all commentators – remained within reasonably tolerable limits. The Bruno Kessler Foundation has shown that this risk dropped from 30 to 5 % in the space of just



Graph 1: Italians and information during lockdown (Source: Observa: https://www.-observa.it/)

a few days after the Covid outbreak, a figure which has been confirmed by the analysis of Gallotti et al. (2020). This study created an *Infodemic Risk Index* to gain an insight into the breadth of the risk of exposure to non-reliable information sources in the various countries (a grand total of 163). Published in *Nature*, this research shows that as case numbers grew so did the dominance of reliable information on social media.

A further enquiry by *Observa* in Italy during the first wave supplies extremely interesting data capable of supplying an overview of the situation which was less obvious than expected. In the March to May 2020 period the vast majority of Italians preferred to use traditional media as their preferred source of information – as is generally the case during emergency situations (Graph 1). Only very few Italians stated a preference for social media as their source of information (6.8 % in March and 4.2 % in April).

Contrary to commonly held beliefs it would, in fact, seem to have been precisely the traditional media (TV and traditional and digital newspapers) which acted as the main source of information on the pandemic for the country (Ferrazzoli & Maga, 2022). In the absence of expert "institutional direction" (required in an emergency context), information was primarily "managed" by the traditional media (77 % radio, TV and newspapers in April). Coverage was large-scale, emphatic and schizophrenic (alternating reassurance with alarmism). Sometimes the media even "played dirty" with high impact titles and only partially true news. There is nothing accidental about the fact that the communications ombudsman authorities, AGCOM, issued an official reprimand to the audio-visual and radio broadcasting services providers as early as March 2020. Ambiguous institutional communications – not always distinct from political communications – with their contradictory and seesawing between downplaying and alarmism certainly did not help (Nicolosi, 2021).

Events surrounding the Russia-Ukraine war have brought up similar issues:

(a) risk of information overload;
(b) risk of spectacularised and emotive information narrating tragic real life events on the basis of images and plots built around structures leaving extremely small margins for critical, in-depth analysis;
(c) risk of excessive rapidity in source assessment processes and checks.

This latter is an extremely important issue because this is the first war in the social platform and globalised information era. This dismediated hyper-production of images and news has prompted the traditional media to resort to less trustworthy sources[6].

Conclusions

As we have seen, journalism has always been a fundamentally important resource for collective memory "production". The media will increasingly be an archive source on the past of great social significance. The RAI archives in Italy and those of the BBC in Britain are crucial historical and mnemonic patrimonies. Conserving and looking after these should be a cultural priority for the two countries[7]. Journalistic memory is increasingly at risk of serious distortion and manipulation. Today, following on from advanced information and communication

---

6 As happened on a few occasions with RAI, which used fake images to comment real, dramatic wartime events.

7 The scope of the collective memory sustained by media archives (traditional and digital) issue naturally goes well beyond mere journalistic production. A significant case is BBC "censorship", as reported by certain conservative American and French journals long critical of what they call "cancel culture". According to these observers, without making it public, the BBC censored its archives, modifying the contents of certain past broadcasts to bring them into line with contemporary social attitudes.

digitalisation processes, these risks have not, in all likelihood, increased but they have certainly changed significantly. The disintermediation of information production fostered by social platforms should be paid the utmost attention.

In this context fake news are certainly problematic but the impression given is that this is only partly due to the intrinsic characteristics specific to digital platform communications. Clues have emerged indicating that the problem is a key piece in a wider critical jigsaw bound up with the radicalisation of the competitive commodification process and consequent emotive spectacularisation of newsmaking. These are both processes traceable to worsening media and information provision standards (Attali, 2021). This makes for a challenge which must be dealt with across the media board. Cross-mediality is, in fact, our era's true distinctive feature: the traditional media are trailing the social media and the latter feed off the former in an interplay which frequently works against the emergence of careful, considered, critical and rational thought. This frenetic and hyper-rapid framework is an ideal breeding ground for fake news, with consequent distorting effects on perceptions of reality with harmful effects on collective memory conservation.

This paper has also attempted to show that the digital media are not simply a risk but also an opportunity. In this case, too, analysing the way catastrophes are remembered may serve as a paradigm. Ando Gilardi, founder of Fototeca storica nazionale, has written that the most important archived and restored images in his life, those most relevant to finding out the truth on human affairs, have been by unknown photographers, amateurs guided purely by a heroic passion. Gilardi loved to call these the Unknown Photographers, witnesses accorded no glory or credit to history, death and the collective conscience (Gilardi, 2008). Gilardi was referring here, first and foremost, to traditional photography. However, as a man of the twentieth century he sensed the power of the digital media to enlarge this "spontaneous testimony" dimension of memory: the ability to hunt down and capture pieces of truth of fundamental, and also tragic, importance encapsulated in the banality and randomness of everyday life.

In this sense we can certainly affirm that the digital media are a great opportunity for our societies. It is naturally up to us to grasp this opportunity from amidst the many associated risks which must inevitably be avoided or managed.

References

Alexander, Jeffrey C. et al.: *Cultural Trauma and Collective Identity*. California University Press: Berkeley 2004.

Anderson, Benedict: *Imagined Communities. Reflections on the Origin and Spread of Nationalism*. Verso: New York 1983.

Anderson, Chris: *The Long Tail. How Endless Choice Is Creating Unlimited Demand*. Random House Business: London 2006.

Anderson Michael / Bjork Robert / Bjork Elisabeth: "Remembering can cause forgetting. Retrieval dynamics in long-term memory". *Journal of Experimental Psychology*. *Learning, Memory, and Cognition* 20, 1994, pp. 1063–1087.

Assmann, Jan: La memoria culturale. Scrittura, ricordo e identità politica nelle grandi civiltà antiche. Einaudi: Torino 1997. Assmann, Aleida: Ricordare. il Mulino: Bologna 2002.

Attali, Jacques: *Histoires des médias*. Fayard: Paris 2021.

Bartlett, Frederic: *La memoria, uno studio di psicologia sperimentale e sociale*. Franco Angeli: Milano 1974.

Bergson, Henri: *Matière et mémoire. Essai sur les données immédiates de la conscience*. Félix Alcan: Paris 1896.

Cohen, Anthony: *The Symbolic Construction of Community*. Routledge: London 1985.

Di Pasquale, Caterina: *Antropologia della memoria*. Il Mulino: Bologna 2018.

Ebbinghaus, Hermann. *Memory: A Contribution to an Experimental Psychology*. Columbia University Press: New York 1913.

Farinosi, Manuela: "Informazione locale e citizen-journalism nei contesti di emergenza. La (contro)narrazione del terremoto dell'Aquila". *Problemi dell'informazione* 3, 2020, pp. 451–478.

Ferrazzoli, Marco / Maga, Giovanni: "Fighting the COVID-19 'infodemic'". *Nature Italy* 3.2.2022, retrieved 6.6.2022 from 10.1038/d43978-022-00014-3.

Fracassi, Claudio: *Sotto la notizia niente*. Libera Informazione: Roma 1994.

Frenda, Steven et al.: "False memories of fabricated political events". *Journal of Experimental Social Psychology* 49(2), 2013, pp. 280–286.

Freud, Sigmund: *Zur Psychopathologie des Alltagslebens*. Verlag von Karger: Berlin 1901.

Gallotti, Riccardo / Valle, Francesco / Castaldo, Nicola / Sacco, Pierluigi / De Domenico, Manlio: "Assessing the risks of 'infodemics' in response to COVID-19 epidemics". *Nature Human Behaviour* 4, 2020, pp. 1285–1293, retrieved 6.6.2022 from 10.1038/s41562-020-00994-6.

Galton, Francis: *Inquiries into Human Faculty and Its Developments*. Macmillan: London 1892.

Garrett, R. Kelly: "The «echo-chamber» distraction. Disinformation campaigns are the problem, not audience fragmentation". *Journal of Applied Research in Memory and Cognition* 6(4), 2017, pp. 370–376.

Gilardi, Ando: *Lo specchio della memoria. Fotografia spontanea dalla Shoah a Youtube*. Mondadori: Milano 2008.

Gitelman, Lisa: *Always Already New. Media, History and the Data of Culture*. MIT Press: Cambridge, MA 2006.

Guzzi, Diego: "Per una definizione di memoria pubblica. Halbwachs, Ricoeur, Assmann, Margalit". *Scienza & Politica* 44, 2011, pp. 27–39.

Habermas, Jurgen: *Storia e critica dell'opinione pubblica*. Bari: Laterza 2005.

Halbwachs, Maurice: *Les cadres sociaux de la mémoire*. Félix Alcan: Paris 1925.

Halbwachs, Maurice: *La mémoire collective*. Albin Michel: Paris 1950.

Hoskins, Andrew: "Digital Network Memory". In: Astrid Erll / Ansgar Rigney (eds.), *Mediation, Remediation, and the Dynamics of Cultural Memory*. De Gruyter: Berlin 2012, pp. 91–106.

Hoskins, Andrew: *Digital Media Studies. Media Pasts in Transition*. Routledge: London 2018.

Jedlowsky, Paolo: "La memoria pubblica: cos'è?". In: Margherita Rampazi / Anna Lisa Tota (eds.), *La memoria pubblica. Trauma culturale, nuovi confini e identità nazionali*. UTET: Torino 2007, pp. XIII–XVIII.

Kaspersky, Tatiana: "Chernobyl's Aftermath in Political Symbols, Monuments and Rituals. Remembering the Disaster in Belarus". *Sciences Po Paris*: PhD dissertation, 2012.

Laney, Cara / Loftus, Elisabeth F.: "False Memories Matter. The Repercussions That Follow the Development of False Memory". In: Nast, Robert / Ost, James (eds.), *False and distorted memories*. Routledge: London 2016, pp. 153–165.

Lang, Kurt / Lang, Gladys E.: "Collective memory and the news". *Communication* 11, 1989, pp. 123–139.

Lave, Jean / Wenger, Etienne: *L'apprendimento situato. Dall'osservazione alla partecipazione attiva nei contesti sociali*, Centro Studi Erikson: Trento 2006.

Le Goff, Jacques: *Histoire et mémoire*. Gallimard: Paris 1977.

Leroi-Gourhan, André: *Le geste et la parole I. Technique et langage*. Albin Michel: Paris 1964.

Leroi-Gourhan, André: *Le Geste et la Parole II. La mémoire et les rythmes*. Albin Michel: Paris 1965.

Maistrello, Sergio: *Giornalismo e nuovi media. L'informazione al tempo del Citizen Journalism*. Apogeo: Milano 2009.

McCombs, Maxwell E. / Shaw, Donald L.: "The agenda-setting function of media". *Public Opinion Quarterly* 36(2), 1972, pp. 176–187.

Meek, Allen: *Trauma and Media. Theories, Histories and Images*. Routledge: New York 2010.

Miconi, Andrea / Risi, Elisabetta: "Framing pandemic news. Una ricerca sulla rappresentazione del Covid-19 nei news media italiani". In: *Problemi dell'informazione*, 1, 2022, pp. 31–61.

Molina, Maria D. et al.: "Fake news is not simply false information: A concept explication and taxonomy of online content". *American Behavioral Scientist* 65(2), 2021, pp. 180–212.

Morozov, Evgenij: *Silicon Valley. I signori del silicio*. Codice: Torino 2016.

Murphy, Gillian / Loftus, Elizabeth / Grady, Rebecca H. / Levine, Linda J. / Greene, Ciara M.: "Fool me twice: How effective is debriefing in false memory studies?". *Memory* 28(7), 2019, pp. 938–949.

Neisser, Ulric: "Memory with a Grain of Salt". In: Harriet Harvey Wood / A. S. Byatt (eds.), *Memory. An Anthology*. Chatto & Windus: London 2008, pp. 80–88.

Nicolosi, Guido: "Communication, fear and collective trauma in first wave Covid 19 "double epidemic" in Italy: traces and clues". *Studia Humanitatis Journal* 1(1), 2021, pp. 103–126.

Nyhan, Brendan / Reifler, Jason: "When corrections fail. The persistence of political misperceptions". *Political Behavior* 32, 2010, pp. 303–330.

Nora, Pierre: *Les Lieux de Memoire, I. La République*. Gallimard: Paris 1984.

O'Connell, Anthony / Greene, Ciara M.: "Not strange but not true: Self-reported interest in a topic increases false memory". *Memory* 25(8), 2017, pp. 969–977.

Paccagnella, Luciano: "Post-truth: Hoaxes, misinformation, trust and reputation in the network society". *International Journal of E-Politics* 9(2), 2018, pp. 1–13.

Polage, Danielle C.: "Making up history: False memories of fake news stories". *Europe's Journal of Psychology* 8(2), 2012, pp. 245–250.

Ribot, Théodule-Armand : *Les maladies de la mémoire*. Baillière : Paris 1881.

Riva, Giuseppe: *Fakenews*. Il Mulino: Bologna 2018.

Semon, Richard W.: *The Mneme*. George Allen & Unwin: London 1921.

Semon, Richard W.: *Mnemic Psychology*. The Gresham Press: London 1923.

Sorrentino, Carlo: *Il giornalismo. Cos'è e come funziona*. Carocci: Roma 2002.

Southwell, Bryan G. / Thorson, Emily A. / Sheble, Laura: "The persistence and peril of misinformation". *American Scientist* 105, 2017, pp. 372–375.

Spinney, Laura: "How Facebook, fake news and friends are warping your memory". *Nature,* 543, 2017, pp. 168–170, retrieved 6.6.2022 from 10.1038/543168a

Thompson, John B.: *The Media and Modernity. A Social Theory of the Media*. Stanford University Press: Stanford, CA 1995.

Van Dijk, Jan: *The Network Society. Social Aspects of New Media*. Sage: London 1999.

Van Dijk, Josè: *Mediated Memories in the Digital Age*. Stanford University Press: Stanford, CA 2007.

Vygotskij, Lev S.: *Pensiero e linguaggio*. Giunti: Milano 2007.

Wertsch, James V. / Roediger III, Henry L.: "Collective memory: Conceptual foundations and theoretical approaches". *Memory* 16(3), 2008, pp. 318–326.

Wynter, Jay: *Il lutto e la memoria. La grande guerra nella storia culturale europea*. Il Mulino: Bologna 1998.

Wolf, Mauro: *Teorie delle comunicazioni di massa*. Bompiani: Milano 1985.

Zelizer, Barbie: "Journalism Memory Work". In: Astrid Erll / Ansgar Nunning (eds.), *A Companion to Cultural Memory Studies*. De Gruyter: Berlin 2010, pp. 379–387.

Francesco Pira

Disinformation, emotivism and fake news: Polarising impulses and the breakdown of social bonds. Why the true-to-life can seem true

Abstract: Societal platforming dominates individual actions and connections, self-generated contents and social relations circulate like products, commodities. Manipulation is its distinctive trait because it is power over the web and interpersonal networks which is at stake. We are witnessing the proliferation of messages not as autonomous meaning constructions but as the result of a "cloning" process in which disinformation is both fed and fed on at the same time. Questioning where autonomous meaning production can come to fruition, if it is less frequent, as an effect of the speed with which flows are propagated and the stage of thinking underlying knowledge building and supporting social action would thus all seem to be of interest.

Keywords: Disinformation, fake news, misinformation, platforming, credibility

The falsification of reality and power

In 1998, at the height of the Algerian crisis[1] Reporter sans frontiers and l'Osservatorio internazionale sulla libertà d'informazione published a report on the state of press freedom in the Mediterranean. Its introduction to the data reads as follows: "Of the 185 United Nation member states, only just over thirty have a fully free press and a further fifty have something approximating to it. The situation in eighty of these is negative and extremely negative in a further thirty. There is nothing surprising about this: the press freedom charter and the democratic charter are one and the same"[2].

Twenty-four years on from this, the EU High Representative for Foreign Affairs, Joseph Borrell, stated before the European Parliament that "the European task force combating disinformation has detected a hundred or so cases of disinformation of Russian propaganda provenance in countries such as Germany,

---

1 A bloody civil war was underway in the 1990s in Algeria, a protracted domestic war which began in 1992 and ended in around 1999.

2 Source: Mediterraneo: Rapporto 1998, Edizioni Gruppo Abele, Torino.

Ukraine, Italy and Spain on a range of themes such as elections, vaccines, Brexit and separatist movements in certain EU member states"[3].

These two citations introduce the theme of the falsification of reality and power. It might be argued that fake news, and falsification and the distortion of reality in general, would appear to be a distinctive trait in the development of human civilisation and is now playing a greater role in the society-building process than it ever has before. In his analysis of modernity's institutional dimensions Giddens has argued that the role of capitalist enterprise, with its powerfully competitive nature, has meant that technological innovation tends to be constant and generalised and thus has a predominant influence over other institutions (Giddens, 1990, p. 64). He thus theorises the nature of the nation state as a direct expression of capitalist society. "Capitalist society is society only because it is also a nation-state" (ivi p. 65). He defines four institutional dimensions of modernity: capitalism, industrialism, surveillance and military might.

This figure effectively illustrates some of the consequences of modernity with the foremost of these being the need for information oversight and supervision of social dynamics as a central element in managing power. Giddens has underlined that "in the industrialised sectors of the globe-and, increasingly, elsewhere-human beings live in a created environment, an environment of action which is, of course, physical but no longer just natural." (ib. p. 67). To this we can add that not only do the characteristics of modernity and capitalist society seem to be founded on the created environment but so does the potential inherent in globalisation which offers the chance for direct access to a growing quantity of shareable information as a consequence of disintermediation. This is apparently a positive dynamic which echoes Jenkins' theories on the principle of participatory culture (ib., 2006).

These standpoints – which observed the embryonic web society (Castells, 1996) and, at the same time identified risk factors – lead us on the Zuboff's thinking regarding the definition of "surveillance capitalism" (ib., 2019) as a consequence of the act of digital expropriation.

> For today's owners of surveillance capital the experiential realities of bodies, thoughts and feelings are as virgin and blameless as nature's once-plentiful meadows, rivers, oceans and forests before they fell to the market dynamic. In this new logic, human experience is subjugated to surveillance capitalism's market mechanisms and reborn as

3 Source: *Strasburgo, Borrell "anche l'Italia colpita dalle fake news*." Rainews.it, 8.3.2022, retrieved 6.6.2022 from https://www.rainews.it/articoli/2022/03/strasburgo-borrell-anche-litalia--colpita-dalle-fake-news-d991b03d-855c-449e-b27a-f5d27ee61554.html.

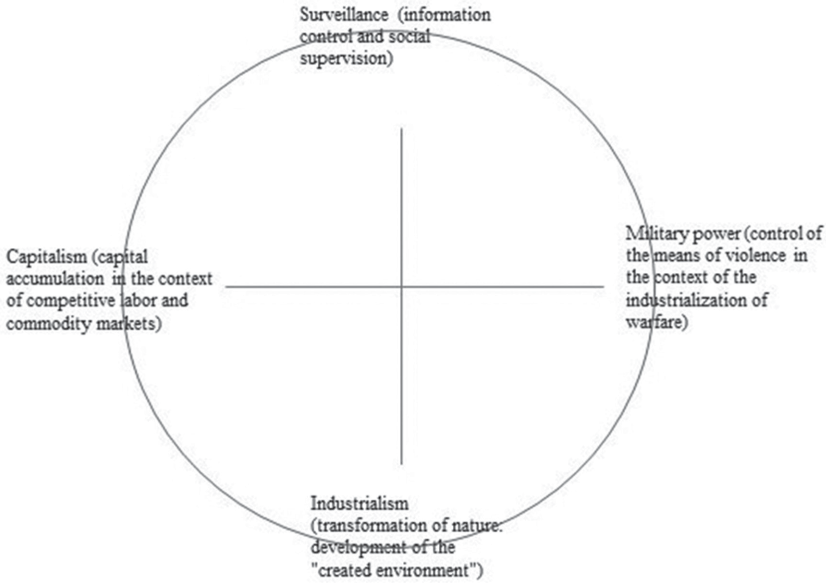


Fig. 1: The institutional dimensions of modernity (Giddens, 1990, p. 66)

> "behavior". These behaviors are rendered into data, ready to take their place in a numberless queue that feeds the machines for fabrication into predictions and eventual exchange in the new behavioral futures markets (Zuboff, 2019, p. 111).

We are now facing an epoch-making change in the way web society has modified our experience of time and flow logics and the way in which human society is developing (Pira, 2021).

The platforming era

We must start by defining platform society.

> It refers to a society in which social and economic traffic is increasingly channeled by a (corporate) global online platform ecosystem that is driven by algorithms and fueled by data. In turn, an online platform should be understood as a programmable digital architecture designed to organize interactions between users-not just end users but also corporate entities and public bodies. It is geared toward the systematic collection, algorithmic processing, circulation, and monetization of user data. Crucially, platforms cannot be seen apart from each other but evolve in the context of an online setting that is structured by its own logic. A "platform ecosystem" is an assemblage of networked

platforms, governed by a particular set of mechanisms that shape everyday life." (van Dijck, Poell, de Waal, 2019, p. 27)."

The platforms encourage us to build social relationships based on aggregation processes rather than rational thought which passes through processes which abstract and objectify real life. Essentially we experience as real only that which responds to our own biases. Thus, with a transmedia orientation the media system has shifted from a condition in which it was structured on the basis of media which differed substantially from one another to offering contents via platforms thanks to which a multiplicity of different contents can be disseminated indiscriminately on diverse media.

This takes us back to the information-power relationship. We are witnessing a progressive loss of institutional and official information and knowledge source credibility. The media are becoming tools with which to govern power and this connotation leads on to Innis's definition of bias (2001) which focuses on the concatenation between strength and weakness which is such a feature of the fake news dynamic process. Earlier work (Altinier & Pira, 2018) presented an analysis which led to the definition of a set of indicators for which the term hexagon was coined, which grouped together six characteristics defining their strength and the persistence of the media system underlying misinformation and disinformation. Fake news displays certain characteristics which make it a powerful tool:

1. Appeal: it is news which stimulates most people's curiosity because it rides the wave of current themes and fits well into agenda setting processes;
2. Vitality: it is disseminated extremely effectively and reaches large numbers of people. Fake news has very high redemption levels;
3. Speed: fake news dissemination is fast and uncontrolled;
4. Cross-mediality: this type of news is capable of being transversal, i.e. passing from one media to another to the extent that, in many cases, news comes out on Facebook and is then taken up by the media;
5. Flows: fake news is a flow, i.e. a series of information oriented towards demonstrating a thesis or channelling public opinion in the direction of a clear stance which does not reflect the real state of affairs;
6. Power: even when it is shown to be false fake news succeeds in leaving a deep mark on readers' memories and public opinion as a whole (ivi, 2018).

These dynamics impact on the way in which people's identity processes are built and whether and how digital society, platform society, offers ideal frameworks with which to stimulate social capital formation and, in particular, how individuals are capable of taking on board interpretational tools enabling them to make an active contribution to the shaping of these. They effectively reflect on the concept of social capital. Underlying these are ideas deriving from individuals capable of aggregating for the purposes of furthering shared goals (Morcellini Mazza, 2008) but if what prevails is the sense of solitude and disruptive drives which surveillance capitalism generates the result is the impulse which Zuboff defines "experiential expropriation" as a consequence of datafication, circulation and commodification processes. In this way digital expropriation generates control over individuals which erodes the autonomy sphere with the first victim being privacy (Zuboff, 2019, p. 205). This would seem to be a key element in thinking on the systemic disinformation processes currently under way, the direct consequences of the affirmation of the platform ecosystem. Dominant forces concentrated into just a few hands are generated and these unilaterally determine the dynamics and logics of social learning. The potential to build autonomous meaning trajectories is thus nullified, as is the ability to achieve shared knowledge.

It is on this basis that we might go so far as to affirm that the proliferation and dissemination of disinformation is no longer an episodic phenomenon but rather an integral part of a well-defined strategy designed to exploit social dynamics to build consensus and manipulate public opinion. It is a global influence industry which cuts across all social sectors and it is clear that in crisis situations what we are witnessing is changes in meaning directions. Diminished perceptions of safety and increased feelings of fear are leading to communications built around altering risk perceptions. As Beck has observed, denying risks exist does not eliminate them and if we allow a social model which minimises such problems to prevail we are allowing apathy and political cynicism to spread and increasing the gap between social and political structures respectively (Beck, 2000, p. 313). It is a visible fracture which is widening as a result of "those global risks which have generated a world in which the foundations of the dominant risk logics have been undermined and invalidated and in which there are only difficult-to-control dangers instead of calculable risks." (ivi, p. 335).

Current phenomena show that an influence strategy is under way which uses group dynamics and emotivism to channel consumption and opinions, exploiting and distorting credibility building processes.

We are in a hyper-communication era in which: "[…] everything mixes with everything. Even the boundaries between inside and outside are more permeable. We are now completely externalised in a 'pure influence network absorption and reabsorption surface'" (Han, 2017, p. 50).

Media technology has transformed society into a society of media and communication technology production is increasingly concentrated in the hands of the Big Five. Communicating via the media and disseminating contents has made individuals into consumers and consumer products for others. Twentieth-century definition frameworks are now definitively obsolete and new ones thus need to be formulated. It is a process which requires solid cultural bases and the technological skills with which to avoid these taking shape within the circuits fixed by the creators of technology.

References

Altinier, Andrea / Pira, Francesco: *Giornalismi. La difficile convivenza con Fake News e Misiformation*. Libreriauniversitaria: Limena 2018.

Beck, Ulrick: *Risikogesellschaft. Auf dem Weg in eine andere Moderne: Auf dem Weg in eine andere Moderne*. Suhkamp Verlag: Frankfurt Am Main 1999. Italian translation: *La società del rischio. Verso una seconda modernità.* Carocci: Roma 2000.

Byung-Chul, Han: *Die Austreibung des Anderen*, S. Fischer Verlag: Frankfurt am Main 2016. Italian translation: *L'espulsione dell'Altro. Società, percezione e comunicazione oggi*. Nottetempo: Milano 2017.

Castells, Manuel: *The Rise of the Network Society*. Oxford: Blackwell 1996.

van Dijck, José / Poell, Thomas / de Waal, Martijn: *The Platform Society*. University Press: Oxford 2019. Italian translation: *Platform Society. Valori pubblici e società connessa*. Guerini e Associati: Milano 2019.

Giddens, Anthony: *The Consequence of Modernity*. Polity Press: Cambridge 1990. Italian translation: *Le consequenze della modernità.* Il Mulino: Bologna 1994.

Innis, Harold A.: *Empire and Communications*. The Clarendon Press: Oxford 1950. Italian translation: *Impero e Comunicazioni*. Meltemi: Roma 2001.

Jenkins, Henry: *Convergence Culture*. New York University: New York 2006. Italian translation: *Cultura convergente.* Apogeo: Milano 2007.

Morcellini, Mario / Mazza, Barbara: *Oltre l'individualismo. Comunicazione, nuovi diritti e capitale sociale.* FrancoAngeli: Milano 2008.

OLI: *Mediterraneo: Rapporto 1998*. Reporters sans frontières, Osservatorio internazionale sulla libertà di informazione. Gruppo Abele: Torino 1998.

Pira, Francesco: "The crisis of the cultural production model: the exasperated vitrinization". *H-ermes. Journal of Communication*, 2021, pp. 247–268, retrieved 6.6.2022 from 10.1285/i22840753n20p247.

Roggero, Caterina: "Il "Decennio nero" algerino: una ferita ancora aperta". ISPI – Istituto per gli Studi di Politica Internazionale 2.5.2017, retrieved 6.6.2022 from https://www.ispionline.it/it/pubblicazione/il-decennio-nero-algerino-una-ferita-ancora-aperta-16487.

Zuboff, Shoshana: *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*. PublicAffairs: New York 2019. Italian translation: *Il capitalismo della sorveglianza. Il futuro dell'umanità nell'era dei nuovi poteri*. Luiss University Press: Roma.

Part III Justice and Misinformation

Francesco Biondo

The marketplace of ideas and its externalities: Who pays the cost of online fake news?

Abstract: Since the nineteenth century, thanks to J.S. Mill, an argument against limiting the freedom of expression has been gaining ground, namely that the truth of an argument is the result of free competition between different ideas in a "marketplace of ideas" and that this competition can yield an approximate form of the truth or a robust argument. In this paper I will argue that Mill's model of the marketplace of ideas is an "idealised" model because it assumes that there is a subject who seeks to know in a detached manner, without being influenced by his or her expectations, needs, ideologies, or biases. However, the metaphor of the marketplace of ideas is still relevant because it also harbours a limitation to the marketplace itself, namely the production of "negative externalities": the spread of fake news (conspiracy theories and the deliberate spread of alarm), the polarisation of the debate, and the concentration of the advertising market in the hands of a few companies. Just as in the case of pollution, these costs need to be taken into account. How can this be done? The available conventional mechanisms seem to be insufficient because they need to pursue two conflicting goals, i.e., reducing the number of disinformation sites on the one hand and protecting users' freedom of expression on the other. Platforms may not allow competing apps to be downloaded or may impose automated and intrusive regulatory schemes. However, this means that censorship would return in the form of a "private" censor. I will compare two models for possibly solving the conundrum: the one proposed by Paul Romer of regressive taxation of platforms and the mixed model proposed by the European Commission.

Keywords: Fake news, externalities, freedom of expression, marketplace of ideas

Introduction

Arguing about the legal regulation of so-called fake news implies, for a jurist or a philosopher of law, to examine the reasons that justify freedom of expression. Words are not just an expression, they are also communication "actions", and those actions can have consequences. If they had no consequences, we might then ask what need is there for something to be expressed. These consequences are then subject to evaluation, and the evaluation depends on the "value" that is given to the freedom to express anything: an opinion, a scientific thesis, or an evaluative or aesthetic judgement. There are several justifications for freedom of expression, understood as the claim that expression cannot be sanctioned. It is assumed that there are at least four rationales: (1) the value of the autonomy of those who express themselves (Mackenzie, Meyerson, 2021), (2) the attainment of truth (Marshall, 2021), (3) distrust of public censorship institutions (Mill, Holmes, discussed below), and (4) the participation of individuals in governing the democratic state (Bhagwat, Weinstein, 2021). Of course, advocates of free speech very often develop the four rationales together, but there is a clear advantage in distinguishing them. These rationales can then be grouped into two major classes: non-consequentialist justifications, and consequentialist justifications. The former justify freedom of expression because it is an "individual right", the latter because society as a whole ultimately benefits from it.

In this paper I will focus on a particular justification of freedom of expression (consequentialist): the argument that public debate ultimately functions as a free market (marketplace of ideas). One enters a market with a commodity (an idea), and if the commodity (or idea) is sold, then that commodity is valued (accepted as being true, valid, correct). Let us also assume that, like a marketplace, the acceptance of an idea implies that consensus about another idea (or multiple ideas) will decline. In this model, what is relevant is not the content of the goods or an idea, but the fact that these are sold. Even the presence of goods (ideas) that turn out not to meet consumer tastes (because they prove to be fake) is not a problem. Just as the market disposes of goods, i.e., leaves them unsold, because they do not meet consumer tastes, debate will weed out false ideas. No one will accept them. So, there is no need to build an institutional apparatus (censorship) that first checks which idea is correct and sanctions those who express it. Indeed, such an apparatus might even eliminate ideas that might turn out to be correct, acceptable. Or it could prevent other theses that are only correct at a certain point in time from later turning out to be incorrect in the light of new scientific evidence. Therefore, an ex-ante control would prevent any form of development. Similar to the marketplace, where the entry of a new product drives competitors to improve the goods they offer, the spread of a new idea drives opponents of that idea to improve their arguments[1]. Incidentally, the four rationales stated above would also be protected.

1 According to Mokyr (2017), Britain owes its commercial success to the fact that the notion of a "marketplace of ideas" has been firmly entrenched in the country as early as the eighteenth century.

The birth of the "marketplace of ideas" argument

This argument has developed throughout history over a long period of time and has three main proponents: John Milton (poet), John Stuart Mill (philosopher), and Oliver Wendell Holmes (Supreme Court justice).

The three developed their arguments at different times and for different purposes. In the brief space of this article, I will dwell only on the aspects that each author has contributed to developing the "marketplace of ideas" argument.

The first author argued that the institution of censorship is an insult to the power that truth has to impose itself on falsehood without needing any help from the public institution of censorship. There is no need for any authority to permit or prohibit an idea; if an idea is true, it will prevail over false ideas. Milton does not offer historical, methodological, or empirical arguments; it is enough for him to express his confidence in God's will to let a true idea prevail in a contest with a false idea (Blasi, 2021, pp. 21–24).

Mill follows the hypothesis that a true idea (not only in the theological realm) triumphs over a false idea through competition and explains how this is possible without the need for transcendent authorities. Any possible link to theological issues vanishes in the competition, and the advantages of accepting that false ideas may also compete become clear[2].

"But the peculiar evil of silencing the expression of an opinion is, that it is robbing the human race; posterity as well as the existing generation; those who dissent from the opinion, still more than those who hold it. If the opinion is right, they are deprived of the opportunity of exchanging error for truth: if wrong, they lose, what is almost as great a benefit, the clearer perception and livelier impression of truth, produced by its collision with error" (19).

The only way to get to the truth is for people to discuss and learn from their mistakes:

"In the case of any person whose judgment is really deserving of confidence, how has it become so? Because he has kept his mind open to criticism of his opinions and conduct. Because it has been his practice to listen to all that could be said against him; to profit by as much of it as was just, and expound to himself, and upon occasion to others, the fallacy of what was fallacious" (22).

One might, however, think that what we and our group believe is true, but Mill cautions that prohibiting a false statement is not permitted either:

2 In https://eet.pixel-online.org/files/etranslation/original/Mill,%20On%20Liberty.pdf.

"To call any proposition certain, while there is any one who would deny its certainty if permitted, but who is not permitted, is to assume that we ourselves, and those who agree with us, are the judges of certainty, and judges without hearing the other side" (23).

This way we would not be seeking the truth, but only reassurance in our beliefs. Interestingly, in the following passage Mill hints at the idea, which I will return to, of the reassuring effect of group thinking:

"Absolute princes, or others who are accustomed to unlimited deference, usually feel this complete confidence in their own opinions on nearly all subjects. People more happily situated, who sometimes hear their opinions disputed, and are not wholly unused to be set right when they are wrong, place the same unbounded reliance only on such of their opinions as are shared by all who surround them, or to whom they habitually defer; for in proportion to a man's want of confidence in his own solitary judgement, does he usually repose, with implicit trust, on the infallibility of "the world" in general. And the world, to each individual, means the part of it with which he comes in contact; his party, his sect, his church, his class of society" (19–20).

However, it is only with Oliver Wendell Holmes and his important dissenting opinion in the Abrams case that the concept of the market of ideas, or marketplace of ideas, was born[3]. The Abrams case concerned the constitutionality of the conviction of a group of pacifists for circulating leaflets against enlistment during World War I under the Espionage Act. The defendants sought reversal of their sentences because these violated the First Amendment. In his dissenting opinion, Justice Holmes, who only seven months earlier had accepted the constitutionality of limiting free speech if there was a "clear and present danger"[4], made clear that the First Amendment is based on a conception of truth as a "clash" of opinions in a "marketplace of ideas".

"Persecution for the expression of opinions seems to me perfectly logical. If you have no doubt of your premises or your power, and want a certain result with all your heart, you naturally express your wishes in law, and sweep away all opposition. To allow opposition by speech seems to indicate that you think the speech impotent, as when a man says that he has squared the circle, or that you

3 Abrams v. United States, 250 U.S. 616 (1919), retrieved 6.6.2022 from https://supreme.justia.com/cases/federal/us/250/616/

4 Restrictions on freedom of expression are legitimate only if the expression is "of such a nature as to create a clear and present danger that [it] will bring about the substantive evils that Congress has a right to prevent. It is a question of proximity and degree."

do not care wholeheartedly for the result, or that you doubt either your power or your premises. But when men have realized that time has upset many fighting faiths, they may come to believe even more than they believe he very foundations of their own conduct that the ultimate good desired is better reached by free trade in ideas – that the best test of truth is the power of the thought to get itself accepted in the competition of the market, and that truth is the only ground upon which their wishes safely can be carried out. That, at any rate, is the theory of our Constitution. It is an experiment, as all life is an experiment. Every year, if not every day, we have to wager our salvation upon some prophecy based upon imperfect knowledge. While that experiment is part of our system, I think that we should be eternally vigilant against attempts to check the expression of opinions that we loathe and believe to be fraught with death, unless they so imminently threaten immediate interference with the lawful and pressing purposes of the law that an immediate check is required to save the country" (S.320).

Unlike Mill, Holmes did not believe that the conflict between opinions allows the correct one to prevail; he did not believe that there is a "truth" that is achieved through argumentation or that debate makes public opinion more "virtuous." As a supporter of pragmatism and Darwin's theory of evolution,

"Holmes came to value the freedom of speech largely for its capacity over time to generate new ways of thinking, discredit obsolete ideas, and alter priorities of inquiry. Those long-term consequences are what he had in mind when he pronounced the competition of the market to be the best test of truth" (Blasi, 2021, 40)[5].

The failures of the marketplace of ideas

The idea that public debate should be open to any expression regardless of its content has been constantly at the centre of controversy. And it is no coincidence that all liberal legal systems have norms that limit the exercise of freedom of expression, as in the case of hate speech, or in cases of defamation. In many countries, such as Italy, there are criteria for the exercise of freedom of the press and there are rules that make defamation through the press an aggravating

5 Let us also mention Coase (1974) who asserted the analogy between freedom of trade and freedom of expression on the basis of a realistic consideration: in both cases there are actors aiming to obtain a benefit. That is why socialist-oriented free speech advocates should accept free trade and competitive markets. If they do not do so, it is out of self-interest, because they believe their work as intellectuals is more valuable than that of economic entrepreneurs. For reasons of space, I will not elaborate on this topic.

circumstance. If there is a marketplace for ideas, it is definitely a regulated one. Not everyone can access it, and transactions can result in liability in the event of damage, as in the case of other markets. Here, too, however, critical issues arise regarding the marketplace metaphor. Does free entry into the public debate and competition among ideas really produce efficiency? There can even be "failures" in the marketplace of ideas. These failures also include the existence of negative externalities, costs, for example in terms of goods, which are not "internalised" in the transaction, but fall on the community (e.g., pollution). Who pays for the negative externalities brought about by transactions in the marketplace of ideas? I am referring here in particular to the question about who pays for a particular negative externality, the spread of incorrect news, or deliberately fake news?

In what sense can the marketplace of ideas lead to "failure"?

In general, market failure is defined as the suboptimal outcome determined by market relationships without any intervention by the state. Of course, depending on the economic theory one takes, there can be different taxonomies of market failures. Let me cite four of them (on market failures, I refer to Stiglitz, 2000).

The first case concerns the insufficient production by the marketplace of the public good "reliable information". If we all enjoy reliable information (e.g., about health care products, the economy, the weather), we get more benefits than we individually are willing to pay for. Furthermore, each individual obtaining the information does not reduce but rather increases the value of each unit of information. In this situation, however, each economic entity knows that it can benefit from it without paying for it. Producing, or even consuming, "real" information has costs. To produce it, one has to pay specialised staff and to benefit from it, as a consumer, one needs to buy the product. It is therefore more advantageous for the news producer to produce information that "copies" true information, or to reduce the cost of controlling the "quality" of the information. It is more rational to be a free-rider than to help produce the public good. This situation leads to a paradox: if the state does not intervene, then the public good "reliable information" is not produced, because each actor does not have enough incentives to avoid being a free rider. If, on the other hand, the state intervenes through funding to support the production of reliable information or worse through fines, or even criminal sanctions, of "unreliable information", these are clearly forms of control (indirect or direct) of information and ultimately of censorship (Hemel, 2021, p. 125).

The second case of failure of the marketplace of ideas is that of "incomplete markets". Often in transactions, there are obviously cases of asymmetrical information, i.e., the possibility that in a transaction one party is in possession of some relevant information that they do not want to share with the other. This is the case of the "lemon". As George Akerlof's example of buying a used car shows, the seller has the incentive to sell at the highest price an object of which he is the only one to know the real characteristics. Under these conditions only bad quality cars will be sold, because the seller will have no incentive to sell good quality cars (ibid. p. 129). The same will happen in the information world. The "rational" publisher will be able to sell inaccurate information, passing it off as reliable information.

The third case is the creation of monopolies, with groups that manage to eliminate others or maintain a dominant position in the market. In the case of the news corporations, this can also occur by creating companies that manage to incorporate other companies instrumental in the sale of the "information" product, thus reducing costs, obtaining licenses for video or radio broadcasting, or establishing a monopoly in the advertising market. This way some parties become gatekeepers of access to the marketplace of ideas.

The fourth case is that of the "negative externalities" of a marketplace of ideas with no control over the reliability of information. Take the case of websites that spread news manipulating the risks of vaccination. For as long as vaccines have existed there has always been a fierce debate over the necessity and lawfulness of such measures. However, it is clear that the situation changes with the emergence of a public health care system that offers everyone, regardless of their health care choices, the opportunity to be treated. In the event that a large group refuses to get vaccinated, relying on blogs or other forms of information, which advise against receiving this health treatment, even those who have not made that choice, and require hospital care will pay the consequences. Just as polluters do not pay the cost in terms of environmental degradation, those who spread fake news do not pay the cost of the health care services needed to protect public health.

Why the remedies do not work in the digital world

These cases of failures of the marketplace of ideas are already supported by extensive literature, and present a set of defined institutional solutions to which the traditional mass media have adapted (newspapers, magazines, television, and radio): (1) rules sanctioning the responsibility of the author for false, plagiarised or defamatory statements, (2) professional associations whose membership ensures the quality of the service offered, (3) ethical codes of conduct of the category of journalists, (4) antitrust laws on the management of broadcasting frequencies or ownership of newspapers. However, these solutions do not apply to the "digital environment", to the way information is produced and disseminated on the Internet.

On the Internet, we are witnessing a new way of circulating information: socials, digital platforms, and web engines. In the digital environment, as we will see, the rules for avoiding the failures of the marketplace of ideas do not seem to work because disintermediation has occurred between the producers of the information and its users.

While in "traditional" media there is a "filter" (or several filters) between the production of content and its dissemination, and reception, in the digital sphere there is no need for such filters. The *raison d'être* of social media, digital platforms and web engines is precisely to offer users free, unlimited, and unrestricted access to the communication arena. In this case, the ideal of the marketplace of ideas really seems to be realised. Everyone can communicate, everyone can write, and everyone can access processed information anywhere, as long as one connects to it. Therefore, the "infrastructure of speech" changes and becomes "democratised" (Balkin, 2014, 2303–2304). This can, however, produce all four failures of the marketplace of ideas, and only partially apply the solutions that are imposed on traditional media instead.

First, the protection of freedom of expression in digital platforms is, at least in the U.S., stronger than in other countries. Section 230 of the Communication Decency Act states:

"No provider or user of an interactive computer service shall be treated as the publisher or speaker of any information provided by another information content provider" (47 U.S.C. § 230).

According to advocates of the freedom of expression, this rule has allowed today's digital technology to develop, with the emergence of giants such as YouTube, Facebook, and Twitter.

The website of the NGO Electronic Frontier Foundations reads:

"This legal and policy framework has allowed for YouTube and Vimeo users to upload their own videos, Amazon and Yelp to offer countless user reviews, craigslist to host classified ads, and Facebook and Twitter to offer social networking to hundreds of millions of Internet users. Given the sheer size of user-generated websites (for example, Facebook alone has more than 1 billion users, and YouTube users upload 100 hours of video every minute), it would be infeasible for online intermediaries to prevent objectionable content from cropping up on their site. Rather than face potential liability for their users' actions, most would likely not host any user content at all or would need to protect themselves by being actively engaged in censoring what we say, what we see, and what we do online. In short, CDA 230 is perhaps the most influential law to protect the kind of innovation that has allowed the Internet to thrive since 1996" (Fishback, 2020).

However, in this way, it becomes difficult to implement any regulation that would hold platforms accountable, all of which are based in the U.S. and host content that disseminates not only false judgements, but also judgements that incite violence, or violate copyright. The limits of freedom of expression remain (such as the prohibition of defamation), but they do not apply for the platforms that host the content, and that profit, as we will see, from the number of visits and shares of such content. The incentive to remove certain content is only "indirect," in terms of commercial prestige.

One might reply that in some legal systems, such as in Italy, in accordance with the provisions of the European directive, postal police can, even on the indication of a private individual, inform the platform of the presence of defamatory content, or content that violates a copyright law. Based on this notice, the platform has a legal obligation to remove the content. In addition, companies impose conditions of use on the users of their services that prohibit the use of expressions that may constitute a violation of the law (defamation, for example) or the uploading of copyrighted material. Finally, several platforms have formed units to monitor hosted content.

The result of these measures do not appear to be very encouraging. First, regarding the ability, or willingness, to prevent the spread of fake news, as a report by the NGO Center for Countering Digital Hate shows, platforms continue to host the accounts of 12 individuals who alone produce 65 % of the anti-vaccine posts on the three major platforms despite repeatedly violating the platforms' own terms of use[6]. In the end, it is not clear how real the incentive is for these companies to enforce their own terms of use. In doing so, they reduce the service to be offered to their clients, giving them an incentive to switch to other providers that do not require these terms of use, and that keep the ideal of expression without limits alive, e.g. the Parler platform (Young, 2022, pp. 13–14).

Moreover, effective intervention by these private parties produces a paradoxical outcome: censorship handled by a public body through administrative measures, which can be appealed in court, is replaced by another form of censorship, i.e., private censorship. And that censorship is hardly subject to judicial review, since platforms can argue that they are merely policing compliance with freely accepted terms of use.

6 Retrieved 6.3.2022 from https://www.counterhate.com/_files/ugd/f4d9b9_13cbbbef105e459285ff21e94ec34157.pdf.

I mentioned that it is possible for members of a social network to abandon it because it is too “restrictive” in its terms of use. But one has to wonder if apps might then be available. It should be noted that apps are downloaded through two platforms; one is Google Play for Android phones and the other iOS for Apple systems. In the event that those platforms decide not to allow those companies to place apps, then a de-facto monopoly would be in place (Hubbard, 2017).

Antitrust taxation or supranational regulation of gatekeepers?

This situation led Nobel Prize-winning economist Paul Romer (2021) to advocate for the U.S. government to impose a 72 % tax on the profits of companies like Facebook or Google that exceed an advertising revenue threshold. In this way, argues the author, we can avoid the danger of a concentration of economic power in the hands of a few corporations and reduce, at least in part, the spread of fake news. Then again, Romer argues, after the recent Ohio v. American Express ruling (585 U.S., 2018), there is not very much hope that hi-tech giants will be subject to any existing antitrust enforcement.

So, the question, however, is whether heavy taxation with indirect antitrust purposes solves the problem of fake news. According to Petit, the answer is no:

“competition in news distribution might not reduce fake news in the long term. Under competition, firms make lower profits. This, in turn, might trigger a race to the bottom. With lower profits under competition, firms have to cut down costs. They might be incentivized to focus on variable costs reductions. Laying off fact checkers might be a rational strategy under competition” (2020, 249).

It therefore seems that we are faced with a conundrum on the externalities of the marketplace of ideas.

Either we let the platforms govern the spread of fake news, and therefore replace a public censor with a private one. Or we let fake news continue to spread perhaps on various platforms that compete by selling services that ensure maximum dissemination with minimal (or no) control.

However, the recent proposals for European regulations on digital markets and services approved by the European Parliament at the proposal of the Commission seem to avoid this dilemma, at least in their intentions: the Digital Markets Act[7] and the Digital Services Act[8] (Begkamp, 2021; Tommasi, 2021).

7 COM(2020)842.

8 COM(2020)825.

Article 3 of the Digital Markets Act identifies the characteristics of those companies that constitute the "gatekeepers" for entry into the digital world:

> A provider of core platform services shall be designated as gatekeeper if: (a) it has a significant impact on the internal market; (b) it operates a core platform service which serves as an important gateway for business users to reach end users; and (c) it enjoys an entrenched and durable position in its operations or it is foreseeable that it will enjoy such a position in the near future.

To be a gatekeeper, two determined criteria have been established:

(a) the requirement in paragraph 1 point (a) where the undertaking to which it belongs achieves an annual EEA turnover equal to or above EUR 6.5 billion in the last three financial years, or where the average market capitalisation or the equivalent fair market value of the undertaking to which it belongs amounted to at least EUR 65 billion in the last financial year, and it provides a core platform service in at least three Member States;
(b) the requirement in paragraph 1 point (b) where it provides a core platform service that has more than 45 million monthly active end users established or located in the Union and more than 10,000 yearly active business users established in the Union in the last financial year;

These gatekeepers have particular obligations toward customers including (art. 6):

(a) refrain from using, in competition with business users, any data not publicly available, which is generated through activities by those business users, including by the end users of these business users, of its core platform services or provided by those business users of its core platform services;
(b) allow the installation and effective use of third party software applications or software application stores using, or interoperating with, operating systems of that gatekeeper and allow these software applications or software application stores to be accessed by means other than the core platform services of that gatekeeper;
(c) refrain from technically restricting the ability of end users to switch between and subscribe to different software applications and services to be accessed using the operating system of the gatekeeper, including as regards the choice of Internet access provider for end users;

According to the directive, platforms cannot restrict access to competing platforms with less or more stringent usage rules. The risk of a private monopoly of online communication is reduced compared to what has been observed previously (for reasons of space, I will not address the issue of sanctions here).

With regard to the phenomenon of the spread of illegal content on digital platforms, the regulation of the Digital Services Act identifies in article 25(1) 45 million monthly users as the threshold above which a platform becomes subject to specific regulation (the so-called big tech companies such as Facebook, Google, etc.). These companies are subject to the obligation to mitigate the following risks (art. 26):

(a) "the dissemination of illegal content through their services;
(b) any negative effects for the exercise of the fundamental rights to respect for private and family life, freedom of expression and information, the prohibition of discrimination and the rights of the child, as enshrined in Articles 7, 11, 21 and 24 of the Charter respectively;
(c) intentional manipulation of their service, including by means of inauthentic use or automated exploitation of the service, with an actual or foreseeable negative effect on the protection of public health, minors, civic discourse, or actual or foreseeable effects related to electoral processes and public security."

Of course, it is difficult to predict the outcome of these measures. Much depends on the effectiveness of controls and possible sanctions, both by national authorities and especially by EU authorities. In any case, a step forward has been taken at least in Europe to "internalise" the costs of dissemination through platforms of false or defamatory information without making private companies the "guardians" of rights in the digital sphere or worse "private censors". However, the risk of "capture of the regulator" (a substantial deference of the regulator's action to the interests of the large corporations) is always lurking, and in that case, there would be no choice but to rely on antitrust legislation (or taxation) … provided that lawmakers do not get "caught".

References

Balkin, James M.: "Old-School/New-School Speech Regulation". *Harvard Law Review* 127(8), 2014, pp. 2296–2342.

Bergkamp, Penelope: "The Proposed EU Digital Markets Act: A New Era for the Digital Economy in Europe". *European Company Law Journal* 18(5), 2021, pp. 152–161.

Bhagwat, Ashutosh / Weinstein, James: "Freedom of expression and democracy". In Frederick Schauer / Adrienne Stone (eds.): *Oxford Handbook* *of Freedom of Speech*, 2021, retrieved 6.6.2022 from 10.1093/oxfordhb/9780198827580.013.5.

Blasi, Vincent: "The classic arguments for freedom of speech 1644–1927". In Frederick Schauer / Adrienne Stone (eds.): *Oxford Handbook of Freedom of Speech*, 2021, retrieved 6.6.2022 from 10.1093/oxfordhb/9780198827580.013.2.

Coase, Ronald H.: "The Market for Goods and the Market for Ideas". *The American Economic Review* 64(2), 1974, Papers and Proceedings of the Eightysixth Annual Meeting of the American Economic Association (May, 1974), pp. 384–391, retrieved 6.6.2022 from https://www.jstor.org/stable/1816070.

Fishback, George: "How the Wolf of Wall Street Shaped the Internet: A Review of Section 230 of the Communications Decency Act". *Texas Intellectual Property Law Journal*, 28(2), 2020, pp. 275–296, retrieved 6.3.2022 from https://www.eff.org/issues/cda230.

Hemel, Daniel J.: "Economic perspectives on free speech" (November 25, 2019). In Frederick Schauer / Adrienne Stone (eds.): *Oxford Handbook of Freedom of Speech*, 2021, retrieved 6.6.2022 from http://dx.doi.org/10.2139/ssrn.3492827.

Hubbard, Susan: "Why fake news is a real antitrust problem". *Forbes* on-line 10.1.2017, retrieved 10.3.2022 from https://www.forbes.com/sites/washingtonbytes/2017/01/10/why-fake-news-is-an-antitrust-problem/?sh=c6cab8430f1e.

Mackenzie, Catriona / Denise, Meyerson: "Autonomy and free speech". In Frederick Schauer / Adrienne Stone (eds.): *Oxford Handbook of Freedom of Speech*, 2021, retrieved 6.6.2022 from 10.1093/oxfordhb/9780198827580.013.33.

Marshall, William P.: "The truth justification of freedom of speech". In Frederick Schauer / Adrienne Stone (eds.): *Oxford Handbook of Freedom of Speech*, 2021, retrieved 6.6.2022 from 10.1093/oxfordhb/9780198827580.013.3.

Mill, James S.: *On Liberty*. J. W. Parker and Son: London 1859.

Mokyr, Joel: *A Culture of Growth The Origins of the Modern Economy*. Princeton University Press: Princeton 2017.

Petit, Nicholas: *Big Tech and the Digital Economy: The Moligopoly Scenario*. Oxford University Press: Oxford 2020.

Romer, Paul: "Taxing Digital Advertising". *Digital Ad-Tax* 17.5.2021, retrieved 1.3.2022 from https://adtax.paulromer.net/.

Stiglitz, Joseph: *Economics of the Public Sector*. New York: Norton 2000.

Stone, Adrienne / Schauer, Frederick (eds.): *The Oxford Handbook of Freedom of Speech*. Oxford University Press: Oxford, 2021.

Tommasi, Sara: “The Liability of Internet Service Providers in the Proposed Digital Services Act”. *European Review of Private Law* 29(6), 2021, pp. 925–944.

Young, Greyson K.: “How Much Is Too Much: The Difficulties of Social Media Content Moderation”. *Information & Communications Technology Law* 31(1), 2022, pp. 1–16, retrieved 1.3.2022 from 10.1080/13600834.2021.1905593.

Laura Lorello

Freedom of information and fake news: Is there a right to *good* information?

Abstract: The advent of the internet and digital platforms has revolutionised the way information is produced and disseminated. The aim of this paper was to examine whether it is possible to draw from Article 21 of the Italian Constitution that there is a right to *good* information, as an expression of the rights to be informed and to receive information. It also looked at what form of regulation is possible for the dissemination of information on the Web in order to ensure that it is true, objective, and unbiased and whether public-only regulation, private-only regulation or a form of co-regulation, which seems to be model chosen in the EU's draft Regulation, the so-called Digital Services Act, is feasible.

Keywords: Freedom of speech, fake news, digital platform, regulation

Introduction

The freedom to express one's thought, as is well known, is regarded as an inalienable prerequisite of any democratic system and an essential condition for the very existence of democracy (Lavagna, 1970; Italian Constitutional Court, Judgment No. 84, 2/4/1969, cons. dir. 5). Its very position within the framework of the Constitution of the Italian Republic reveals its central role, projecting a person's individual dimension (Article 13, Italian Constitution) into the collective dimension, through the expression of ideas and opinions. And expression must be *free* and can take place by *any means of dissemination* other than speech and writing (Article 21.1, Italian Constitution). The new constitutional system, which recovered and restored the spaces of freedom denied by the fascist dictatorship, is affirmed in this solemn, general proclamation. This explains the need to move away from the narrow perspective of the Statuto Albertino and Article 28 in particular: "The press shall be free, but a law shall repress its abuses", which was absolutely insufficient and inadequate to the design of the new republican democracy (Barile, 1974). The provision of Article 21 of the Italian Constitution establishes two separate and distinct forms of freedom: on the one hand, the more traditional one, namely freedom in the negative sense, which sees freedom of expression as an autonomous space without interference on the part of public power; and on the other hand, the more innovative one, which links the manifestation of thought to political participation, making it an instrument for the construction of the democratic order (Caretti, 1997, Olivetti, 2020, Costanzo, 1993). This is the *positive implication* of the freedom to express one's thought, which gives value to "the 'pluralistic content' of our Constitution" and mutually enriches the community and the individual (Barile, 1974). Moreover, the dimension of participation places Article 21 of the Italian Constitution on the same level as the principle of pluralism set out in Article 2 and as that of substantive equality in Article 3.2, since only full freedom of expression can contribute to the construction of a pluralist society and to the achievement of political, economic and social equality.

The debate among the founders on defining the content of Article 21 (Article 16 of the draft constitution) was heated and complex in both the 1st Subcommittee and the Assembly.

Among the various issues discussed, with reference to the topic at hand, was the issue of responsibility for the content of printed publications, which emerged as early as in the proceedings of the 1st Subcommittee. In particular, it was Mr. Lelio Basso, rapporteur of the article[1], who pointed out, in reference to seizure, the need for the name of a publication's manager to be indicated: "those who want to have freedom must take responsibility for the acts they may perform". In this sense, he added, publications that do not indicate, for example, the name of the manager, "lead to a denial of responsibility, and therefore one cannot recognise freedom for it, since the principle that freedom is connected with responsibility has been established". The statements made by Mr. Basso in the session of the 1st subcommittee on 27 September 1946 follow the same line of reasoning: "when citizens do not take responsibility for what they publish, they have no right to invoke the protection of freedom of the press"[2]. He therefore proposed the inclusion of rules on responsibility in the Constitution "as an invitation and as framework for lawmakers" with regard to the obligation to disclose financial statements and news sources, warning of the possible "upheavals (that) false or fabricated news can produce"[3]. Therefore, the 1st Subcommittee, with regard to the periodical press, felt the need to provide for control over "news sources" (along with "financial precautions"), as expressed by Mr. Giuseppe Dossetti and supported, later, by Mr. Palmiro Togliatti, who, though with reference to the possibility for

1 I Sottocommissione, sessione del 26 settembre 1946, in Camera dei deputati, *La Costituzione della Repubblica*, vol. IV, 1970, 436

2 I Sottocommissione, sessione del 26 settembre 1946, in Camera dei deputati, La Costituzione della Repubblica, vol. IV, 1970, and also On. Lucifero, 449–450

3 *Ibidem*, 453.

the printed press to have greater financial resources, highlighted the need to supervise newspaper management, which, failing that, would "be able to act at will on public opinion", thus demanding action in defence of democracy[4]. The discussion ended with the approval of this wording: "For the special functions of the periodical press, the law shall provide for controls on news sources and means of financing, suitable for ensuring public faith". As much as this reference to public faith ended up tying predominantly the question of the reliability of information sources to the sphere of criminal law, it can be said, however, that there was already, generally speaking, the problem of ensuring correct and truthful information, in order to protect the trust and confidence of its recipients.

Later, during the Assembly session of 14 April 1947[5], the aspect of controlling news sources was further discussed, and it was Mr. Vincenzo Cavallari[6] who noted that such control was necessary to make press freedom "truly an operating reality" and not a mere *statement of principle*[7]. On the occasion, it was emphasised again that fake news, if *taken seriously* by the population, could create "such a state of disorientation of public opinion that our country would be in grave danger"[8]; and Italian democracy itself, given its recent establishment, should have been protected from this risk by entrusting this task to the state[9]. This led to the afternoon session of 14 April 1947, where, after extensive debate, it was determined that the issue of controls should be addressed not in the text of the Constitution, but in a subsequent law regulating the press[10]. Therefore, the content of the fifth paragraph of Article 16 of the draft at that date set out that "The law may establish controls for ascertaining the sources of news and means

4 *Ibidem*, 454.

5 Italian Constituent Assembly, session of 14 April 1947, in Camera dei deputati, *La Costituzione della Repubblica*, vol. I, 1970, 848.

6 He had submitted an amendment with Ms Rita Montagnana to be inserted after paragraph 2 of Article 16 of the draft constitution, which stated "The State may order controls on news agencies in order to ascertain new sources and means of financing", Italian Constituent Assembly, session of 14 April 1947, 848.

7 Mr. Cavallari, moreover, considered it necessary that the control should cover not only the periodical press but also newspapers, Italian Constituent Assembly, session of 14 April 1947, 850.

8 Italian Constituent Assembly, session of 14 April 1947, 851.

9 Mr. Giulio Andreotti had a different opinion and feared that control over information and its financial sources would give rise to unacceptable interference to the point of "paralysing the life of a newspaper," Italian Constituent Assembly, session of 14 April 1947, 851, 853.

10 Constituent Assembly, session of 14 April 1947, afternoon session, 880.

of financing the periodical press" and several requests for deletion were submitted. In the end, it was voted down in separate parts[11]. It was hence decided to delete the part related to the control of news sources and to keep the part related to the control of means of financing, which was then included in today's fifth paragraph of Article 21 of the Constitution[12].

The complexity and liveliness of the debate, briefly described here, thus confirmed what Mr. Ghidini said: "This Article 16 was one of the most tormented and most debated (…). And it is natural, because it is a fundamental freedom, perhaps the most typical freedom of democratic and civilised governments"[13].

The link mentioned earlier between freedom of expression and political participation highlights the so-called passive face of freedom: the right to receive information and, in particular, the right to an *offer of* information, as complete and impartial but also as reliable as possible. On the one hand, it relates to the need for the pluralism of information providers and information sources, which calls into question the public entity whose responsibility it is to regulate the exercise of freedom of information within the limits of the Constitution. And on the other, it goes hand in hand with the goal of building a democratic system (Caretti, 2005), in which control over policy choices is guaranteed and the input of forms of participation in decision-making is ensured (Valastro, 2006).

Basically, in the range of situations covered by Article 21 of the Italian Constitution, the presence of a third party comes to the fore: alongside the person who expresses a thought, that is, the person who provides the information, the so-called active party, the freedom/right to inform, and alongside the public entity that has to *regulate* the exercise of this freedom, there is the recipient of the information, the so-called passive party, the person who has the right to receive the information, along with the interest in seeking the news, and who has the right to freely access all news media.

And it is precisely by taking on the role of the recipient of the information, of those on the passive side of the freedom to inform, that the founders' concern, as mentioned above, of ensuring adequate controls over the sources of the information, in order to protect the trust of citizens who are the recipients of that information, resurfaces (Caretti, 2005)[14].

---

11 *Ibidem*, 880, 882.

12 *Ibidem*, 882.

13 *Ibidem*, 855.

14 P. Caretti, I diritti fondamentali, Ibidem, 291, highlights the distinction made by the founders between the freedom of communication of Article 15 of the Italian Constitution in which information has a precise and clearly identified recipient, and

We now come to the question of the content of the information disseminated, which has to be correct, complete, reliable and objective. This is a need already known in the past but felt predominantly, with reference to *political* and electoral information, in order to ensure equal chances among candidates[15], and with reference to *advertising* information, to protect consumers and their choices. In particular, the study of the ways through which the advertising message is built makes it possible to identify sophisticated techniques, capable not only of guiding but also at times of determining consumer decisions (Lombardi Vallauri, 2019). From this perspective, the choice of individual words and their association, in a certain order or pattern, may lead a user of the message to derive a certain conclusion or believe a specific outcome to be real, without any basis of truth[16].

If this process is transferred to the field of information and if it is provided outside the traditional, regulated channel of printed publications, now also digital, we are on risky ground where, as the Founders feared at the time, *fake news* can cause great "disorientation of public opinion," and be a serious danger to democracy.

While it is true that, as recalled above, the attention of the founders focused mainly on the press, the main means of dissemination of information at the time and, therefore, the one that had suffered the greatest restrictions and mortifications under the Fascist dictatorship, it is also true, however, that the intended general and abstract nature of the wording of Article 21 of the Italian Constitution, *speech*, *writing and any other means of dissemination*, has allowed and allows the guarantees of the constitutional provision to be applied to every instrument of transmission and dissemination of thought, as in the case of radio and television and, today, the Web. In short, the need to protect the active and passive faces of the freedom to express one's thought and to link it to the principles of pluralism and substantive equality runs unaltered throughout the history

---

the freedom of expression of Article 21 of the Italian Constitution in which information is intended for everyone "with all that this entails with regard to the protection of the interests of the recipients of the information message".

15 See Laws No. 515 of 1993 ("Discipline of electoral campaigns for the election to the Chamber of Deputies and the Senate of the Republic") and No. 28 of 2000 "Provisions for equal access to the media during election and referendum campaigns and for political communication").

16 E. Lombardi Vallauri, *La lingua disonesta*, Ibidem in Conclusions, 259, recalls the French experience regarding the association of different realities, such as *rats*, *garbage* and *illegal migrants* or *immigrants*, *criminals* and *terrorists*, an association that aimed to build a negative opinion in the population.

of the Italian Republic, and arrives in our time, affecting contemporary media. It follows that the new ways of expressing thought must also fall within the scope of the Italian Constitution and its principles, and that exactly the same needs for guarantee and protection arise for them.

If, therefore, information disseminated through the Web must also be subject to the limits that Article 21 of the Italian Constitution draws, it is necessary to investigate whether the interest being protected is the same and whether the level or type of protection to be afforded is the same. Clearly, in the world of the internet, the condition of the information user is quite different from print, radio or television. While the interest to be protected may be the same, i.e., reliance on the quality and truthfulness of information, the need for its protection is amplified and deepened by multiple factors, which make the traditional and long-standing instruments for safeguard, designed for the press or competition, insufficient. In essence, the advent of the internet, by revolutionising the way information is produced, disseminated and used, has brought about a radical change in society capable of affecting the political sphere as well (Pitruzzella, 2017).

The contours of this revolution are many and not all reassuring and positive. For example, through the Web information production has been decentralised, that is, everyone can create and disseminate information, which is certainly good from the perspective of pluralism and democratic participation. At the same time, however, there is no control over the information put into the Web, its reliability and objectivity: but do we really want more information at the price of its truth?

Moreover, once information is placed in the Web, its producer loses control of it, meaning that it will be the search engines, the so-called *gatekeepers*, which will collect, sort, classify and then place it in a position of greater or lesser prominence, without any awareness and participation on the part of the initial producer. *My* information is therefore *mediated* and *altered* by the platforms, losing its genuineness and being taken out of its original context to acquire quite different meanings and uses.

If, then, one looks at it from the side of the person receiving the information, the picture is even more worrying. On the one hand, on a platform the user receives unsearched news, which is, for example, associated with another search or context (Pitruzzella, 2017).

This reception takes place, therefore, in a situation of inattention and disinterest on the part of the individual, which, however, does not prevent the news from being perceived and *absorbed* in any case, but it does prevent it from being in the conditions of lucidity and concentration necessary to detect its falsity, erroneousness, or bias. Once it is uncritically acquired, it becomes *true* and will be disseminated as such.

On the other hand, it is the very search for information on platforms that is distorted from the start. As pointed out in doctrine, the algorithms that govern the selection of information on platforms *know* and *learn* our preferences and offer us only news and data that are to our liking or interest, leaving out all the rest. *Personalised* information, which responds only to our cultural, political, social and other tastes and orientations and does not reflect reality, its plural dimension, complexity, contradictions and conflicts, are packaged this way. However, I will believe that that information is true and complete, that reality falls entirely within its scope, and that there are no ideas, opinions, experiences other than mine. Ultimately, the very pluralistic arrangement that Article 21 of the Italian Constitution is intended to protect and that is the substance of a democratic order is lost[17].

At this point a final issue emerges, namely that of finding the appropriate tools to ensure that the safeguards put in place by Article 21 of the Italian Constitution can also be fully extended to the dissemination of information through the Web, especially with reference to the right to receive it.

The solution accepted in the North American model excludes any intervention by the public entity, based on the consideration that information and ideas are like goods, moving within the marketplace: the *free marketplace of ideas*. In this sense, only the broadest freedom of circulation can lead, as with goods, to the selection and success of the best and most truthful information and the *natural* elimination of false and unreliable news.

A prerequisite of this reasoning, however, is that entities on the Web make their choices rationally and consciously, having *all* the information at their disposal, without filters or selections made by others. This is, however, an assumption that

17 The implications of this model of information, the so-called *filter bubble*, are extremely dangerous and threatening to the resilience of democracy and pluralism. Ignoring the opinions and ideas of others makes an individual self-projected, reinforces their biased positions, and puts them in contact only with those who think like them, creating a *virtual* world, far from the real one, determining its rejection and increasing its aggressiveness toward those who are different, and thus nullifying the pluralistic and solidaristic dimension of the Constitution of the Italian Republic. Without considering the negative effects on another aspect of a democracy, namely public debate: the non-contextual nature of the debate on the Web, in terms of time and space, prevents the physiological unfolding of the confrontation of ideas and the definition of common and shared positions.

is difficult, if not impossible, to realise in the world of the internet, in which the supply of news is predominantly entrusted to platforms and their algorithms. Moreover, the approach accepted overseas is rooted in a conception of virtually unlimited freedom of expression enshrined in the First Amendment of the U.S. Constitution, which prohibits the legislature from "abridging the freedom of speech, or of the press" (Pollicino, 2017).

This is a conception that is far removed from the European approach, which places precise limits on freedom of expression to protect other fundamental rights, as reflected in Article 10 of the ECHR, Article 11 of the European Bill of Rights and Article 21 of the Italian Constitution.

Therefore, the solution cannot be to let the free market of ideas find its own balance by expelling bad news on its own. Thus, the need for intervention to regulate the circulation and production of information in the network takes shape.

But who should be the regulator?

Entrusting this task exclusively to the public entity does not seem decisive, as its action may be ineffective, not to mention the ever-present risks of practicing some form of censorship. But even the choice of a solution of total self-regulation, that is, to be entrusted only to private platforms, does not appear adequate and could prove risky, as it would be a private entity, bearer of strong economic interests, to exercise control and selection over the information to be circulated within its *social network* (Pitruzzella, 2017). This is compounded by the fact that, at least in the U.S., the fundamental First Amendment principle of free speech cannot be enforced in relationships between individuals, such as the operator of a platform and its user, since it operates only in relationships between public power and private entities. And it is on the basis of this assumption that, in the case of Twitter's removal of former U.S. President Donald Trump's account, a California judge ruled out that there could be a violation of the outgoing president's freedom of expression, although he acknowledged the legitimacy of the platform's actions, since the statements made by Trump represented *fighting words*, that is, a form of incitement to violence[18].

A third, possible, solution is to imagine a mixed system, in which the public entity dictates the general rules that private platforms are then called upon to apply and implement.

Basically, they should act within a predefined framework, checking information before it is placed on the network and removing content that is false or against the law or infringes on fundamental rights. Only in the case of violation

18 United States District Court- Northern District of California, order no. 138, 6/5/2022.

of the rules established by regulations or ineffectiveness of the work done by the platforms would an independent third party step in with a subsequent and subsidiary intervention designed to protect the rights involved[19].

Such an assumption is found in the Conclusions of Advocate General G. Pitruzzella, in the request for reference for a preliminary ruling by the German Federal Court of Justice[20].

The question submitted to the EU Court of Justice concerns the interpretation of Article 17(3)(a) of EU Regulation 2016/679 of the EP and the EU Council on the protection of individuals with regard to the processing of personal data and on the free movement of such data, with reference to the request for de-referencing of certain links displayed in searches on the Google platform, which referred to articles of a third party, published on the Web, and the request to cease the display of photos in one of the articles, in the form of thumbnails.

The Advocate General highlighted that the right to de-referencing, claimed by the applicants, depends on examining the information present in the de-referenced content, and that to give substance to this right it is necessary to define an appropriate procedure, a *procedural fairness*[21].

Starting, in fact, from the consideration that *private powers* operate in the internet system that are capable of affecting fundamental rights (such as the right to be forgotten) because of their role as *gatekeepers* of information, the only way to make these rights effective is to establish "sufficient procedural guarantees" that private parties can activate vis-à-vis the digital platforms responsible for data processing, guarantees which must be matched by "correlative obligations" of the platforms[22]. Therefore, the private individual who has the right to request the search engine operator to de-reference a web page, which contains personal data that they believe to be untrue, must provide "a principle of proof" of the falsity of the content whose de-referencing they are requesting, provided that

19 This is a model pioneered in Italy by the Guarantee Commission for the implementation of the law on strikes in essential public services, Law No. 146 of 1990, as amended by Law No. 83 of 2000, which establishes the general framework for the regulation of strikes in public services, leaving it up to employers' associations and trade unions to implement it, through shared forms of self-regulation, on the basis of special procedures. The Commission intervenes only if the parties fail to reach an agreement.

20 Case C 146/20, TU, RE v Google LLC.

21 Opinion of Advocate General G. Pitruzzella, 7/4/2022, Case C 460/2020, TU, RE/Google LLC, para. 42.

22 *Ibid*, para. 43, "In the internet world," the Advocate General continues, "there is a need for some form of '*procedural data due process*' ".

this is not “manifestly impossible or excessively difficult”[23]. The search engine operator, for its part, must carry out the necessary research to confirm the merits or otherwise of the request, examining both the data on its platform and those disseminated by the publisher of the web page where the content subject to the de-referencing request is located, including by activating an adversarial procedure with the latter. At the end of the process, the search engine operator will have to determine whether or not to grant the de-referencing request in a reasoned decision[24].

If the application is rejected, the private party may turn to the judicial authority or the supervisory authority provided for in Article 51 of the GDPR[25], as third and impartial parties, with a complaint against the decision of the search engine operator[26].

The procedure outlined in the Conclusions seems to be embody, in essence, that mixed model, mentioned above, in which only the failure of the private parties, namely the user and operator of the platform or search engine, to reach an agreement allows the *ex-post* entry of an additional player downstream of the procedure with only a subsidiary role.

The Digital Services Act also seems to be heading for a mixed model[27], thus allowing any individual or entity to report the presence of illegal content on platforms to their operators (Article 14); the platforms are called upon to carry out the necessary investigations and, if necessary, to adopt a reasoned decision to remove the information or disable access to it (Article 15). They must also set up an internal complaint-handling system (Article 17), which is in addition to the possibility of requesting the intervention of “any out-of-court dispute settlement body” and which does not, however, exclude recourse to the courts (Article 18). As mentioned above, it is a mixed scheme, in which public regulation unfolds in the subsequent action of private platforms under a predefined procedure[28].

---

23 Opinion of Advocate General G. Pitruzzella, 7/4/2022, Case C 460/2020, TU, RE/Google LLC, para. 44.

24 *Ibid*, para. 45.

25 General Data Protection Regulation, EU Regulation 2016/679 of the EP and EU Council, 27/4/2016.

26 Opinion of Advocate General G. Pitruzzella, 7/4/2022, Case C 460/2020, TU, RE/Google LLC, para. 47.

27 Proposal for EP and EU Council Regulation of 15/12/2020 on a single market for digital services (Digital Services Act) and amending Directive 2000/31/EC. The act was the subject of an EP and EU Council agreement reached in April 2022.

28 See whereas (considerando) 22 of the Proposal for Regulation: (22) In order to benefit from the exemption from liability for hosting services, the provider should, upon

Conclusions

The right to receive *good* information can be considered, based on the above considerations, to be part of the heritage of constitutional principles that the Italian system and the European system share. The need to prevent fake news from "disorienting" public opinion and the need to link the freedom to produce and disseminate information to an inevitable responsibility for the content of that information was already well understood by the founders, who transferred it into the intricacies of Article 21 of the Italian Constitution. Measures to ensure *good* information, designed for the press and then adapted to new media such as radio and television, prove inadequate today in the world of the internet. Here, the *pluralisation* and *parcellation* of the entities that produce news, the availability of means of transmission of immediate access and uncontrolled use, and the intermediation of platforms and search engines in the collection, selection, organisation and dissemination of information make it urgent to develop instruments capable of ensuring the effective protection of the rights of the recipients of that information.

This protection goes well beyond the traditional and, perhaps, simpler protection of the consumer or voter, since it projects itself into the far more relevant condition of citizen, who is called upon to participate in the life of the political community to which they belong and to make the choices it requires.

In this perspective, the protection of the recipient of information, by ensuring that it is true, reliable, and objective, in a word *good*, is transfigured into the very protection of democracy and becomes a precious guardian of its survival.

References

Barile, P: Libertà di manifestazione del pensiero, Enc. dir., vol XXIV, Giuffré: Milano 1974

Caretti, Paolo: "Sistema dell'informazione". In: Grossi, Paolo (ed.): *Giuristi e legislatori. Pensiero giuridico e innovazione legislativa nel processo di produzione del diritto*, Atti dell'Incontro di studio (Firenze, 1996), Giuffrè: Milano 1997.

---

obtaining actual knowledge or awareness of illegal content, act expeditiously to remove or to disable access to that content. The removal or disabling of access should be undertaken in the observance of the principle of freedom of expression. The provider can obtain such actual knowledge or awareness through, in particular, its own-initiative investigations or notices submitted to it by individuals or entities in accordance with this Regulation in so far as those notices are sufficiently precise and adequately substantiated to allow a diligent economic operator to reasonably identify, assess and where appropriate act against the allegedly illegal content.

Caretti, Paolo: *I diritti fondamentali*. Giappichelli: Torino 2005.

Costanzo, Pasquale: "Informazione nel diritto costituzionale". In: *Digesto discipline pubblicistiche, VIII*, Utet: Torino 1993, pp. 319–395.

Lavagna, Carlo: *Istituzioni di diritto pubblico*. Utet: Torino 1970.

Lombardi Vallauri, Edoardo: *La lingua disonesta*. Il Mulino: Bologna 2019.

Olivetti, Marco: *Diritti fondamentali*. Giappichelli: Torino 2020.

Pitruzzella, Giovanni: "La libertà di informazione nell'era di Internet". In: Pitruzzella Giovanni / Pollicino Oreste / Quintarelli Stefano: *Parole e potere*. Egea: Milano 2017, pp. 55–98.

Pollicino, Oreste: "La prospettiva costituzionale sulla libertà di espressione nell'era di internet". In: Pitruzzella Giovanni / Pollicino Oreste / Quintarelli Stefano: *Libertà d'espressione, hate speech e fake news*. Egea: Milano 2017, pp. 1–146.

Valastro, Alessandra: "Commento art. 21 Costituzione italiana". In: Raffaele Bifulco / Alfonso Celotto / Marco Olivetti (a cura di): *Commentario della Costituzione*, I. Utet: Torino 2006, pp. 451–473.

Caterina Scaccianoce

Correctness of judicial information and impartiality of the judge: The distortions of the media criminal trial

Abstract: This analysis, which focuses on the difficult relationship between criminal justice and judicial information, examines only some of the most controversial aspects, starting with an undisputed premise, namely that over time the function of communication in judicial matters has changed, evolving from informative to formative. I will reflect on the hiatus between the real justice as exercised in courtrooms and justice perceived by the public through media narratives, paying particular attention to the distortions of the so-called media trial and the resulting bias in the exercise of judicial power. Finally, we will consider possible solutions, which, in a perspective of striking a balance between the values at stake, may preserve the dignity of the individual, starting with the innovations introduced by Italian Legislative Decree No. 188 of 2021, implementing Directive 2016/343/EU on the presumption of innocence.

Keywords: Fair trial, judicial misinformation, fake news, judicial reporting, media criminal trial, presumption of innocence, judicial impartiality

The criminal trial and information: Constitutional values and procedural rules

Just as information is the most valuable asset for a liberal democracy, provided that it is reliable and plural, so too jurisdiction is an exercise of democracy only if it is known and understood.

In the folds of the complex relationship between criminal justice and judicial information there are many controversial aspects that deserve closer scrutiny. The terms “criminal justice” and “information” seem to have undergone, over time, profound changes in the way in which they interact: communication in judicial matters today has taken on a different function from the traditional one, i.e., it is no longer only “informative”, but also “formative”[1]. It is an increasingly cumbersome function, which is expressed in full in the so-called media

1 “From a perspective ennobled by representing a form, albeit embryonic, of control by the people over the administration of justice we have slipped into the ambition of the people themselves to judge” (Iacoviello, 2016, p. 220). The most blatant deformation occurs when the media trial steals the scene from professional justice (Amodio, 2016).

trial. A direct consequence of this change is the progressively growing distance between real justice, exercised in the courtroom, and justice perceived by the public through the media narrative. Disinformation, dissemination of fake news that arouses anxiety and alarm, and increasing loss of credibility of the justice system are the possible effects, in addition to the risk, closely related to the loss of confidence in the justice system, of opening the way to that form of degenerate democracy called ochlocracy, i.e., government by the mob, the people, their drives and their instincts (Giostra, 2018b), in which the feelings, moods and resentments of the so-called people's court take control.

At the root of these phenomena, as I said, is the media trial, which, set up in parallel to the investigation and aimed to present – as well as to reconstruct – the facts based on the prosecution's thesis shaped from the material put together unilaterally by the investigators and inputs mercilessly found by the journalists, gives the masses an anticipated truth and verdict, which is inevitably summary, different from reality, and above all packaged with rules foreign to those that govern a fair criminal trial (cross-examination for the formation of evidence, criteria for evaluating evidence, the rule of beyond reasonable doubt). The public trial will end several years after the initial uproar with a judgement bound in any case to disappoint the people, whether the actual trial fails to meet the media representation or when, on the contrary, it does.

Given that the criminal trial is a place of ascertainment where an exploratory path is developed, making it possible to pass from the *res judicanda* (the prosecution hypothesis) to the *res judicata*, i.e., the sentence that definitively concludes the trial and that the community is prepared to accept as true because it has been achieved by the method considered most reliable for pronouncing a fair judgement, it should be borne in mind that the criminal trial is also a place of guarantee and is based on various cardinal principles, including those of cross-examination, separation of the phases, presumption of innocence, and publicity. In order for the final result to be accepted by the people, it is necessary for the people to be put in a position to know the way in which justice is served (Giostra, 2020, p 27). That is why the principle of publicity is invoked: a principle (article 101 of the Italian Constitution: Justice is administered in the name of the people) that alludes to the administration of justice in a visible form (Mantovani, 2020, p. 141), becoming an instrument of control over the proper exercise of judicial power, and, at the same time, an instrument to prevent and repress inappropriate conduct[2]. The principle of publicity is closely related to the trust that citizens

2 "Where it does not prevent you from carrying them out, it calls to answer for it".

must place in justice. Today, however, immediate publicity, i.e., the public going to the hearing to personally attend the trial, is replaced by mediated publicity, i.e., the narration of the trial by journalists, which, compared to immediate publicity, is qualitatively poorer. The media give us a distorted, incomplete image, they tell us only about some pieces of the trial, helping to widen the gap between justice that unfolds in the courtroom and justice perceived by the people. What is more, mediated publicity interferes with actual justice, with the risk of affecting the outcome of legal proceedings.

The criminal trial and information come into contact both when there is judicial reporting, i.e., the community is informed about a trial in progress, and when the trial is held in the media through the so-called media trial.

Dissemination in the mass media of information about the course of a criminal trial is a narrative that has significant value on a democratic level: it allows the people to see how justice is administered, reporting what justice does, endorsing it, criticising it, pressing it[3]. Of course, all this must take place by following the rules. What rules? Those rules that should be the result of balancing multiple values. First of all, articles 21 and 101 of the Italian Constitution, which clearly sanction the inalienable right to judicial information, and then, articles 2, 24, 27, and 111 of the Italian Constitution, which provide us with guidance on how to exercise this right in criminal law (Giostra, 2018a, p. 12).

The interests at stake are of paramount importance: the efficiency of investigations, the honour, reputation and image of those involved in the trial, the mental neutrality of the judge, the authenticity of testimony, the trust of citizens in justice, the presumption of innocence and cognitive integrity of the judge of the hearing. In short, it is a complex of value coordinates that lawmakers should have upheld in outlining the rules of the Code of Criminal Procedure that govern the relationship between the right to report news and the secrecy of investigations. In reality, legislation gives us an unclear and inadequate set of rules[4]. The code of criminal procedure distinguishes between internal secrecy and external secrecy. Internal secrecy is put in place to protect the outcome of the investigation. Article 329 of the Italian Code of Criminal

(Mantovani, 2020, p. 142).

3 The metaphor used by the European Court of Human Rights to allude to the noble function of the press is well-known, namely the "watchdog of democracy" (ECHR, 27 March 1996, *Goodwin v. United Kingdom*; resumed most recently by ECHR, 7 March 2021, *Sallusti v. Italy*).

4 For a complete overview of the rules governing secrecy and the limits of publishing court documents, see Orlandi (2017, p. 48) and Voena (2017, p. 1113).

Procedure establishes that the act of investigation is covered by secrecy until the defence becomes aware of it and, in any case, not beyond the end of the investigation. This means that there is an absolute ban on publication, except in exceptional cases where the Public Prosecutor has the power to lift secrecy on certain acts when strictly necessary to continue the investigation. Now that internal secrecy has been lifted, the need is to ensure, first of all, the cognitive integrity of the trial judge, who, due to the principle of separation of the phases, cannot know the acts carried out without cross-examination in the phase of preliminary investigations; it is also necessary to protect the correct formation of evidence during the trial, children and vulnerable persons. Well, the system of external secrecy opted for by lawmakers is the result of a compromise, criticised by many: once internal secrecy has been lifted, it is forbidden to publish the act; however, a journalist can disseminate its content, by means of a summary or a paraphrase (art. 114, paragraph 7, of the Italian Code of Criminal Procedure). The choice is a clear expression of the lawmakers' preference for the freedom of the press. Clearly, silence on the progress of investigations cannot be prolonged for long: the community must be informed about the course of criminal justice also in the non-public phase. The prohibition to publish photographs depicting a person under arrest *in vinculis* remains in place in order to counter the spectacle of police operations and specially to safeguard the presumption of innocence, since, as we know, a person in handcuffs evokes an idea of guilt. The prohibition of publishing investigation documents does not include documents containing judicial acts such as the order of precautionary custody adopted in the preliminary phase. These documents, however, almost always contain statements or wiretapped dialogues so that, if disclosed, they end up bypassing the prohibition to publish the document. Article 116 of the Italian Code of Criminal Procedure, which governs access to records, should be mentioned in this regulatory framework: records that are no longer covered by internal secrecy may be acquired by anyone who is interested. The most controversial problem of the relationship between the press and the criminal trial lies in this particular aspect. The execution of the request to gain access to the records is, in fact, left to the discretion of the judicial authority, determining a substantially non-uniform application of the rule, which leaves space for favouritism and instrumental use: sometimes access to the documents is granted, others it is not, or it is granted only to some "privileged" persons. Hence the phenomenon of so-called judicial indiscretion, namely leaks.

Obviously, the attention of judicial reporting cannot dwell on a trial for too long. That is why the press is used to turn the spotlight on the first steps, the initial phases, even though they are covered by secrecy and practice shows that journalists can still gain access to the news of the initial, and the most appealing, documents of an investigation[5]. This is evidence of the inadequacy of the current legislation, which therefore deserves fine-tuning.

The favour shown for the right of judicial reporting must not and cannot become a way to bypass the rules[6]. Relationships between prosecutors and the press are not always transparent, and favours bestowed by one side are often repaid by giving only one side of the story, the prosecution's. Degenerations such as the guilty rhetoric of which the press is the herald when it spreads sensational news of the successes of investigators are commonplace. For the press, news of a warrant or individuals being included in the list of suspects is sufficient to arouse the interest of public opinion, but if the news is not explained, public opinion is led to reach the wrong conclusions, without any regard for the principles and rules on which the Italian criminal trial is based. Therefore, the notice of pending inquiry becomes an indictment, an indictment becomes a conviction, and a pre-trial detention order becomes the execution of a sentence of conviction. The media end up attributing to the first steps of an investigation incorrect and inappropriate probative value, thus attaching to these a reliability that they should not have. Since these are investigative findings that come from the prosecutor, and not evidence, if disclosed without being duly set in context, they contribute to making public opinion tend towards believing in the guilt of the defendants. One should focus on the professionalism and impartiality of journalists, so that they can fit for the institutional task that they have been attributed. First and foremost, journalists should know the rules of the criminal trial, and, as judicial reporters, follow them.

5 The journalist-cum-sleuth is no longer a "watchdog of democracy" but a "lapdog of the public prosecutor's office". (Giostra, 1994, p. 59).

6 The criterion that should guide journalists is to consider all relevant records of investigations as worthy of being published and, among those that are not relevant, to consider only those informations that are actually of public interest to be worthy of being published. This is the stance expressed by Strasbourg in the leading case of the European Court of Human Rights, Third Section, 7 June 2007, *Dupuis v. France*: to divulge news of public interest even if still covered by secrecy is equivalent to exercising the right to inform the public. Basically, for the supranational court, the criterion of public interest underlying the freedom of the expression must prevail over the need to protect the secrecy of investigations.

The media criminal trial and its distortions

In trials held in the media, the distortions of the media narrative are greatly amplified: the distortion of reality takes on more worrying dimensions, as the line between journalistic documentation and dramatized reconstruction is blurred. From reality-TV as a mirror of reality, we pass to a style of TV that produces reality, which gives people a mere illusion of absolute transparency, which is the result of the firm belief that we are eyewitnesses to events. This anticipates the long wait for the trial to satisfy the cognitive impatience of public opinion, setting up an informal and rapid alternative forum to reconstruct the dynamics of the case with the aim of ascertaining responsibilities. It is a speedy trial out of phase with the ordinary sequence of the proceedings, focused on the first steps of the investigation, without a third-party judge, without limits to the admission of evidence, without an effective cross-examination, and without a judgement that comes at the conclusion of a criminal proceeding that provides the defendant with guarantees and protections. The people's verdict is, in fact, immediate, the trial is held before entering the courtroom, while the judge's sentence comes years later, when the people's court has already made its own, with the paradox that if the judgement differs from the media verdict it is looked upon with distrust, while if the two verdicts do match, then it is perceived as evidence that judicial action follows a path that is too slow, complicated and uneconomical. Public opinion does not have the tools to critically evaluate what is represented by the media, confusing what is true from what is a fanciful reconstruction of events.

But what is most troubling is the interference that the media trial has on real justice. There is a real risk of jeopardising the outcome of the investigation and the entire trial. The media trial is first and foremost a spectacle. It does not matter if the ordinary course of the trial dynamics is distorted or if an allegedly innocent person is found guilty; it does not matter if values such as the judge's cognitive integrity and serenity are attacked.

It often happens that those who will be questioned as witnesses in the real trial are interviewed by reporters; that technicians or self-styled experts are invited to give their opinion on the dynamics of the case, while the assessments carried out by the experts appointed by the judge are in progress. The result is "street trials" that are detrimental to the defendant's constitutionally guaranteed rights, the proper dialectic between prosecution and defence, the proper formation of the evidence and the psychological serenity of judges (Conti, 2022, p. 30). The latter is a very delicate aspect, especially when the judging panel is made up of the people's judges[7], whose status as non-professional judges, lacking technical knowledge of the law, and their natural social proximity to the case in question, risk resulting in a judgement tainted by an unconscious tendency to conform to the judgement shared by the community to which they belong (Montagna, 2012, p. 278).

The possible conditioning that mass communication can exert on the exercise of judicial power is a much debated topic. It is assumed, on the one hand, that a judge cannot be harmed in its integrity and impartiality by show trials conducted on TV (Liberati, 2018, p. 13)[8]. The Italian Court of Cassation[9] shares this opinion where it stated that "the press campaigns, however heated, bitter or hammering, or the pressure of public opinion are not per se suitable to affect the judge's freedom of judging, accustomed to being the subject of critical attention without that involving that a judge's impartiality can be damaged", since "the deplorable spilling over of so-called show justice, seeing newspaper headlines or watching entire talk shows that deal with judicial events still in progress in which every single argument, at times far-fetched, at times contradictory, is dissected [….] has ended up becoming such a normal phenomenon that no one pays attention to it anymore".

On the other hand, it is objected that the media inevitably ends up exerting a psycho-emotional pressure on judges, conditioning their judgement. It may happen, in fact, that the hammering by the media, in particular on television and on the web – through press conferences called by investigators, suggestive videos, targeted news leaks, publications of the content of trial documents point in one direction only – can affect the judge's sentence-making process. Judging with serenity requires not to see: that is the reason for the blindfold that covers the eyes of the goddess justice and that allows her to be impartial and unbiased. Yet, the media overwhelms us with images and videos, not always genuine, holding outside the courtrooms a parallel trial, which, with its own rules, timing and language, comes to a verdict that ends up in the courtroom inevitably influencing judges. And it is "[…] at the emotional and psychological level that media accusation theories risk becoming an undue key to interpreting and evaluating the available evidence" (Casiraghi, 2021, p. 8).

7 See Council of Europe Recommendation Rec 2003(13), with particular regard to jury trials or trials with non-professional magistrates.

8 According to whom judges have by now acquired (or should strive to acquire) the culture of the unusability of evidence which they have come to learn of.

9 Cass., III section, 12 May 2015, no. 23962, Picardi, in *Mass. Uff.*, no. 245215.

Institutional communication and protection of the presumption of innocence: A good starting point?

A final consideration concerns the difficult balance between the right to report and the protection of personal dignity. The state of the art shows us a regulatory reality that is not perfect and should be rewritten through a meticulous balancing act of the multiple values involved. A first step in this direction can be found in Italian Legislative Decree No. 188 of 2021, adapting it to Directive 2016/343/EU on the presumption of innocence [Conti (2021, 6), Caneschi (2021,10)]. Lawmakers have provided for so-called institutional communication in two forms: proactive, i.e., functional to the dissemination of correct information that avoids presenting the suspect as guilty before the final sentence, and reactive, i.e., implying the duty of the judiciary to correct incorrect information disseminated by the press. Basically, only the Public Prosecutor or their delegate should have relations with the press, and the disclosure of news about the ongoing criminal proceeding can only take place by means of press releases or press conferences (in the latter case a motivated document indicating the relevance for the public is required). In any case, the external dissemination of information on criminal proceedings is permitted only when it is strictly necessary to continue the investigations or when other specific reasons of public interest apply. In addition, the manner and context of institutional communication should not give the impression of an anticipated guilty sentence, and information should be provided in a way that clarifies the stage at which criminal proceedings are, while respecting the presumption of innocence.

That said, we should ask ourselves whether imposing institutional communication can be considered an adequate solution to resolve the distortions deriving from the media trial. Another question is whether working on communication strategy can prevent leaks, which are often steered and uncontrolled. Obviously, the decree has not resolved the regulatory shortcomings concerning access to documents, providing, for example, for direct access to all documents no longer covered by secrecy. This solution is considered by many to be suitable for triggering healthy competition among reporters, which could result in better quality journalism (Bartoli, 2017, p. 68). Of course, caution is needed: a document in the file may be still in raw form, not yet processed or verified. In the future it might turn out that it has no criminal relevance and is therefore not relevant to the proceedings, and, nevertheless, the journalist who comes into its possession could disclose it only because the news *prima facie* appears to be of public interest. However, since it is raw data, its knowledge by the journalist should be allowed on condition that he or she knows how to read the judicial documents, how to select the information that can be published from news that cannot be published according to uniform ethical criteria established by the law not with vague and generic formulas, but with rigor and determination[10].

Certainly, the current legislation still seems inadequate.

Truthfulness of the information and objectivity in description must be paramount. Reality shows us, instead, how subjective truth prevails, the one constructed by the communicator to please readers. The correctness of communication depends on subjective ethics, but "communication must take inspiration in the way it is presented from criteria of clarity, conciseness and timeliness and it must concern information of real public interest" Canzio, 2021).

The media trial condemns without leave of appeal, distorting the ordinary dynamics of the criminal proceeding, presenting and describing something significantly different from what it actually is. The further risk is that of altering democratic dynamics, inducing the community to call for reforms or to refrain from doing so not on the basis of the actual phenomenon but on the basis of the phenomenon as it is presented to it. In practice, public opinion is shaped by the media and through the media it reaches lawmakers.

The only real antidote is free and plural information, but above all it should be responsible and professional: journalists should perform their institutional task, communicating the truth and respecting the roles and rules of the trial. The current ethical standards that protect correct information, such as the Testo Unico dei Doveri del Giornalisti (Consolidated Text on Journalists' Duties), which incorporated the 2009 Code of Ethics, have not been effective. Perhaps disciplinary sanctions for violating them should be tightened. The same can be said of the rules of ethics for judges and lawyers. In short, while there is a body of ethical rules, there is a tendency to ignore them[11].

---

10 It is worth mentioning the proposal made by Ferrarella, p. 8: journalists should renounce the claim to write everything immediately, in exchange, however, for the fact that at certain time and procedural deadlines, as the events unfold and the individual stages of investigation are brought to the attention of the interested parties, they are put on a par with the parties involved in the proceedings solely in terms of being admitted to direct and legitimate access (not as a more or less worthy, more or less scrupulous beggar) to the documents of the proceedings in all the phases in which this circulation already occurs in fact, though to a dangerously incomplete and imprecise degree.

11 For example, the 2018 guidelines of the Italian Consiglio Superiore della Magistratura (CSM), High Council for the Judiciary, are basically neglected: to avoid distortions, they called for the judiciary to abide by the principles of objectivity, transparency and comprehensibility when directly communicating their actions, avoiding the dissemination

If the objective is balanced and measured judicial information, it is necessary to avoid fuelling prejudices that drive public opinion to believe in a defendant's guilt and that have the effect of widening the gap between applied justice and expected justice and thus exacerbating citizens' distrust in justice.

The hope is that journalists will return to the courtroom to tell the story of how justice is carried out in the cross-examination of the parties, to tell the story of the public trial, the heart of the criminal proceeding, the sacred space devoted to the formation of evidence, the only one that a judge can use to decide. In the investigation phase, on the other hand, there is a need for restrained information that aims to inform and not to arouse public opinion[12]. To this end, the new rules introduced to protect the presumption of innocence could blunt the distortions of a narrative that almost always sees the defendant guilty, focused exclusively on the results of a phase devoted only to collecting – and not shaping – evidence, which is usually presented as if it were real evidence[13].

Institutional communication, in addition to reporting news in an official form, should also contribute to explaining it to the community, taking into account the stage at which the proceedings are and the probative value or otherwise of the document being reported, so as to compensate for the lack of adequate technical training of journalists. The important thing, however, is that the system of official communication should not operate under a monopoly regime, leaving reporters free to find the information independently, but also remembering that they have the duty to check its reliability, despite the official nature of the source, avoiding "prejudicial acquiescence to the prosecution's thesis, inadequate detachment from the judicial 'power', sometimes ideologically – as well as uncritically – considered a 'counter-power' of that absolute evil called 'politics' " (Borzone, 2016). Information must remain plural and democratic, and the decision as to whether or not the news is of public interest cannot be left to prosecutors. For its part, journalists should report the facts and not only the investigations of prosecutors. Pluralism is therefore of central importance to the information system, which is managed by companies with economic, political and ideological interests.

---

of incomplete or inaccurate news and privileged relationships with certain members of the media community.

12 Unfortunately, the news is also a product, and as such it often follows economic criteria. In the justice sector, the product that sells the most is the one "that responds most to the expectations of the 'market', i.e., the citizens: the product of 'retributive' justice with a 'short supply chain', i.e., one that is not mediated", Varano (2022) points out.

13 Stella (2021) calls for this.

On the other hand, if justice is subject to social control, as a counterweight to the independence and autonomy of the judiciary, in order to make social control effective, it is necessary that justice be transparent and comprehensible, that it be able to speak to the citizen and, therefore, communicate. The public's right to be informed is matched by a duty of information on the part of the judicial authority from the earliest stages of the investigation[14].

Conclusions

To conclude, there are still some perplexities about the real effectiveness of the remedy introduced by Legislative Decree No. 188 of 2021 so that suspects and defendants have an effective remedy in case of violation of the rights conferred by Directive (EU) 2016/343 (Article 10). Lawmakers have provided that, in the event of violation of the right of the suspect and the defendant not to be represented as guilty, the interested party may, on penalty of forfeiture, within ten days of when they come to learn of the measure, request its correction, when necessary to safeguard the presumption of innocence in the trial, and on the request for correction the trying judge shall issue a reasoned ruling within forty eight hours from its filing. If the request for correction is not granted, there is an emergency appeal to the court, which may order publication of the correction. Clearly, there are several reasons to doubt the suitability of this remedy, beginning with how the relative procedure is to be initiated. The situation of weakness in which suspects or defendants may find themselves could likely encourage them to desist from initiating a request for correction. In this regard, it has been duly pointed out (Varano, 2022) that the decree limits the remedy to certain documents, leaving out many others that are often used to feed the media trial, such as, for example, the documents in which an acquittal is described as due to some procedural reason, indicating the person as certainly guilty, but not punishable, or the search and seizure decrees in which the alleged responsibilities are reconstructed, indicating the relative means of proof. It should also be noted that it is not very effective to entrust public authorities, politicians and the judiciary, with the protection of not being tried by the media, since it is;

14 Europe recommends this in Recommendation Rec 2003(13) of the Committee of Ministers of the Council of Europe; as well as Opinion (2013) No. 8 of the CCEP (Consultative Council of European Prosecutors) on “Relations between the Prosecutors and the Media”, where it is suggested as a means of communication by the public prosecutor press releases and press conferences, also held with the cooperation of police authorities.

a form of protection against something that takes place in a space outside the investigations. It is preferable by far to entrust it to a "third" party, such as a guarantor of the rights of persons under investigation or under trial. A subject capable of protecting, even *ex officio*, the rights of those who are subject to a media trial and those who are potentially exposed to one by documents of the judiciary that violate European principles and national rules, but also by "extra-trial documents" spread in the *media* and *social networks*[15].

References

Amodio, Ennio: Estetica della giustizia penale. Prassi, media, fiction. Giuffrè: Milano 2016.

Bartoli, Roberto: "Tutela penale del segreto processuale e informazione: per un controllo democratico sul potere giudiziario". Diritto penale contemporaneo (3), 2017, pp. 59–77.

Borzone, Renato: Presentazione de L'informazione giudiziaria in Italia. Libro bianco sui rapporti tra mezzi di comunicazione e processo penale. Pacini Giuridica: Pisa 2016.

Caneschi, Gaia: "Processo penale mediatico e presunzione d'innocenza: verso un'estensione della garanzia?" Archivio penale web (3), 2021, pp. 1–23.

Canzio, Giovanni: "Il linguaggio giudiziario e la comunicazione istituzionale". Giustizia insieme, 19.5.2021, retrieved 6.6.2022 from https://www.giustiziainsieme.it/it/giustizia-comunicazione/1738-il-linguaggio-giudiziario-e-la-comunicazione-istituzionale-di-giovanni-canzio.

Casiraghi, Roberta: "Informazione giudiziaria, processo mediatico e imparzialità del giudice". Archivio penale web (3), 2021, pp. 1–15.

Conti, Carlotta: "Cronaca giudiziaria e processo mediatico: l'etica della responsabilità verso nuovi paradigmi". Archivio penale web (1), 2022, pp. 1–33.

Ferrarella, Luigi: Il "giro della morte": il giornalismo giudiziario tra prassi e norme. Diritto penale contemporaneo (3), 2017, pp. 4–19.

15 The proposal was made by Varano (2022), according to whom "the media trial is a *virus* that affects not only the person directly concerned, but society as a whole, in which it spreads at an uncontrollable speed and has long-term effects that cannot be detected immediately. Competence, therefore, cannot be left to the individual judge even on the sole matter of legitimising the weak party tried in the *media*, nor to the sole space of the investigation or trial".

Giostra, Glauco: "Giornalismo giudiziario: un ambiguo protagonista della giustizia penale". Critica del diritto (1), 1994, pp. 54–61.

Giostra, Glauco: "La giustizia penale nello specchio deformante della cronaca giudiziaria". Rivista di diritto dei media (3), 2018a, pp. 1–16.

Giostra, Glauco: "Per la democrazia, peggio delle false notizie ci sono le false verità". Corriere della sera, 30.9.2018b, retrieved 17.10.2018 from http://www.fondazionesardinia.eu/ita/?p=15122.

Giostra, Glauco: Prima lezione sulla giustizia penale. Laterza: Bari 2020.

Iacoviello Francesco M.: "Conclusioni. Il processo senza verità". In: Conti, Carlotta (eds.): Processo mediatico e processo penale. Per un'analisi critica dei casi più discussi da Cogne a Garlasco. Giuffrè: Milano 2016, pp. 219–224.

Liberati, Edmondo B.: "Prassi, disciplina e prospettive dell'informazione giudiziaria". Diritto penale contemporaneo web, 12.1.2018, pp. 1–22, retrieved 6.6.2022 from https://archiviodpc.dirittopenaleuomo.org/upload/9677-brutiliberati2018a.pdf.

Mantovani, Giulia: "Processo pubblico e mass media". Gli speciali di Legislazione penale, "Processo e garanzie della persona" – Atti del Convegno in onore di Mario Chiavario, 19.10.2020, pp. 141–154, retrieved 6.6.2022 from https://www.lalegislazionepenale.eu/wp-content/uploads/2020/10/Mantovani.REV_.pdf.

Montagna, Mariangela: "Il ruolo della giuria nel processo penale italiano ed in quello statunitense", In: Montagna, Mariangela (eds.): L'assassinio di Meredith Kercher. Anatomia del processo di Perugia. Aracne: Bari 2012, pp. 259–285.

Orlandi, Renzo: "La giustizia penale nel gioco di specchi dell'informazione. Regole processuali e rifrazioni deformanti". Diritto penale contemporaneo (3), 2017, pp. 47–58.

Stella, Valentina A.: "Recepimento della direttiva europea sulla presunzione di innocenza: è davvero la fine dei processi mediatici?". Giustizia insieme web, 14.12.2021, retrieved 6.6.2022 from https://www.giustiziainsieme.it/it/processo-penale/2066-recepimento-della-direttiva-europea-sulla-presunzione-di-innocenza-e-davvero-la-fine-dei-processi-mediatici.

Varano, Giorgio: "Un garante dei diritti delle persone sottoposte ad indagine e processo". Diritto di difesa web, 27.3.2022, retrieved 6.6.2022 from https://dirittodidifesa.eu/un-garante-dei-diritti-delle-persone-sottoposte-ad-indagine-e-processo-di-giorgio-varano/.

Voena, Paolo: "Processo penale e mezzi di comunicazione di massa: un insanabile stato dell'arte". Processo penale e giustizia (6), 2017, pp. 1113–1132.

Stefano Pietropaoli

Extra computationem nulla salus? Considerations on democracy, fake news and blockchain

Abstract The possibility for individuals to interact without geographical constraints was hailed at the beginning of the 1990s as the start of an unstoppable process of democratisation. However, the increased complexity of the digital society and the scarcity of IT skills are leading to the progressive inability of social actors to control and critically select their cognitive sources, to the point of paralysing their ability to analyse them. Among the main focal points is the spread of fake news, which, mainly as a result of phenomena such as disintermediation and tools such as algorithms, filter bubbles and echo chambers, are able to pollute information. However, the very technologies behind the problem can also provide solutions. An interesting proposal to try to curb the problem of the massive spread of fake news is the use of blockchain technology to certify the origin of news. However, it is one thing to claim that blockchain represents a technology that can offer advantages, it is quite another to go so far as to contend that the use of solutions that leverage blockchain are capable of solving the problem at its root.

Keywords: Bubble democracy, fake news, freedom of thought, digital swarm, blockchain

Democracy and the digital revolution

It is a matter of fact that the spread of mass media – and television in particular – has played a decisive role in the transformation of twentieth-century democracy (Zolo, 1992). What we call the “digital revolution” has become an integral part of this process, having consequences of extraordinary significance (Lévy, 1990). Many have seen in it an event capable of breathing new life into democracy. Yet there seem to be many reasons that call for caution and invite to consider more carefully the actual democratic potential of the digital revolution (Gilder, 2018).

In a debate often dominated by the polarization between “doomsters and initiates” – neo-luddites and techno-fanatics, those nostalgic for paper and pixel addicts – one of the most frequent arguments is that of the unstoppable emancipatory force inherent in digital technologies (Formenti, 2008). The web, in this perspective, is seen both as a very powerful tool for implementing knowledge in general (and political competence in particular) (Mathew, 2016) and as a means capable of offering new forms of democratic participation, from electronic voting to the instant referendum.

In this regard, it is unquestionable that new technologies can provide tools with a high democratisation capacity (Rodotà, 1997 [2004], Rodotà, 2013; Fioriglio, 2017; Gometz, 2017). However, these tools must be employed in the political, economic and legal context in which this drive for democratisation is capable of achieving coherent, non-distorting effects. One excellent example is electronic voting (Mancarella, 2013). Just to refer to the Italian legal system, the use of a digital voting system – which allows one to express one's preference via a terminal (instead of pen and paper), and ensures therefore error-free electronic counting, as well as the immediate communication of the results – is clearly compatible with the principles established by Article 48 of the Italian Constitution (personality, equality, freedom and secrecy), only if used in a polling station operated by human beings. A vote expressed with a click from the computer in one's own home, even with the use of sophisticated authentication systems, would obviously have nothing "democratic" about it.

This latter consideration, I believe, calls for a more general reflection on digital technologies and on how the web has undergone an evolution that has distanced it increasingly from the media that preceded it. At its inception, the "web" was a sophisticated communication tool that could be managed by few who, thanks to their computer skills, were able to communicate via machines. The incredible increase in computing power of processors has rapidly made it possible to develop increasingly user-friendly operating systems, thus making it possible for pre-school children (as well as primates, as the odd story of the macaque Naruto teaches) to create digital content.

The web has thus become "demedialised": anyone who owns a device and has access to the web is able to produce and disseminate information.

The possibility of interaction between individuals without geographical constraints – now offered by technologies accessible to users without computer skills – was hailed at the beginning of the 1990s as the start of an unstoppable process of democratisation (Castells, 1996). But how naive that view was has been demonstrated by the recent history of the web: from the original idea of a "distributed" network (Baran, 1964) it has become "decentralised" but polycentric (Dorogovtsev & Mendes, 2013). In other words, the evolution of the web has led to new forms of concentration of power, resulting increasingly dominated by private oligopolies.

Web users, from mere consumers, have become producers of information. Here is the core issue: the exponential increase in data and information cannot in any way match the increase in the users' ability to select information, thus developing their knowledge (and even less the "tacit knowledge" Polanyi talked about), their critical sense, and their political competence. In the days of big data, the variety and complexity of information is so great that it discourages us from embarking on critical paths and invites us to become completely self-referential.

Algorithms are now an integral part of all decision-making processes, from defining the probable recidivism rate of a convicted felon to buying the next book to read, from buying and selling shares on the stock exchange to choosing the partner most akin to our needs (Lettieri, 2020). This scenario is dominated by an absolute sense of impotence of the majority of citizens, by the rhetoric of the algorithmic black box, and by the hypostatisation of Technics. But behind every choice in the technological field there are nonetheless human beings, whose actions escape democratic control. As Bernard Stiegler noted, after all, Marx and Engels had already argued that "man is a technical being. As such, he is lured to his technics. There is a dominant class that seizes this luring power of technics to dominate those who are lured by it. And that is that way it is" (Rouvroy & Stiegler, 2015).

The increased complexity of the digital society and the scarcity of IT skills are leading to the progressive inability of social actors to control and critically select their cognitive sources, to the point of paralysing their ability to analyse them. The latter would consist precisely in the possibility of excluding what is not essential: an operation that today is suffocated by the flow of information that overwhelms us (Stiegler, 2012).

Increased knowability is not equivalent to increased knowledge. More information does not mean better decisions. Conversely, too much information creates an electronic cloud that blurs vision. As Han has argued: information now de-forms, and communication is now cumulation.

From citizen to user

Digital technologies hold enormous democratic potential. But they can also turn out to be a very effective tool for strengthening ideologies that are anything but democratic. In other words, I consider unfounded both the visions of a necessarily salvific technology and the arguments of those who demonise the digital era as the insidious and incurable fruit of the capitalistic logic.

What I would like to stress is that these technologies can and should be governed politically. There is no destiny in the drift we are witnessing: but we need awareness, knowledge, open-mindedness and imagination to get out of the phase of denial of politics that we are experiencing (Preterossi, 2011).

It was not "Technics" – a hypostatised fetish that would like to justify impossible nostalgia – but the neoliberal and depoliticising post-ideology that made the oligopolies that control the web possible. We are living what we can call, without any rhetoric, a "revolution": but even if it is a revolution in our way of living, thinking and being, it is not a democratic revolution. In the absolute majority of cases, if we do a search on the internet, we use the Google search engine; if we buy goods online, we use the services offered by Amazon; if we want to interact with other individuals at a distance, we use Facebook/Instagram/WhatsApp (the trinity of the empire founded by Mark Zuckerberg); if we use a mobile phone, we exploit the potential of the Android (Google again) or Apple operating systems. "Distribution" has become "concentration," but I insist: this outcome was the result of a series of deliberate and entirely "political" choices (Foroohar, 2019; Taplin, 2017; Wu, 2013).

The ability of capitalism to merge with the control of technological development and its applications is revealed in its most recent expressions: the "capitalism of platforms," or – to use Shoshana Zuboff's expression – "surveillance capitalism" (Zuboff, 2019). Regardless of the different perspectives to address the problem, the criticisms levelled against this outcome share an analysis of the crisis of democratic institutions and the deterioration of citizenship. The parable in which modern citizenship was inscribed, in which individuals moved within political communities to which they felt responsible, has come to an end. Citizens have become consumers, mere passive users of variously offered services, who express their decisions in the same way they express their purchasing preferences. And in the same way, therefore, their electoral inclinations can be scrutinised, through data mining processes.

If the life of users is by now increasingly projected into the internet, also the individual political and legal dimension suffers the same fate. We are thus witnessing an integral datafication of the personality, with remarkable consequences in terms of the effective protection of freedoms and the concrete exercise of fundamental rights. Reduced to holograms floating on screens, users incessantly exchange data and information about what they do, think, and experience. Existence is totally "protocolled" and made controllable this way, continuously monitored by a digital panoptic: this is not a futuristic dystopia, but a factual reality, linked to the unwritten law by which the control of users is the more pervasive the easier it is to use the devices they use.

As Damiano Palano has effectively argued (Palano, 2020), the critique of party rule and the push towards the personalisation of politics – elements that already characterised the "democracy of the public" – have combined in a new dynamic of the relationship between citizens and information and communication technologies: while voters had previously been radio listeners and television viewers, but still an "audience", an audience watching a common show, now they are turning into self-referential, fragmented "bubbles", unable to express a political unity.

Public space is thus reduced to a "social network". Democratic discourse is no longer possible because the user is structurally aphasic. There is no discourse but only opinions: a continuous regurgitation of "likes" that bubble up in a fragmented and polarised cyberspace, where one's own convictions are made to resonate without being open to any dialogue and, often, with a hybrid violence – suspended between virtual and real – but no less terrible.

Fake news between disinformation and misinformation

In the scenario I have tried to outline in the pages above, the new structure of information opens up new issues that call into question fundamental rights such as freedom of expression.

The current structure of the internet allows anyone with a device and access to the web to disseminate information and news. While, on the one hand, this can represent an opportunity for the development of public discourse and the guarantee of plurality of information, on the other hand, it is necessary to reckon with the possible negative consequences of this dynamic.

The way information is produced, disseminated and used has changed at a dizzying pace since the advent of the web. A system in which the individual plays an active and completely new role has now been established: just having a PC, a smartphone or a tablet transforms users from simple users of the news to producers. The web has broken the monopoly of mainstream media. Today everyone can create information, comment on information already on the web or on social networks, share content entered by others and propose new content. This fracture has contributed to the start of the so-called disintermediation process, i.e., the elimination of intermediation structures – "filters" or "intermediate bodies" – between two or more users in the process of communication and service provision.

The speed of access, the possibility to connect anywhere thanks to mobile devices, the almost zero cost, and the immediacy make the internet – and social media – the individual's favourite place to get information. The primacy previously held by traditional media is thus undermined and we are heading towards the twilight of the media established in the twentieth century.

This phenomenon of disintermediation overrides the classic structure of professional associations, including that of journalists. In doing so, it also eliminates the controls and standards required to perform certain roles in society, creating a particularly significant vulnerability to the status of the information professional. And in this perspective, we cannot fail to perceive as alarming the increasing diffusion of phenomena such as filter bubbles and echo chambers, which represent a complex device of information pollution.

The "filter bubble" is the result of algorithms that analyse the behaviour of individual users online, show them the news, content and posts most akin to their opinions and in line with their ideas. The consequence is that users are offered content that is always close to and consistent with their own opinions and are seldom offered news and information that embraces other lines of thought or alternative beliefs. Often users are unaware of this mechanism also because of the illusion of total freedom that the web conveys to us and that lets users believe that they are completely independent in their choices and in the way they inform themselves on the internet.

The phenomenon of filter bubbles is accompanied by that of echo chambers. Whoever is inside an echo chamber will hear repeated endlessly what is being said by others who are with him or her, in an increasingly confused and distorted version-but nevertheless destined to remain the only source of information for the reference group. People who get their information from a social network and have only people who embrace the same ideas as they do in their circle of friends find themselves at the centre of an echo chamber where every thought will be returned and amplified without anyone questioning it. This triggers the further dynamics of the "confirmation bias", which pushes individuals to select in a biased way the ideas and information that surround them, instinctively going to seek and prefer those in line with their ideals and personal beliefs. This mechanism is crucial for the effectiveness of fake news: if the false or manipulated news that is proposed to us is oriented in the same direction of the ideals of those subject at the centre of the echo chamber, they will surrender any critical defence and will tend to accept that news as true without checking it in any way.

The current prominence of social media means, therefore, that information is increasingly produced by the flow of content generated by users, who are inclined to divide into groups that are similar from an ideological point of view. This is a "friendship paradox" that causes the creation of illusory majorities that use social media as a sounding board for invented, misleading, and distorted information. It is important to note that fake news can be either false or misleading and can be spread either with the deliberate intention to deceive or out of actual ignorance of the truth, i.e., even without being aware of the incorrectness of the news spread. Fake news can in fact be a source of disinformation but also of misinformation: in the first case, a piece of news is intentionally created and spread with the awareness that it is false; while in the second case, a content, an article or a post is shared ignoring its falsity. In other words, fake news not only alters a subject's or social group's perception of reality but causes them to share it in a spontaneous and participatory manner.

It is also important to highlight that not everything that is called fake news is completely false news: on the contrary, the most dangerous and effective fake news is precisely that mix of verified and invented news. There are several varieties of misinformation, each with unique characteristics. First, there is satire or parody, which lacks the will to create fake news but risks obtaining the same result as the latter if the satirical news is taken as true. On other occasions, however, misinformation is achieved through the manipulation of facts and data that are carefully selected to convey a negative image of the person or event being reported. Other manifestations of incorrect information are identified in false connections and false context. In the first case, the title of the article or the images it contains evoke something different from what turns out to be real content.

In summary, fake news are completely false news or partially true but manipulated, passed off as correct information and circulated via the web. Their creation or spreading can be voluntary, that is, accompanied by the user's awareness that the news is false (in this case we speak of disinformation), or it can be involuntary, when the user ignores the falsity of the news and, believing in its truthfulness, spreads it (in this case we speak of misinformation).

This is an ancient phenomenon, but one that has taken on unprecedented importance with the advent of the Web 3.0. Through social networks, fake news can circulate with a much greater speed and capacity than in the past. Circulation is facilitated by the fact that they are articulated through a decentralised communication system in which barriers to entry, control mechanisms, and clear accountability provisions are lacking. It is in this thicket of information that more or more frequently we come across fake news, deep fakes, hate speech: phenomena that pollute information and make it difficult to distinguish reliable news from false or low quality news.

The mechanism of the filter bubble immediately reveals how the strategy that drives the spread of fake news has been developed in a commercial context: the algorithm profiles users, captures their tastes and attitudes to spending, and provides news capable of attracting their attention and influencing their behaviour. The user "shares" the content multiple times, triggering an amplifying effect that conveys, along with the fake news, advertising.

If this mechanism was born as a marketing strategy, however, it is on the political level that it unlocks its disruptive potential. Fake news does not only serve to convey incentives to purchase, but it also produces politically relevant effects, conditioning the opinions of users and creating pockets of consensus on specific issues, to the point of undermining a country's political stability.

The disintermediation that characterises the Web 3.0 enables new political uses of communication. Just think, for example, of an election campaign. Today, a candidate can have direct contact with voters effectively, quickly, and at negligible cost compared to traditional strategies. A speech given during an election campaign can be delivered in a certain place and be shared immediately, reaching the electorate in every corner of the country. Perhaps there is, however, another more relevant aspect: the ability to tailor the message to the audience. Thanks to the traces that users leave more or less voluntarily on social networks, the organisers of an electoral campaign can draw on a whole series of information and data regarding possible voters. This way, thanks to an accurate analysis of elements such as gender, age, likes, place of residence, habits and so on, it is possible to tailor an electoral message that suits the audience to which it is addressed. At the same time, social platforms make it possible to analyse public opinion at all times, rendering the mood of the electorate on a given topic intelligible moment by moment, and thus enabling real-time updates of electoral strategy.

In this perspective, it is clear that if the use of social networks is accompanied by the use of fake news, the process of building political consensus is radically disrupted. For empirical confirmation, suffice it to think of the results of the Brexit referendum or the election of the 45th President of the United States (Allcott & Gentzkow, 2017), events in which fake news played a significant role in overturning forecasts, favouring respectively the exit of the United Kingdom from the EU and the victory of Donald Trump over Hilary Clinton (Special Counsel R.S. Mueller III, 2019).

Blockchain: Does technology take, does technology give?

We have seen how the use of social networks has facilitated access to a colossal mass of information without mediation and control. If we are living today in the age of integral knowability, we are not, however, living in the age of integral knowledge. On the contrary, we have to face phenomena that make access to reliable information more complex, thus altering or even preventing access to knowledge, the forming of political opinion, and public debate.

Law (along with rights) is being challenged by technologies. However, the very technologies behind the problem can also provide solutions. For some time now, research centres and software solution developers around the world have been developing strategies that make it possible to detect early and then break down the viral potential of fake news (Sharma et al., 2018).

Combating the spread of fake news on social media, which is ontologically predisposed to the creation of "noise" (Zubiaga et al., 2018), in particular, requires a critical approach in the perspective of data mining (Shu et al., 2017), which allows identifying solutions that are data-oriented (and therefore aimed at the analysis of datasets), but also feature-oriented (content analysis), model-oriented (supervised or completely entrusted AI tools) and application-oriented (aimed at the detection or removal of fake news).

There are many tools that digital technologies can offer to ensure the trustworthiness of news disseminated online (Zhang & Gupta, 2018). I am thinking, in particular, of the ever-widening array of artificial intelligence strategies built on applications of machine learning and deep learning (Ahmed, Traore, & Saad, 2017), such as genetic algorithms (Sahoo & Gupta, 2020) and Graph Neural Networks (Mahmud et al., 2022).

But the most promising solution is probably the use of blockchain technology. The idea behind blockchain technology dates back to the 1990s, when Stuart Haber and Walter Scott Stornetta (Haber & Stornetta, 1991) developed a technique capable of marking digital documents in order to prevent the possibility of backdating them. However, it is only twenty years later, with Satoshi Nakamoto and the invention of Bitcoin, that the blockchain has established itself as a tool for exchanging information in a secure way, without the intervention of third parties responsible for ensuring its certainty. Bitcoin does nothing more than allow a participant to carry out digital transactions directly with another party without the need to resort to and rely on a centralised intermediary to validate payments.

Blockchain, as it is known, is only one of the available Distributed Ledger Technologies (DLT). This particular category of technologies is characterised by a peer-to-peer distributed ledger system in which the entries in the database are replicated across a sequence of nodes. Moreover, the system is regulated through shared and distributed consensus mechanisms among all nodes.

Distributed ledger technologies differ both from technologies based on a centralised ledger as well as those that are characterised by a structure based on a decentralised ledger. The centralised ledger, which is the most common, is characterised by a strictly centralised one-to-many relationship. In this type of technology everything must be managed in relation to a centralised structure: trust comes from the authoritativeness of the person at the head of the organisation. The decentralised ledger, instead, introduces a centralised set-up at local level, so that there will be several central cores characterised by a one-to-many relationship, which, in turn, have relations with all the other central cores always through a one-to-many relationship. This will give multiple central entities. In the decentralised ledger, governance and trust are still entrusted to a centralised entity.

The distributed ledger differs from these two models in that there is no central entity: there is no head, and a fully distributed logic is adopted. Trust and governance are distributed among all parties, as is consensus.

The blockchain is, therefore, a structure of shared and immutable data: a sort of digital ledger in which information is contained in blocks accompanied by fingerprint hashing and temporal validation. Each transaction is signed and validated, and then stored in blocks and associated with a timestamp. Each block is uniquely associated with a hash, generated by a non-invertible algorithmic function. Each block, besides its own hash, also contains that of the previous block (with the only exception of the first block, called "genesis"). This way the hash acts as a link between the various blocks and guarantees the non-alteration of the block and the data it also contains thanks to strategies such as "proof-of-work" (PoW), a consensus algorithm that avoids the risk of tampering even by attackers with very high computing power. The set of blocks concatenated by means of a cryptographic function and hashes constitutes the ledger, that is, the public register in which all transactions are recorded in a definitive, transparent and sequential way.

The key actors in this mechanism are the miners who compete, through computers or computer systems, to solve the mathematical problem (the proof-of-work) that allows adding a new block to the chain and to obtain a reward. Whenever a new block is added, it is sent to all nodes in the network, which can then verify the block and ensure that it has not been altered. If this check is successful, each node adds the block to its blockchain.

Unlike centralised structures, where control, data management, and authorisations are entrusted to a central authority and the system is based on the trust placed in it by all participants, the management of data updates in distributed registries is done with the cooperation of the participants that make it possible to access, distribute, and share data. Thanks to the use of one of the many existing consensus mechanisms (which can be distinguished into permissionless or public, permissioned or private, and hybrid chains), these technologies allow intermediation by third parties to be eliminated: all users participating in the chain can verify and control the correctness of transactions.

The decentralisation that characterises the blockchain makes it difficult to manipulate and particularly reliable. If one of the nodes belonging to the chain is compromised, the other nodes retain their operability and preserve the chain.

And so here we come to the core of the matter: is it possible to imagine the use of blockchain technology, as it is able to guarantee the immutability, traceability and authenticity of the data it contains, in the fight against disinformation and misinformation online?

Thanks to its characteristics (consensus-based decentralisation, transparency, security, immutability and efficiency), blockchain has proven to be an extremely versatile tool, suitable for use in a very wide variety of sectors. Often associated with the phenomenon of cryptocurrencies, this technology represents a platform for the exchange of information and data that can potentially be used in the most diverse fields: from supply chain management to the management of a patient's medical record, from the remuneration of the authors of a piece of music for each listening session to the automatic refund of a flight ticket that has been cancelled.

The blockchain can therefore also offer the possibility to trace the process of a news item, to keep track of its author, to ensure that it has not been modified during distribution and sharing on online platforms, and to determine with certainty the date on which an article was written. In other words, it could fulfil two important functions to counter the spread of fake news: certify the author making it possible to assess his or her reliability and trace the path of the news item allowing for a reconstruction of its "history".

However, it should be stressed that, while on the one hand the mechanisms highlighted above can prove to be a valuable aid in assessing the reliability of news, ascertaining its origin and originality, on the other hand blockchain is not able to guarantee that the news is "true": if the news originally recorded is false, it will remain so, and the chain will limit itself to guaranteeing its traceability, originality and origin.

Many research centres around the world are working in this direction. One of the most promising systems (Qayyum, Qadir, Janjua, & Sher, 2019) is based on a structure with three key elements: a publishers management protocol manages the authors of the publications, checking the reliability and authoritativeness of the sources; a smart contract for news publishes the news on the network, accompanying it with relevant information such as the name of the publisher, the timestamp, the public cryptographic key; finally, building the news blockchain, composed of "honest miner nodes", maintains the integrity of the system.

However, it is also important to account for more basic experiments that have already been translated into reality. Some journalists, for example, use the platform Lirax.org to affix, next to their signature at the bottom of an article, a QR code that allows access to the original document certified in blockchain, accompanied by the date and time when the article was recorded, place of signing and certification of the author, and proof of his or her actual membership in a professional association.

In addition, more and more news agencies are using blockchain technologies to make the news they disseminate easily identifiable. Each publication is accompanied by a digital stamp that ensures its originality. For each news item published by the agency it is possible to know with certainty the correspondence with the original content, the date and time of registration, the author and so on. Such a solution allows readers to check the origin of the news consulted and any updates made to it, thus facilitating what readers need to do to verify the reliability of the news.

Having a mechanism that allows you to verify the origin of the news from an authoritative source and its originality is an unquestionable advantage for readers who need to choose who to trust in the vast ocean of information available online. However, in my opinion, to claim that this is the ultimate solution to an extremely varied and ever-expanding phenomenon seems naive.

While digital technologies are both capable of generating problems and offering solutions to these very problems, the “human factor” must always be considered fundamental. As tools, digital platforms always remain “neutral”: it is not the social medium itself that generates good or bad information, but it is always the use that people make of that tool that allows evaluating its reliability, lawfulness, correctness, and justice.

This, of course, does not mean adopting a drastically critical perspective towards the undeniable opportunities offered by digital technologies. Rather, it means taking on the burden of knowing how these tools work: without this effort, it is not possible to build the awareness that must necessarily guide the relationship between human beings and technological tools.

In conclusion: we welcome all efforts made to develop strategies to counter the phenomenon of fake news using algorithms, blockchain and neural networks. However, we cannot expect that the answer to the problem can be delegated to machines, because just as the human factor is part of the problem, the human factor must also be part of the solution. Therefore, a “hybrid” approach based on awareness and the wise use of “intelligent” tools, always under the supervision of humans (Shabani & Sokhn, 2018) seems to me the only viable way on the road to defend free information and democracy.

References

Ahmed, Hadeer / Traore, Issa / Saad, Sherif. Detection of online fake news using n-gram analysis and machine learning techniques. *International conference* *on intelligent, secure, and dependable systems in distributed and cloud environments*. Springer: Dordrecht, 2017, pp. 127–138.

Allcott, Hunt / Gentzkow, Matthew. Social media and fake news in the 2016 election. *Journal of economic perspectives, 31*(2), 2017, pp. 211–236.

Baran, Paul. On distributed communications networks. *IEEE Transactions on Communications Systems, 12*, 1964, pp. 1–9.

Castells, Manuel. *The Rise of the Network Society. The Information Age: Economy, Society and Culture*. Blackwell: Cambridge, MA-Oxford, 1996.

Dorogovtsev, Sergey N. / Mendes, José F. *Evolution of Networks: From Biological Networks to the Internet and WWW*. Oxford University Press: Oxford, 2013.

Fioriglio, Gianluigi. *Democrazia elettronica. Presupposti e strumenti*. Cedam-Wolters Kluwer: Padova, 2017.

Formenti, Carlo. *Cybersoviet. Utopie postdemocratiche e nuovi media*. Raffaello Cortina: Milano, 2008.

Foroohar, Rana. *Don't Be Evil. How Big Tech Betrayed Its Founding Principles*. Currency: New York, 2019.

Gilder, George. *Life After Google*. Washington D.C.: Regner Gateway, 2018.

Gometz, Gianmarco. *Democrazia elettronica. Teoria e tecniche*. EtS: Pisa, 2017.

Haber, Stuart / Stornetta, Wakefield S. How to time-stamp a digital document. *Journal of Cryptology*, *3*(2), 1991, pp. 99–111.

Lettieri, Nicola. *Antigone e gli algoritmi. Appunti per un approccio giusfilosofico*. Mucchi: Modena, 2020.

Lévy, Pierre. *Les technologies de l'intelligence. L'Avenir de la pensée à l'ère informatique*. La Découverte: Paris, 1990.

Mahmud, Fahim M. / Rayhan, Mahi / Shuvo, Mahdi H. / Sadia, Islam / Morol, Kishor. A comparative analysis of Graph Neural Networks and commonly used machine learning algorithms on fake news detection. *7th International Conference on Data Science and Machine Learning Applications (CDMA)*, 2022, pp. 97–102.

Mancarella, Marco. *eVoting e nuove dimensioni della democrazia*. Tangram Edizioni Scientifiche: Trento, 2013.

Mathew, Ashwin J. The myth of the decentralised Internet. *Internet Policy Review*, *5*(3), 2016, retrieved 1.6.2022, from DOI 10.14763/2016.3.425.

Palano, Damiano. *Bubble Democracy. La fine del pubblico e la nuova polarizzazione*. Scholé: Milano, 2020.

Preterossi, Geminello. *La politica negata*. Roma-Bari: Laterza, 2011.

Qayyum, Adnan / Qadir, Junaid / Janjua, Muhammad U. / Sher, Falak. Using blockchain to rein in the new post-truth world and check the spread of fake news. *IT Professional, 21*(4), 2019, pp. 16–24.

Rodotà, Stefano. *Tecnopolitica. La democrazia e le nuove tecnologie della comunicazione.* Roma-Bari: Laterza, 1997 [ediz. accresciuta 2004].

Rodotà, Stefano. *Iperdemocrazia.* Roma-Bari: Laterza, 2013.

Rouvroy, Antoinette / Stiegler, Bernard. Le régime de vérité numérique. De la gouvernementalité algorithmique à un nouvel État de droit. *Socio, 4*, 2015, pp. 113–140.

Sahoo, Somya R. / Gupta, Brij B. Classification of spammer and nonspammer content in online social network using genetic algorithm-based feature selection. *Enterprise Information Systems*, *14*(5), 2020, pp. 710–736.

Shabani, Shaban / Sokhn, Maria. Hybrid machine-crowd approach for fake news detection. *IEEE 4th International Conference on Collaboration and Internet Computing (CIC)*, 2018, pp. 299–306.

Sharma, Karishma / Qian, Feng / Jiang, He / Ruchansky, Natali / Zhang, Ming / Liu., Yan. Combating fake news: A survey on identification and mitigation techniques. *ACM Trans Intell. Syst. Technol., 37*(4), (2018, August), 41.

Shu, Kai / Sliva, Amy / Wang, Suhang / Tang, Jiliang / Liu, Huan. Fake news detection on social media: A data mining perspective. *SIGKDD Explor. Newsletter*, *19*(1), 2017, June, pp. 22–36.

Special Counsel R.S. Mueller III. *Report on the Investigation into Russian Interference in the 2016 Presidential Election.* Washington D.C., 2019: https://www.justice.gov/storage/report.pdf.

Stiegler, Bernard. *Ètat de choc. Bêtise et savoir au XXI siècle.* Paris: Fayard/Mille et une nuits, 2012.

Taplin, Jonathan. *Move Fast and Break Things.* London: Macmillan, 2017.

Wu, Tim. *The Master Switch. The Rise and Fall of Information Empires.* London: Atlantic Books, 2013.

Zhang, Zhiyong / Gupta, Brij B. Social media security and trustworthiness: Overview and new direction. *Future Generation Computer Systems*, *86*, 2018, pp. 914–925.

Zolo, Danilo. *Il principato democratico. Per una teoria realistica della democrazia.* Milano: Feltrinelli, 1992.

Zubiaga, Arkaitz / Aker, Ahmet / Bontcheva, Kalina / Liakata, Maria / Procter, Rob. Detection and resolution of rumours in social media: A survey. *ACM Computing Surveys* (*CSUR*), *51*(2), 2018, pp. 1–36.

Zuboff, Shoshana. *The Age of Surveillance Capitalism. The Fight for a Human Future at the New Frontier of Power.* PublicAffairs, New York, 2019.

Part IV Information and Misinformation Design

Anna Catania

Packaging and plastic are synonymous with waste: But is that really the case?

Abstract: The paper presents the value of packaging and misconceptions about plastic. In addition to shedding light on clichés and fake news about plastic and packaging, it outlines opportunities to consider the use and management of packaging for responsible waste collection; and new forms of consumption and supply chains to facilitate the transition from the current linear consumption model to one that is more responsible and open to a circular economy.

Keywords: Fake news, packaging, plastic, waste, LCA, circular economy

Introduction

For nearly a decade, packaging and plastic have been known to the public for the damage they cause to the environment and the side effects that also affect human health.

That is why the combination of packaging and plastic is now targeted by a smear campaign that perhaps does not take into account what the real problem is, thus resulting in the demonization of anything made with plastic. It is before everyone's eyes that there is a packaging and plastic problem, and everything and the opposite of everything has been said about it, but do we really know what we are criticising?

Do we really know what the advantages and disadvantages of using plastic and packaging are?

Plastic, before being considered a major cause of environmental pollution, was celebrated for its flexibility and strength, its lightness, and its thermal and electrical properties. So much so that since the 1960s, production has increased resulting in the development of new products that have changed everyday life with applications from the most traditional to the most innovative sectors: it has replaced the material (often metal alloys) of various household products with innovative lighter tools, in the medical field it has enabled the development of life-saving devices, it has made cars and airplanes lighter, microchips and laptops are made with it as well as innovative packaging that allow us to protect, distribute and preserve even the organoleptic characteristics of a food product. And it is precisely with regard to packaging that there is an increased interest in the media. There are two reasons for this: one is the consequence of its use to make storage, protection, and logistics more efficient, and the other is related to the management of its end of life. Packaging, though often short-lived, is critical to protect the quality of food, our health, and at its end of life, if managed well, it becomes a new material (secondary raw material) to be used for new objects. At this point, which way to go to evaluate the role of packaging? How to make an informed choice about whether to buy a product with or without packaging? To this end, the first thing to do is to highlight and make people understand the role that packaging plays in the life cycle of products and in our lives. Packaging will have to be considered for the services it offers us and for those that, if it is recycled or reused, it can assure us because only then will it no longer be considered as waste. To nurture this responsible relationship between packaging and the environment, it is crucial for it to be increasingly designed not as a single unit but embedded within a system where the role of the relationship between content and container is also considered. Instead, often times the waste prevention strategy chosen is the reduction or removal of packaging, without considering though the consequences. Are we sure this is right?

When designing packaging, it is crucial to strike the right balance and to know how to assess well between overpackaging, which causes significant impacts, and underpackaging, which is the source of greater impacts. This justifies the presence of responsible packaging especially for perishable agri-food products. FAO too indicates packaging as critical to reducing waste in the food supply chain (FAO, 2011). In spite of these guidelines on the use of packaging and plastic in food packaging, some opinions have become increasingly widespread: plastic pollutes the environment and must be replaced, plastic should be used less because it creates problems in disposal, plastic is the cause of waste and must therefore be replaced with paper and degradable materials. As mentioned above, these beliefs, based solely on mere rumours and fake news, blame plastics as being the one and only cause for environmental problems.

In the light of these allegations, the response from companies has been to change the information about environmental activities they communicate to consumers to appear responsible and greener, instead of implementing appropriate strategies. This phenomenon is called greenwashing, that is, covering up poor environmental performance with positive communication about the environment by a company (Delmas, Burbano, 2011). So, how can consumers be sure that the product they are buying is environmentally friendly?

The first and most important thing to do is to distinguish reliable information from hearsay, that is, to educate end consumers to consider only information that is supported by a serious assessment of environmental benefits through a Life Cycle Assessment (LCA). LCA is the tool for measuring environmental impacts by which any design choice, starting with the material, is assessed in terms of its environmental impact throughout the product life cycle (Consoli et al., 1993).

In the light of these considerations, we present ways to debunk some biases dictated more by gut feeling than by scientific studies that unwittingly lead us to erroneous conclusions. Case studies based on LCA analysis are proposed to understand, based on scientific evidence, the impacts that various materials have on the environment. Finally, we aim to help people understand, with examples, how the waste problem cannot be solved by an alternative material to plastic alone but requires new supply chains and consumption patterns with lifestyles different from those still designed for a linear economy.

How useful is it to replace plastic with another material?

Replacing plastics with other materials without changing the consumption and use model of products risks shifting environmental impacts from one resource to another. However, this is what companies have been proposing for a few years now. Why?

First of all, for a company, replacing a material in packaging is preferable to decreasing or eliminating it because there is no need to study the product, packaging and consequently production processes and distribution all over again. This change of materials is almost always from plastic to a bioplastic and is almost never supported with data from a Life Cycle Assessment so that end consumers can assess the concrete environmental benefits. This is an apparent expedient of companies that often gives rise to additional problems. It should be borne in mind that a biodegradable plastic is not always compostable. It is not enough to say that a product is biodegradable, but it is necessary to inform how it should be disposed of and whether it is compostable. Consumers should be given clear information on biodegradable and compostable plastics used for packaging and how they should be properly disposed of. There is so much confusion and disinformation in this regard: compostable packaging and biodegradable packaging are not the same thing. Compostability is a well-defined property that is tested and evaluated according to tests and standards (UNI EN 13432). The compostability process takes place under controlled conditions of aeration and at high temperatures. Compostable packaging should not be left in the environment and should be disposed of in wet waste. Packaging marked as biodegradable should not be disposed of in the environment or wet waste but in the non-recyclable waste because biodegradable does not also mean compostable.

Biodegradability is a very complex process that depends on both the material to be disposed of and the conditions in which it is found (soil, water, presence of microorganisms, etc.).

In conclusion, the findings of two research studies can help us understand the ineffectiveness of replacing plastic with another material to solve the environmental pollution problem. The first is an Imperial College London study titled "Examining Material Evidence: the Carbon Fingerprint", which compared the life cycle of different types of packaging made of different materials (paper, glass, aluminium, and steel) and found that replacing plastic with an alternative in packaging does not produce a lower environmental impact in terms of green house gas emissions (Voulvoulis et al., 2019). The second is a research study by the Danish Environmental Protection Agency[1], which compared the impact of shopping bags of different materials (PET polypropylene, paper, cotton, biopolymers), evaluating resource use, and toxicity. For the end of life, it considered: incineration, recycling, and reuse of a trash bag before final disposal. It found that the most sustainable grocery bags are those made of low-density polyethylene (LDPE) followed by paper and biopolymer bags (Bisinella et al., 2018). These scientific studies draw the conclusion that the problem with plastic is not plastic at all, but its management, and focusing on replacing materials in response to an aversion to plastic accomplishes nothing. Perhaps it is more appropriate to start thinking about how useful a disposable product really can be, or whether other solutions can be found to meet this need, new solutions that lead to environmental and even economic benefits. One alternative to single-use packaging is reusable packaging, which is beginning to develop new business models. Some companies are proposing new consumption systems, urging consumers to reuse containers in order to prevent and reduce waste generated by packaging. Therefore, new reuse systems for the sale of consumer products adopt a strategy that works no longer on recycling but on another R of the European waste hierarchy[2], prevent containers from becoming waste, and take up the concept that the best waste is waste that is not produced. Through these new approaches based on reusing, sharing, and extending the life cycle of products, we can develop solutions that provide environmental and economic benefits

1 The Danish Environmental Protection Agency / Life Cycle Assessment of grocery carrier bags, 2018.

2 The waste hierarchy sets out the order of priority and is contained in the Waste Framework Directive (*directive 2008/98/EC*) that establishes regulations and policies for waste treatment in the European Union. The priorities in waste management are: prevention, reuse, recycling, other recovery (e.g., energy), and disposal.

over the current system. This is presented in a 2019 study *Reuse: rethinking packaging* by the Ellen MacArthur Foundation[3]. The study highlighted the economic benefits associated with reuse systems from streamlining operations to building consumer loyalty through deposit systems as well. Prominent among the various cases of reusable packaging on the market is the Loop project, which combines zero waste and a variety of branded products.

The Loop project is a platform for reusable packaging designed by the U.S.-based company TerraCycle[4] that involved many international brands and convinced them to develop new containers compatible with this model. The new containers are made of glass, steel or plastic and designed to be reused and entirely recycled at the end of their useful life. On the first purchase, a consumer pays a deposit, which will be refunded each time they return the packaging. There are various ways in which consumers can return the products: if they purchased the products at a store with a Loop department, they will bring the containers back to the store and get the deposit back. Loop will then pick up the containers to sterilise them and put them back into circulation. For online purchase, nothing changes: Loop provides a bag where empty containers can be collected and then picked up. Loop sells packaging as a service, which brings not only a benefit to waste elimination, but also redesigns packaging, which with the help of design regains its own identity. Therefore, the success of this service is certainly also related to the new packaging that design has managed to transform into specific products for each content and therefore worthy of special attention, thus encouraging reuse. Designing packaging that will last and be reused hundreds of times will not be enough to solve the waste problem, but it succeeds in giving design an extra boost and making a new step toward a circular economy.

Can we do without packaging?

Many consumers probably wonder what is the point of the plastic film that often covers vegetables. It is not yet another example of waste of plastic and it has its own utility. The use of plastic film is important for those vegetables that have a very high respiration rate and once they are cut from the plant, they no longer

3 The Ellen MacArthur Foundation is a charity, established in 2010, that works to spread the Circular Economy.

4 TerraCycle is a U.S. company based in Trenton, New Jersey, started in 2001 by Tom Szaky. From a start-up focused on some alternative recycling practices, it has become a model of eco-capitalism, demonstrating how it is possible to be profitable thanks to sustainability.

have a supply of water and nutrients, and begin to consume what they have inside them.

To extend the useful life of some vegetables, efforts are being made to reduce the rate at which they breathe by taking oxygen from the atmosphere. That is why fruits and vegetables are often sold covered with a transparent film. One of these is broccoli for its very high respiration rate. Tests have shown that five days after harvest a broccoli kept at room temperature has a decrease in quality. By packaging it instead in plastic film, it is good for up to twenty days with almost no reduction in quality, remaining green and even good for cooking for many more days. (Esturk, Ayhan, Gokkurt, 2014).

Thanks to plastic packaging, oxygen and carbon dioxide can be released by those vegetables that have a fast metabolism. The plastic film for this type of packaging, sometimes with micro-perforations, is one of the most technological materials that performs an additional function besides the structural one, turning into active packaging to extend the useful life of food. Some types of active packaging allow the regulated passage of gases, others contain substances that absorb oxygen or ethylene, which is a gas released by the vegetables that accelerates ripening (Lucera et al., 2011).

In packaging, the protective plastic film succeeds in avoiding potentially greater waste, which is not only food waste, but also involves the water, fertilizer, and energy required to plough, harvest, package, and distribute the product. At this point, we should perhaps ask ourselves whether it is right to talk about "Plastic free" and demonise plastic just because it is plastic.

Conclusions

Without packaging and plastics, we could not solve some of the daily problems and needs surrounding the protection of certain agri-food products, but we definitely need to take responsibility and keep them out of the current linear economy. This way, packaging and plastics can achieve the value that must take into account both the benefits derived from their performance, which guarantee the end user, and continue to produce value even after it becomes waste. The solution to the generation of their waste is that plastic and consequently plastic packaging must be disposed of properly to allow their reuse, recycling or composting. However, recycling packaging, despite being preferable to various disposal options, is not enough when talking about the green transition. We cannot help but think about eliminating products with a short life span and redesigning new solutions and processes instead. New reuse, sharing and rental systems to improve the sustainability of today's consumption models can contribute to reducing waste and pollution. Therefore, the target should be to shift, thanks to the contribution of design, to new prevention and reuse strategies, including from paying to use a product to paying for the use of the service of that packaging, taking into consideration the entire supply chain and all the players according to a model that follows the circular economy.

References

Badalucco, Laura: *ll buon packaging.* Dativo: Milano, 2011.

Bisinella, Valentina / Albizzati, Paola Federica / Fruergaad, Astrup Thomas/ Damgard, Anders: *Life Cycle Assessment of Grocery Carrier Bags*. The Danish Environmental Protection Agency: Copenhagen, 2018.

Consoli, Frank / Allen, David / Boustead, John / Fava James / Franklin, William / Jeans, Allan A. / Parrish, Rod / Perriman, Rod / Quay, Beth / Séguin, Jacinte (eds.): *Guidelines for Life Cycle Assessment: A Code of Practice*. SETAC: Portugal, 1993.

Del Curto, Barbara: *Packaging naturalmente tecnologico*. Dativo: Milano, 2016.

Delmas, Magali A. / Burbano, Vanessa C.: "The drivers of greenwashing". *California management review*, 54(1), 2011, pp. 64–87.

Esturk, Okan / Ayhan, Zehra / Gokkurt, Tolga: "Production and application of active packaging film with ethylene adsorber to increase the shelf life of Broccoli (Brassica oleracea L. var. Italica)". *Packaging Technology and Science*, 27(3), 2014, pp. 179–191, retrieved from 10.1002/pts.2023.

FAO: *Global Food Losses and Food Waste – Extent, Causes and Prevention*. Food and Agriculture Organization of United Nation: Rome, 2011.

Lucera, Annalisa / de Oliveira Costa, Charles / Mastromatteo, Marcella / Conte, Amalia / Del Nobile, Matteo A.: "Fresh-cut broccoli florets shelf-life as affected by packaging film mass transport properties". *Journal of Food Engineering*, 102(2), 2011, pp. 122–129, retrieved from 10.1016/j.jfoodeng.2010.08.004.

Piergiovanni, Luciano / Limbo, Sara.: *Food Packaging. Materiali, tecnologie e qualità degli alimenti*. Springer Verlag: Milan, 2010.

Robertson, Gordon L.: *Food Packaging. Principles and Practice*. CRC Press: Boca Raton, 2006.

Voulvoulis, Nick / Kirkman, Richard / Giakoumis, Theodoros / Metivier, Pauline / Midley, Vick: *Examining Material Evidence: The Carbon Fingerprint*. Imperial College London: London, 2019.

Serena Del Puglia

Citizen journalism and social innovation. Digital platforms for qualitative implementation of participatory journalism

Abstract: The power of the media, internet, social networks and sharing platforms system, together with the pervasiveness of digital tools in everyone's life, have made communication an ever more articulated, and increasingly complex field. In addition to accelerating the dissemination of content and information, these tools have opened the door to extensive participatory information processes. The article takes some emblematic case studies of participatory journalism platforms that can make a valuable contribution to setting in motion co-design processes in the news world. Within this framework, an attempt will be made to frame a scenario in which design can find its own place in a planning space yet to be systematised, in which communication design can play a substantial role.

Keywords: Participatory journalism, fact-checking, communication design, social innovation, culture

Web_information_participatory_processes

Mass democratic access to new media and the internet, coupled with extensive and pervasive use of digital tools, the spread of social networks and open sharing platforms have made it possible for all to disseminate content and information, making communication an ever more articulated field with a high degree of complexity.

Openness, accessibility, collaboration and free distribution are therefore the main features of a new world of communication, which is taking shape online in ways that are also very different from each other. The internet allows anyone, at least ideally, to become at the same time both an author and distributor of information and of their own thoughts, through the richness of hypertext notation, the possibility of using different modes of communication-text, images, audio, video, 3D animations – at almost no cost and with a relatively low level of computer literacy, bypassing traditional figures such as the publisher, graphic designer or distributor (Bollini, 2014, pp. 133–134). Especially in the Web 2.0 and thanks to social-sharing or blogging platforms, the internet has become an alternative and often preferred vehicle of information and content compared to more official communication channels, laying the foundations for a structural crisis[1] (Baricco, 2018, pp. 76–77) that has progressively affected all the professional figures involved in the process (journalists, authors, graphic designers, editors).

The prosumer concept[2] (Toffler, 1980) has gradually transformed the role of readers. They can post and share comments, write reviews, rank genres, overwrite original content and produce new content themselves. Through the ability to interpret and visualise data, and to make (certain and secure) news and information usable and comprehensible, communication design is confronting, today, practices that make domestic and widespread design activities previously delegated to specific fields of experience and professionals. And in view of such new perspectives, the project opens up to dynamic systems – generative platforms – in which "the final artifact no longer matters (or at least not only) as much as the dialogic structure that is built and that represents the connective tissue[3], the environment in which new forms of dialogue are built […] collaborative and open source models that base their paradigm on the collaboration between designers and users" (Piscitelli, 2019, pp. 106–107). Each co-author, who brings specific normative, technological, and experiential needs, is a modifying element in the narrative process whose core terms are therefore "relationship" and "confrontation". In these "new geographies of dialogue" (Piscitelli, 2018) and knowledge, which are digital, mutable and dense, the designer is therefore required to have "a much more articulated knowledge […] capable of […] structuring real, dedicated [dialogic] languages" (Piscitelli, 2019, p. 106).

1 Alessandro Baricco, in his book *The Game*, offers a very effective description of the mechanism he calls *destruction of the elite*: "where collective intention and intelligence become action without having to be mediated through intermediate authorities."

2 Derived from the combination of the words *producer* and *consumer*, in participatory journalism this term identifies the overlapping roles of the reader as media producer and consumer.

3 De Kerckhove, a philosopher, sociologist, and follower of McLuhan, who is attentive to issues related to communication and the conditioning that technology has on language, defines the internet, as a form of extension of private intelligence and memory made collective. This is the starting point for the argument (1997) that takes Lévy's (1996) idea of connective intelligence a step further. It aims at connecting, linking, and establishing ties between intelligences, and at the relationship they have. See https://sociologia.tesionline.it/sociologia/articolo/l-intelligenza-connettiva-di-de-kerckhove/3331

Digital platforms for "risk-free" participatory journalism[4]

Citizen journalism, which emerged in the late 1990s, somehow "institutionalised" precisely this form of multi-player cooperation, basing its raison d'être in the active participation of readers (in the management, dissemination and creation of information). Closely linked to the issue of widespread design democracy, many emblematic experiences developed within design for social innovation take this path and focus on information as a primary public good of citizenship, which can redefine the active role of the community in processes of cultural production and promote and enhance civic engagement (De Biase, 2013), through online democratic participation (Battaglia, 2019).

PeaceLink[5], founded in 1991 as a BBS network[6], is a team of volunteer editors, technicians and translators and it has been engaged for years, through civic monitoring, the use of open data (images, videos, etc.), the study of public documents and deeds, in supporting humanitarian, environmental protection, and international solidarity initiatives. The validity and authoritativeness of their work have been validated by many national agencies and newspapers, which have used the results achieved by the "group" investigations and inquiries as a reference for news and in-depth reports.

Launched in 2000 by Oh Yeon Ho, a former investigative journalist, the South Korean newspaper OhmyNews (Fig. 1) relies on the contribution of more than 35,000 citizen-reporters in the news-making process.

The dissemination of the news is filtered on the one hand by the fact-checking work done by an editorial staff of about fifty professional journalists who are responsible for selecting the material and verifying especially the news articles, and on the other hand by a process of checking the truth of the news by the

4 Anthony Dunne and Fiona Raby worked in the field of Interaction Design and were pioneers and keen observers of the implications that technology could have on humans and society. As we can reed in Ghisleni and Privitera's book (2009): with the advent of social networks "the technocratic spectre of the risk society [...] has also begun to materialise at the social level", generating "a world perpetually on the verge of uncontrollability, [...] in which social actors intervene with no small chance of influencing the course of events".

5 *PeaceLink*'s pacifist activity began after the First Gulf War in 1991 and continued during the Kosovo War (1999) and Iraq War (2003), when the website's consultations peaked.

6 Bulletin Board System (BBS) is a telematics system that allows remote computers to access a central computer to share or retrieve resources. Developed in the 1970s, the system formed the core of early amateur telematic communications, giving birth to basic telematics.

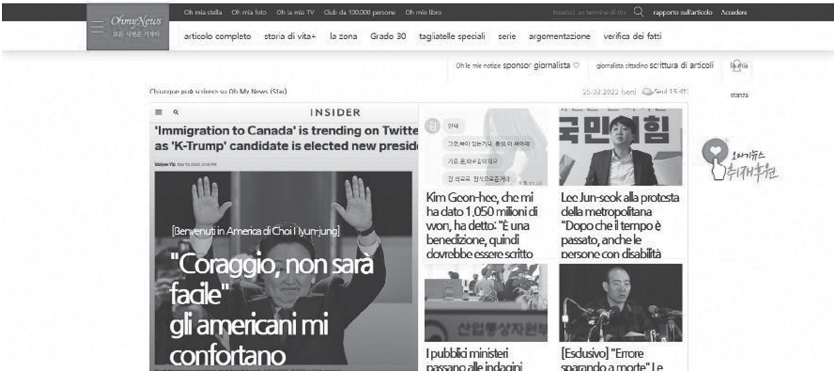


Fig. 1: Homepage of the platform OhmyNews

readers themselves, who are called upon to adhere to the newspaper's internal code,[7] which offers general guidelines on content, the feedback from which is displayed in infographics and charts, which can be consulted alongside the news on the website.

AgoraVox, one of the first Europe-wide examples of an online newspaper built with citizen input, was born following the example of OhmyNews. A hallmark of European participatory journalism, with its three versions in French (2005), English (2006) and Italian[8] (2008), Agoravox enables citizen contributions to be published alongside articles written by professional journalists, in the deep-rooted belief that the Web can foster the development of individual intelligence and create communities of practitioners by combining technical means and personal qualities. Each author takes responsibility for the truthfulness of the information published, and a following editorial step[9] provides for verifying the article's compliance with editorial policy (Fig. 3).

7 An in-depth examination of the topic can be found in Luca Rasponi's dissertation (2008) in Applied Computer Science titled *Peacereporter e il giornalismo partecipativo*.
8 Directed for Italy by Francesco Piccinini, founder of *Fanpage*, a digital information project based on social network interaction with citizens.
9 The core of the editorial staff consists of volunteer independent editors and research experts from the Foundation.

Fig. 2: Screenshot from the website OhmyNews. Section fact-checking, details of infographics highlighting the “degree of truthfulness” of information (author’s collage)

Fig. 3: Screenshot from the website AgoraVox. Section Politica editoriale

Fig. 4: Homepage of the platform Bellingcat

In addition to the dual author/editor filter[10], there is also the feedback from reader comments[11], which can also be edited according to editorial policy.

On the international scene, Bellingcat (Fig. 4) is an investigative journalism site founded in 2014 by British blogger Eliot Higgins.

Having become a benchmark for its methodology, Bellingcat[12] uses open-source intelligence technology and tools to track down data already available on the Web (e.g.: YouTube videos, Google Earth images, public databases, photographs circulated on Twitter) to be used to verify or reconstruct the evolution of a story. The foundation of the operation put in place by Bellingcat is the construction of a transparent and replicable methodology that can be used by any reader with little technological expertise to conduct surveys and checks, in a collaborative mix of expertise that rebalances power over the use of data. The Web becomes a treasure chest of data for journalists, activists and citizens who want to check the level of accountability and transparency of governments, political movements and other public and private organizations.

Conclusions

The transformation of the role of the reader (into author) ultimately undermines an established information system and opens many questions on the redefinition

10 Moderators are reporters who have published at least 4 articles and received a positive vote from readers.

11 The editors reserve the right to remove off from the website any article that proves to be inaccurate or incorrect even after they are published on the Web. Articles that are commercial, pornographic, or racist, or incite hatred or violence are rejected.

12 Bellingcat has now also become a point of reference for professionals, journalists, researchers and analysts with expertise in international conflicts, online extremism and cybersecurity

of roles and relationships between professionals and users. Open data and open source resources, and the ability of users to produce content, to publish it digitally and to distribute it independently really become a resource in which design repositions its expertise, but also an opportunity to reinvent its mission with respect to the complexity of tools and the migration of languages to other media registers (Bollini, 2014, p. 138). When the user becomes an active participant in the authoring and design process, design culture also needs to find new forms of relationship and dialogue.

In such a dense context, the communication design/er, working on a concise and immediate rendering of complex data, is called upon to find effective solutions to the distortions of digital communication, acting as an "enabling design/er" (Bollini, 2014, pp. 137, 138) capable of teaching "autonomy and self-help" skills (Geronimi Stoll, 2013), designing the conditions for accessing, and gaining access to, knowledge, enabling the proper construction and fruition of information and news -both verifiable and secure[13] – and providing citizens with the tools to make informed decisions, in knowledgeable democratic participation in culture and social life[14].

By shifting the focus from visualisation as a result to visualisation as a process (Ciuccarelli, 2014, p. 89), through the design of communicative artifacts, multimedia systems and tools, and graphical interfaces to communicate and make data, news, and information intelligible, communication design can build an interactive communicative system (Ciuccarelli, 2014, pp. 88, 89) that can enable cognitive processes that are very different in nature, requiring specific data and information processing[15]. By mediating points of view, offering keys for interpreting reality and combining individual visions with respect to collective scenarios, a cultural system (collective and connective) capable of illustrating

---

13 It is worth mentioning the new opportunities offered by Web 3.0 perspectives, which have yet to be explored. *Fact Protocol*, for example, is a multi-chain, scalable enabler of content verification to mitigate disinformation. The protocol uses two factors to validate news and facts. One uses News Registrars (NRs) and the other News Validators (NVs) to check again the facts and authenticate the citations/references attached by the NRs.

14 *Engaged Journalism Accelerator* (2018), sponsored by the European Journalism Centre, promotes participatory journalism with the aim of restoring trust in the media among citizens and developing new models of sustainability and economic independence.

15 In the desire for equitable (and secure) community-driven distribution of data through technologies still in the making (blockchain and dApps), the opportunities, and new challenges, offered by Web 3.0 open new application avenues for design, which will have to play a role in building new mental models of learning.

significant aspects of the relevant social reality is described. By interpreting conflicts and antagonistic positions (without unifying them), design can offer a valuable contribution[16] to renegotiate the meaning of our being a dialogical and cooperating collectivity (Piscitelli, 2019, p. 117), projecting toward "an idea of the future, […] [and designing] spores to affect reality" (Piscitelli, 2019, pp. 121–122).

References

Baricco, Alessandro: The game. Einaudi: Torino, 2018

Battaglia, Rosy: "Giornalismo civico e giornalismo partecipativo: cosa sono e perché". Micron, 02 Novembre 2019, pp. 20–21, retrived 10.3.22, from https://www.rivistamicron.it/terza-pagina/giornalismo-civico-e-giornalismo-partecipativo-cosa-sono-e-perche/

Bollini, Letizia: "Le merci comunicative digitali: quale ruolo per il designer? [Digital communication goods: what role for design and designers?]". DiiD 57, 2014, pp. 132–138, retrieved 10.3.22, from DOI 10.30682/diid

Ciuccarelli, Paolo: "Il design dell'informazione tra dati aperti e attivismo visual. [Information design between open data and visual activism]". DiiD 57, 2014, pp. 86–89, retrieved 10.3.22, from DOI 10.30682/diid

De Biase, Luca: I media civici. Informazione di mutuo soccorso. VITA/Feltrinelli: Milano, 2013

De Kerckhove, Derrick: Connected intelligence: The arrival of the web society. Somerville House: Toronto, 1997

Geronimi Stoll, Marco: Smarketing. Comunicazione per tutti i piccoli che hanno grandi cose da dire. Altraeconomia: Milano, 2013

Lévy, Pierre: L'intelligenza collettiva. Per una antropologia del cyberspazio. Feltrinelli: Milano, 1996

Piscitelli, Daniela: "Poetiche e pratiche dell'ascolto". In: various authors. Listening design. Il design per i processi di innovazione. LIStLab: Barcelona, 2018

Piscitelli, Daniela: First things first. Comunicare le emergenze. Il design per una contemporaneità fragile. Design experiences – Listlab: European Union, 2019

16 *The Montreal Design Declaration* (*World Design Summit*, Montreal, 2017) supports the central role of design in finding effective solutions to the planet's enormous economic, social and environmental challenges. See http://www.designplayground.it/2018/01/montreal-design-declaration-tutte-le-persone-meritano-di-vivere-in-un-mondo-ben-progettato/

Privitera, Walter: “Ulrich Beck: sociologia del rischio e nuovo cosmopolitismo”. In: Ghisleni, Maurizio / Privitera, Walter: Sociologie contemporanee. UTET: Torino, 2009, p. 55

Rasponi, Luca: Peacereporter e il Giornalismo Partecipativo. (University of Parma. School of Humanities And Philosophy. Degreecoursein Journalismand Editorial Culture – Academic Year 2008/2009), retrived 15.3.22, from http://www.lucarasponi.it/stanza101/wp-content/uploads/2015/06/PeaceReporter-e-il-giornalismo-partecipativo.pdf.

Toffler, Alvin: The third wave. William Morrow: USA, 1980

Salvatore Di Dio, Mauro Filippi & Domenico Schillaci

"Fake it 'til you make it": The designer playground for crafting prototypes, orchestrating frauds and pushing the ecological transition

Abstract In the past thirty years there has been a radical change in almost every business sector: companies nowadays offer increasingly complete packages or "bundles," i.e., combinations of goods, services, assistance, self-service and customer-focused knowledge. But it is services that have the lion's share. In this context, those involved in the servitization process, such as designers, entrepreneurs, and venture capitalists, seem to focus more and more on the customer experience than on enabling technology. This has led to the birth of many successful new companies as well as to financial scandals. The aim of this article is to understand how the "fake 'til you make it" approach in design and business has found a key ally in the media. Furthermore, in view of the unprecedented opportunities offered by ICT and artificial intelligence, and in light of the challenges of the green transition, we discuss its ethical and pedagogical implications for the entire field of design.

Keywords: Bauhaus, design pedagogy, as if, MVP, fake it until you make it, start-up

Introduction

One hundred years after the founding of the Bauhaus, in "Bauhaus Futures," Carl DiSalvo tackled the question "What would keep the Bauhaus community of teachers and students awake at night if the school were still active today?" and answered it by reformulating several diagrams of the original Bauhaus circular curriculum (image 1, left).

What is described as "A Pedagogy for a 21st-Century Bauhaus, Silicon Valley" (image 1, right), is a curriculum for a world steeped in digital products, where a young designer before dealing with algorithms, sensors, data, models, robotics, VR (Virtual Reality) and AR (augmented Reality), AI (Artificial Intelligence) and ML (Machine Learning), is called to have in-depth knowledge of complex systems, information and communication, behaviour, culture, politics and ethics. DiSalvo's diagram is very topical (RaiNews, 2022) and, as defined by the author himself, "close to contemporary practices of fabricating the artificial" (DiSalvo, 2019, pp. 77–82).

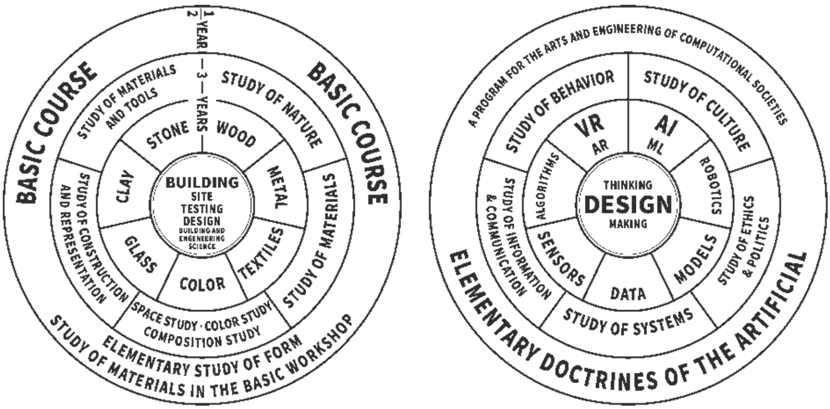


Fig. 1: Left is the original diagram, right is DiSalvo's 2019 proposal

Indeed, with the advent of the digital revolution, we have seen a radical change in almost every industry. The expectations of digital-first customers (Kraus et al., 2018, pp. 353–357) have driven companies from a wide variety of industries to offer more comprehensive products through the integration of services, assistance, self-service and information. But it is digital services that have radically and very rapidly revolutionised almost all industries (Vandermerwe & Rada, 1988, pp. 314–324), and today, unlike thirty years ago, it is precisely those companies that were born for this purpose or that have been able to adapt to new customer expectations that dominate financial markets around the world (Ghezzi, 2020).

The reason for such speed and success lies in two essential features of the digital and hi-tech industry: (1) thresholds for access to markets in the digital economy are almost irrelevant, (2) computational capacity appears to be increasing with a linear trend following Moore's law (Thompson & Parthasarathy, 2006, pp. 20–25), and this supports the promise that artificial intelligence systems have infinite possibilities.

These two characteristics have allowed those involved in servitization processes, such as designers, start-up founders, and venture capitalists, to increasingly focus on the customer experience (Stickdorn et al., 2018, pp. 136–140) than on the actual technology required for the services themselves to function (Livermore, 2007, pp. 82–86), while also neglecting the potential impacts on society, the environment, and the economy.

This approach can be summarized in the "fake it until you make it" culture typical of the innovation design world (Standing & Mattsson, 2018, pp. 385–399): in order to reduce business risk to a minimum and to be able to compete at low cost even with leading players in the industry, the experience of using the product/service is simulated from the start, leaving out the technical and logistical aspects, so that immediate feedback can be gathered from the market and thus validate the business model (Eisenmann et al., 2012).

Therefore, the designer is not designing the finished product but rather a plausible version of it, often even putting communication design before product design until market demand has been proven or confidence built in investors.

That said, it is therefore clear how thin and opaque the line is between designing an elaborate prototype and orchestrating a scam, especially in the burgeoning field of artificial intelligence, where technology seems magical, has the confidence of an increasingly less knowledgeable media and academia with less and less access to data. However, all this is difficult to grasp and corroborate.

This article therefore aims to trace the phenomenon's cultural origins, focussing in particular on the Theranos scandal, and finally to offer a new diagram for the 21st-century Bauhaus, as proposed by DiSalvo and adapted to the challenge of the green transition.

Simulate to survive

While in his famous "Survival through design", Richard Neutra described how beauty and utility cannot be separated in the art of design, today the boundaries of the debate in which designers of digital experiences work have been stretched to the concepts of "reality" and "intention".

The reference scenario for this ambiguity is that of the world of technological innovation processes and start-ups, and it affects the designers involved because, in stark contrast to previous decades, the start-up of a digital product/service can be realized with a "shoestring" budget thanks to the low cost of the tools needed to implement even the most complex prototypes (Petersen, 2015, pp. 143–152). Indeed, a profound transformation of the industrial structure of the world economy is currently underway. The production of intangible assets is taking an increasingly larger share of GDP; even more traditional industries are experiencing rapid technological change, and industrial spin-offs and start-ups of various kinds are springing up everywhere.

But for all intents and purposes, these new products/services are essentially unproven ideas that are based on entrepreneurs' intuitions about the unexpressed or currently unmet needs of potential customers. The key challenge here is that the new offering must be stand out from what already exists, but it cannot be so different as it risks being deemed unrealistic or impossible to execute. In the early stages of conceptualisation and development, entrepreneurs and designers tend to claim that their solution is distinctive and at the same time they try to establish the legitimacy of their project through branding and storytelling. Images and stories are developed and used to paint the picture of the entrepreneurs' visions and to build an image of the solution and the enterprise that aligns with the expectations of external audiences, such as customers and investors.

This is where "fake it 'til you make it" comes into the equation (Wood et al., 2021, pp. 117–125).

Reality and intention

"Fake it till you make it refers to the idea of projecting self-confidence in order to convince yourself that you can attain a goal that you feel as though you do not yet have the skills to achieve" (Mann, 2022, pp. 99–100).

According to psychologist Adler, "When people have difficulty […] speaking assertively or responding with some measure of empathy, the clinician might encourage them to act "as if" they were assertive or empathic several times a day until the next session. As people begin to act differently and to feel differently, they become different".

Acting "as if" gives people the opportunity to enact the best possible outcomes or create new stories about their lives. Asking people to fake it helps them overcome resistance to change by reducing risk. The rationale for this reconstruction strategy is that as someone begins to act differently and to feel differently, they become a different person (Watts et al., 2005, pp. 380–387).

So, the root of the "fake it until you make it" approach lies in the clinical suggestion of "as if", which is functional in transforming perception and thus the way those involved in the processes of change and innovation are perceived.

Investors are often those who encourage start-up founders to think big, and a high percentage of them fail anyway. So, what if someone stretches the truth a little (Griffith, 2018)?

Stories are built, and an image is designed consistent with the ambitions of the project (and the market) to overcome the "imposter syndrome."

This is not limited solely to communication design and storytelling, but often, in defining a product's or service's features, one pretends that it actually works using, for example, role play through prototypes or other materials that can facilitate the representation of intentions, referred to as Minimum Viable

Product or MVP (Duc & Abrahamsson, 2016, pp. 118–130). Even start-up founders with the best of intentions have to convince investors and customers to believe in a future in which their totally made-up idea will be real but, depending on the degree of verisimilitude of the prototypes and the degree of spectacular staging, such an approach can easily lead to stakeholder deception and thus fraud.

Theranos: Faked it but didn't make it

The story of Elizabeth Holmes, founder and former CEO of Theranos Technology and once heralded in the media as the next "Steve Jobs" (Stevenson, 2015), provides a chilling example of how the self-confidence underlying the "fake it until you make it" ethic can lead to self-delusion and fraud.

In 2003, at the age of 19, Elizabeth Holmes dropped out of Stanford University to found Theranos, the health-tech start-up that promised to revolutionize the blood diagnostics industry with a new technology that would make blood tests cheaper, more convenient and more accessible to consumers.

In September 2007, designer Ana Arriola joined Theranos as Chief Design Architect to develop the Theranos brand identity and to design the Edison device (later renamed minLab) for blood testing. Arriola had previously worked for Adobe, and when Holmes hired her, she was a senior product line manager at Apple and one of the original iPhone design team members.

According to "Bad Blood" author John Carreyrou, after only a few months at Theranos, the Edison machine whose design Arriola had been tasked with improving was not working, and after discovering that they were conducting tests using a defective machine on cancer patients for a study in Tennessee, she quit.

About six years later, in 2013, Theranos began to publicise its technology, which claimed to screen more than 200 health conditions with a few drops of blood drawn from a single fingertip, and all of this with the help of an artificial intelligence system as well.

Theranos' vision and its founder's story immediately generated media hype, allowing Holmes to make countless important public appearances (TedMed, 2014), and magazine covers (Kulwin, 2015). This attracted the likes of Rupert Murdoch and Henry Kissinger to join the company's board.

From 2003 until John Carreyrou's 2015 investigation in the Wall Street Journal (Carreyrou, 2015), Theranos raised $900 million and reached a market value of $9 billion. Then came the downfall climaxing in 2022 with the fraud trials for Holmes and her former partner Balwani (The Guardian, 2022).

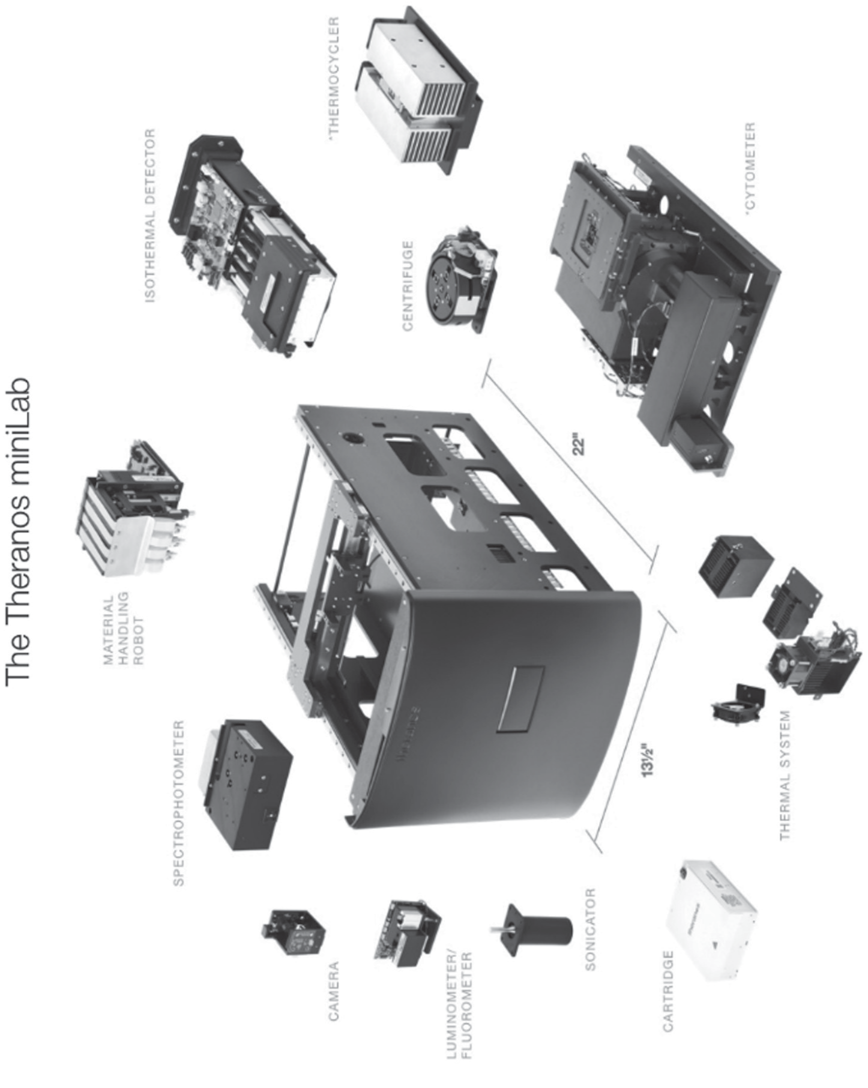


Fig. 2: From the Theranos website

The journalistic investigation described the company working in a scientific vacuum.

But a biotech company can hire the best designers in the world, build a credible brand reputation for all the world's media, and not be forced to do research on its products publicly available.

Conclusions: Fake it until you make … what?

In the minds of venture capitalists, certain investment areas such as cybersecurity, personal services, and health care are a prime target. Investment is booming and there is unbridled enthusiasm for new technologies. But there is a huge gap between the goals of those with capital and the purposes of the field of investment: while the goal of cybersecurity is the protection of sensitive data, of personal services individual well-being, and of health care the protection of health, the goal of start-ups is unhindered growth and short- and very short-term gain.

Such distance can, as in the case of Theranos, jeopardise the lives of those receiving the service by going in the exact opposite direction from the goal claimed by the vision, mission and overall branding. In this context, developing an innovative product/service requires that entrepreneurs and designers have to try to follow this advice from Buckminster Fuller: "as a designer, you have to decide whether you want to make money or make sense, because the two are mutually exclusive".

At a time when the concept of "change by design or by disaster" is now clear for all to see (IPCC, 2022), administrators, entrepreneurs and, above all, designers are called upon not only to design products and services capable of meeting the needs of users, but also to design the new foundations of a society that is more just, inclusive and mindful of the consequences of its consumption and behaviour on the environment.

The complex social and, above all, green transition we are experiencing needs a new generation of designers capable of impacting the design disciplines as powerfully as the Bauhaus did at the beginning of the twentieth century. And precisely because of the inherent ambiguity typical of transition phenomena, mastering the "fake it until you make it" approach will be more than useful, it will be necessary (Transition Design Seminar, 2022). An example reminiscent of the media impact of Theranos and Elizabeth Holmes, but not the denouement, is that of Ocean Cleanup and its founder Boyan Slat. As soon as Boyan was 16, he had the idea of developing a passive concentration system to collect plastic from the oceans.

After graduating from high school, he was invited to present his idea at a TEDx conference in 2012 (TEDxDelft, 2012), and after dropping out of college and founding the non-profit, the video went viral allowing The Ocean Cleanup to raise the first $90,000 and conduct six expeditions in the North Atlantic to measure the vertical distribution of plastic in the sea, the interim results of which were published in scientific journals (The Ocean Cleanup Scientific Publication, 2022).

In 2015, the first "Array" system for collecting surface plastic received a "Design of the Year" award from the London Museum, but tests at sea failed.

A new solution "System 1 – Wilson" was successfully tested in the open sea in 2018, in 2019 the first "Interceptor" was installed at the mouth of a river in Indonesia, in 2020 "System 2 – Jenny" collected dozens of tons of plastic (some of which was then recycled to produce sunglasses and fund the project) and makes use of AI-enabled satellite tracking systems to monitor plastic density in the oceans (Vries, 2022).

With a goal of eliminating 90 % of floating plastics from the world's oceans by 2040, fixed assets of more than $51 million at the end of 2020, investors such as Coca-Cola, Moller-Maersk, PayPal's Peter Thiel, and Salesforce's Marc Benioff, Ocean Cleanup moves between philanthropic action and greenwashing (Dickie, 2021). But Slat's story can nonetheless be an example for how he used the "fake it until you make it" approach in a transparent way with the media and investors, how he has, despite the ambiguity that is the backdrop for projects like these, opened his offices to the scientific community, never shying away from debate (Jones, 2022).

So, returning to DiSalvo's proposal presented in the introduction, we can conclude that in the face of the new and important opportunities of technological evolution and the survival challenges we are already facing today, it is desirable to add a "sensemaking" module (Kolko, 2010) to the diagram presented by the American author that complements the "study of ethics and politics" module to focus on the intrinsic intentions and motivations of (present and) future designers.

Fig. 3: From the Ocean Cleanup website

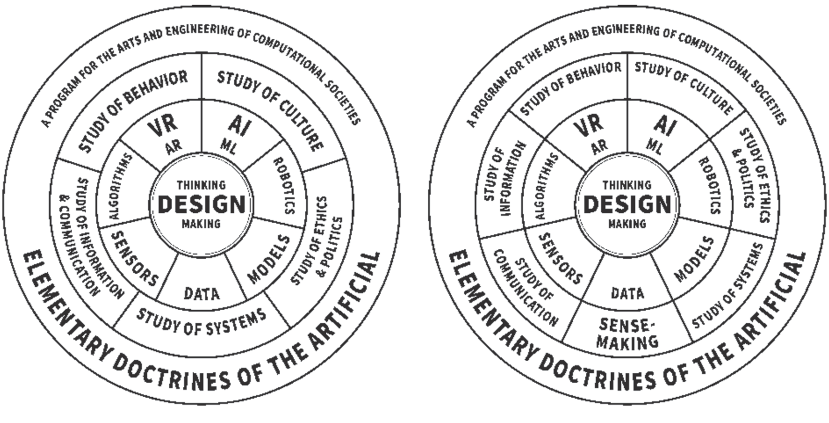


Fig. 4: On the left is the diagram proposed by DiSalvo, on the right the one proposed by the authors

Acknowledgements

Dr. Bruna Alamia Sabbadini Schillaci from PUSH design Lab for the design of image 1 and image 4.

References

Carreyrou, John: "Hot startup Theranos has struggled with its blood-test technology". *The Wall Street Journal,* 16.10.15, retrieved 08.04.22, from https://www.wsj.com/articles/theranos-has-struggled-with-blood-tests-1444881901.

Dickie, Gloria: "Ocean Cleanup struggles to fulfill promise to scoop up plastic at sea". *Reuters* 26.09.21, retrieved 8.4.22, from https://www.reuters.com/business/environment/ocean-cleanup-struggles-fulfill-promise-scoop-up-plastic-sea-2021-09-16/.

Di Salvo, Carl: "Diagrams for another Bauhaus". In Forlano, Laura / Steenson, Molly W. / Ananny, M. (Eds.): *Bauhaus Futures*. MIT Press: Cambridge 2019, pp. 77–82.

Duc, Anh Nguyen / Abrahamsson, Pekka: "Minimum viable product or multiple facet product? The role of MVP in software startups". In: Sharp, Helen / Hall, Tracy (Eds.): *Agile Processes, in Software Engineering, and Extreme Programming. XP 2016. Lecture Notes in Business Information Processing*, 251. Springer: Cham 2016, pp. 118–130 retrieved 6.6.2022 from 10.1007/978-3-319-33515-5_10.

Eisenmann, Thomas R. / Ries, Eric / Dillard, Sarah: "Hypothesis-driven entrepreneurship: The lean startup". In: *Harvard Business School Entrepreneurial Management Case*. Harvard Business School Background: Boston 2012, pp. 812–095.

Ghezzi, Antonio: "How entrepreneurs make sense of lean startup approaches: Business models as cognitive lenses to generate fast and frugal heuristics". *Technological Forecasting and Social Change,* 161, 2020, 120324, retrieved 8.4.2022 from 10.1016/j.techfore.2020.120324.

Griffith, Erin: "Theranos and Silicon Valley's 'Fake It Till You Make It' Culture". *Wired* 14.3.2018, retrieved 8.4.2022 from https://www.wired.com/story/theranos-and-silicon-valleys-fake-it-till-you-make-it-culture/.

The Guardian: "Elizabeth Holmes looms large on first day of Sunny Balwani's Theranos trial". *The Guardian*, 22.03.22, retrieved 08.04.22, from https://www.theguardian.com/technology/2022/mar/22/sunny-balwani-trial-theranos-elizabeth-holmes.

Holmes, Elisabeth: "Elisabeth Holmes' TedMed". *You Tube TedMed* 12.09.14, retrieved 8.4.2022 from https://www.youtube.com/watch?v=SX7ec3uDlhs.

IPCC: "Climate Change 2022: Impacts, Adaptation and Vulnerability". *The Intergovernmental Panel on Climate Change – IPPC*, retrieved 8.4.2022 from https://www.ipcc.ch/report/ar6/wg2/

Jones, Benji: "Oops, cleaning the Great Pacific Garbage Patch was probably a bad idea". *Vox* 4.3.2022, retrieved 8.4.2022 from https://www.vox.com/down-to-earth/22949475/ocean-plastic-pollution-cleanup.

Kolko, Jon: "Sensemaking and framing: A theoretical reflection on perspective in design synthesis". In: Durling, David / Chen, Lin-Lin / Poldma, Tiiu / Roworth-Stokes, Seymour / Stolterman, Erik (Eds.): *Proceedings of the Design Research Society International Conference, 2010: Design and Complexity*, 7–9 July, Montreal, Canada, pp. 814–822 retrieved 8.4.2022 from https://dl.designresearchsociety.org/conference-volumes/7.

Kraus, Sascha / Palmer, Carolin / Kailer, Norbert / Kallinger, Friedrich L. / Spitzer, Jonathan: "Digital entrepreneurship: A research agenda on new business models for the twenty-first century". *International Journal of Entrepreneurial Behavior & Research*, 25(2), pp. 353–375, retrieved 8.4.22 from 10.1108/IJEBR-06-2018-0425.

Kulwin, Noah: "Theranos CEO Elizabeth Holmes's five best cover story appearances". *Vox,* 26.10.15, retrieved 8.4.22 from https://www.vox.com/2015/10/26/11620036/theranos-ceo-elizabeth-holmess-five-best-cover-story-appearances

Livermore, Jeffrey A.: "Factors that impact implementing an agile software development methodology." *Proceedings 2007 IEEE SoutheastCon*, 2007, pp. 82–86, retrieved 6.6.2022 from 10.1109/SECON.2007.342860.

Mann, Douglas L.: "Fake it till you make it: What every translational investigator can learn from the rise and fall of Theranos". *Basic to Translational Science,* 7(1), 2022, pp. 99–100.

Petersen, Søren Ingomar: "Design driven startups." In: Weber Christian / Husung, Stephan / Cantamessa, Marco / Cascini, Gaetano / Marjanovic, Dorian / Montagna, Francesca (Eds.): *Proceedings of the 20th International Conference on Engineering Design, DS 80-3, 27–30 JULY 2015, Politecnico di Milano: Organisation and Management* 3, 2015, pp. 143–152 retrieved 6.6.2022 from https://www.designsociety.org/publication/37716/DESIGN+DRIVEN+STARTUPS.

RAI: "Scuola, nasce il nuovo Liceo per la Transizione Ecologica e Digitale". *RaiNews 24h live* 24.1.2022, retrieved 8.4.2022 from https://www.rainews.it/articoli/2022/01/scuola-nasce-il-nuovo-liceo-per-la-transizione-ecologica-e-digitale-8b799ab6-08d2-4b63-a0e8-9fdd6f260eb0.html.

Slat, Boyan: "Boyan Slat's TEDxDelft", *Youtube TED* 24.10.12, retrieved 08.04.22, from https://youtu.be/ROW9F-c0kIQ.

Standing, Craig / Mattsson, Jan: "Fake it until you make it": Business model conceptualization in digital entrepreneurship". *Journal of Strategic Marketing* 26(5), 2018, pp. 385–399.

Stevenson, Abigail: "World's youngest female billionaire-next Steve Jobs?", *CNBC* 23.9.2015, retrieved 8.4.2022 from https://www.cnbc.com/2015/09/23/worlds-youngest-female-billionaire-next-steve-jobs.html.

Stickdorn, Marc / Hormess, Markus Edgar / Lawrence, Adam / Schneider, Jakob: *This Is Service Design Doing: Applying Service Design Thinking in the Real World*. O'Reilly Media: Sebastopol, 2018.

Thompson, Scott E. / Parthasarathy, Srivatsan: "Moore's law: The future of Si microelectronics". *Materials Today,* 9(6), 2006, pp. 20–25, retrieved 6.6.2022 from 10.1016/S1369-7021(06)71539-5.

Transition Design Seminar 2022, retrieved 8.4.2022 from https://transitiondesignseminarcmu.net/the-transition-design-framework/.

Vandermerwe, Sandra / Rada, Juan: "Servitization of business: Adding value by adding services." *European Management Journal,* 6(4), 1988, pp. 314–324.

Vries, Robin de: Using AI to monitor plastic density in the ocean, 26.01.22, retrieved 08.04.22, from https://theoceancleanup.com/updates/using-artificial-intelligence-to-monitor-plastic-density-in-the-ocean/.

Watts, Richard E. / Peluso, P. R. / Lewis, T. F.: "Expanding the acting as if technique: An Adlerian/constructive integration". *Journal of Individual Psychology*, 61(4), 2005, pp. 380–387.

Wood, Matthew S. / Scheaf, David J. / Dwyer, Sean M.: "Fake it 'til you make it: Hazards of a cultural norm in entrepreneurship." *Business Horizons*, 2021, pp. 117–125.

Cinzia Ferrara & Marcello Costa

The form of written thought

Abstract: How can the graphic and typographic quality of the layout of a text become an element that can interpret the truthfulness and reliability of news? That is, how can aspects related to the layout of a newspaper article, the choice of typeface, the priority of the information, and the editing of the text (correction of imperfections, typos, syntactical and content errors), highlight fallacies, inaccuracies or total falsehoods reported in the news? And again, what is the relationship between editorial graphic design, cognitive dysfluency, and recognising fake news?

The essay aims to investigate the sphere of the form by which journalistic content is translated, an aspect that is little studied but not irrelevant in its relations to readability, accessibility and cognitive dysfluency, in order to recognise fake news, an aspect that may not entirely replace but certainly complements the various assessment tools, such as algorithms built specifically to prevent its dangerous spread.

Keywords: Editorial graphics, typography, fluency, dysfluency, fake news, good news

Fake news and design

Only on the surface does dealing with fake news involve addressing a new topic, because fake news has always existed and the practice of spreading disinformation is as old as the printed word, perhaps even older. In Sicilian literature The Council of Egypt (Sciascia, 1963) is centred on the story of a sensational, later uncovered, fabrication of a false translation of an Arabic manuscript, passed off as a shocking political text when in fact it was simply a biography of the prophet Muhammad. It is an *ante litteram* fake news in which the Abbot Vella, Maltese by birth, haphazardly takes apart and reassembles the ancient codex, rewrites it in Arabic characters passing them off as Mauritanian-Arabic characters, and translates the text without knowing the Arabic language, and goes on to teach having been assigned the first university chair in Arabic. It would be a masterpiece if it were not an Arabic fake.

And while the protagonist of the novel set in the late eighteenth century will pay with prison for this daring act of deception, the same does not happen, or at least not always, to those who are held accountable for what is falsely published. There are few laws or actionable penalties against those who spread fake news, and no incentive to act responsibly in the sphere of public communication. But dealing with fake news also means dealing with an issue that is by no means new, namely that of reading. The act of reading has remained unchanged for a few hundred years (Spiekermann, 2003) in the ways in which it takes place, although the media for reading have changed from paper media printed with ink to the technological media of monitors by means of the light pulse of pixels. Just as design techniques have changed over time with regard to the graphic design of various types of textual content, with the aim of "translating" them into a visual form, intervening macro-typographically – relating to typographic structure, layout –, dealing with the print format, the size and layout of text columns and images, the organisation of hierarchies of titles, subtitles, and captions, as well as micro-typographically dealing with the letter, space between letters, word, space between words, line and line spacing, and text column (Hochuli; 2018, p. 7), it must be clear that the intent is precisely to make the enjoyment of the text optimal, acting on its form to the extent that it is closely related to its readability, its accessibility and ultimately, which is by no means a secondary aspect, to the control of the very truthfulness of the text. However, the terms readability, accessibility, and truthfulness should be further examined.

Readability, accessibility, truthfulness

Being readable, with regard to writing or understanding, and the quality of what can be read or understood without too much effort are the dictionary definitions of the term readability (Treccani, 2022). It is a feature of the text that thus takes into account two separate aspects: a physical one and a linguistic one. Legibility is thus related to the ease with which the individual letters that make up a text can be distinguished. The choice of typeface, construction of a typographic scale, definition of line spacing ratios, and paragraph alignment are essential factors. To refer to these and other formal issues is not to speak only of aesthetics, but also of the control of visible elements that make optimal enjoyment of the text possible (Hochuli, 2018).

These are elements that on the Web, without the physical constraints of the paper medium, are variable within a responsive space that dynamically adapts to devices of different sizes and the personal settings of individual users.

So, while for a print product, readers are certain about how the content will be enjoyed, in the digital space they can only predict and design scenarios that ensure an equivalent and accessible experience for all.

Readability, on the other hand, is assessed by the fluency of the reading, the ability of the text to be understood for the vocabulary used and the level of complexity of its syntactic and semantic structures.

It can be measured by formulas. In the 1970s, Rudolf Flesch and J. Peter Kinkaid empirically calculated the readability index based on the average number of syllables per word and the average number of words per sentence. In Italy, in 1988 the Gruppo Universitario Linguistico Pedagogico (GULP) of the Sapienza University of Rome developed the *GULPEASE Index* (Lucisano & Piemontese, 1988), gauged to the Italian language and based on several linguistic variables: word length and sentence length in relation to the number of letters.

Readability is one of the basic requirements for accessibility. Linguistically, in order for content to accessible, it must be expressed in a common language, through clear and short sentences (W3C, 2022). The process of associating written or printed words with their correct sound is called text decoding, which needs to be automatic for people to read fluently.

On the Web, decoding is further facilitated by structuring content semantically according to an articulated hierarchy of markers (html tags) that define headers, paragraphs, bulleted lists, citations, multimedia elements, as well as the individual areas into which a page is divided: header, main content, footer, content in the margin, banners.

This process facilitates not only the decoding of text by readers but especially by technologies such as browsers, search engines, and screen readers where the purely visual aspect is irrelevant.

The graphical representation and semantic structure of the text therefore need to be independent of, yet consistent with, each other.

The same content can have multiple graphical representations because there are multiple devices in which the content is displayed as well as the individual user's personal settings in viewing them. A designer's choices has to be guided by an understanding of the technologies and the users' needs and habits.

Although these are now accustomed to scrolling the content of web pages, especially on mobile devices, studies based on eye-tracking show that 80 % of users dwell more on content placed at the top of the page (above the fold) where scrolling is not necessary and less on content at the bottom (below the fold) (Fessenden, 2018) (Fig. 1).

Therefore, it is deemed necessary to place the most important information at the top of the page according to an "inverted pyramid" approach, now well established in online journalism (Nielsen, 1996): starting with the conclusions by providing visual cues to encourage page scrolling.

These practices, which are now widely shared, constitute the web standards against which the quality of online content is measured in terms of performance, accessibility and indexing using specific metrics. So, on the one hand, we have methods for optimising the source code of the page, structuring the content

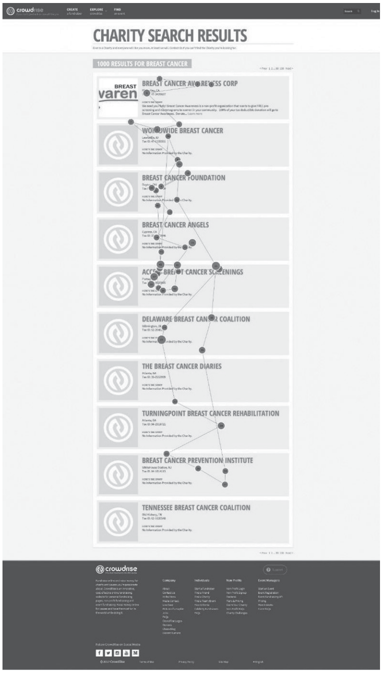


Fig. 1: Graph showing that the user's gaze focusses often, but not always, on the top of the page. The actual distribution of the points of focus will depend on the specific design and the user's goal in visiting the page (Nielsen 1.jpg).

semantically and thus satisfying machine coding, and on the other hand we have design guidelines for organising information hierarchically within layouts that speed up scanning and tracking.

Such Web standards, though useful and necessary to optimise production time, development, performance, accessibility and communication, inevitably tend to generate standardisation, which makes it more difficult to discern true information from false or misleading information. If readability and accessibility are ensured this way, how can we assess truthfulness?

In the case of print publications, we are now able to distinguish the authoritativeness of sources through precise design choices such as paper size, typefaces, images, and colours, all aspects that are less pronounced or most often homologated on online platforms. Large cover photos (hero images) and neatly designed layouts that meet web standards give even those sources that make less than

Fig. 2: The Guardian decided to share its news on social media by including its brand name and a date in the main photo, precisely to credit the news, frame it temporally and thus distinguishes it from the homogeneous stream of posts (the_guardian_tweet.jpg)

correct use of information a strong visual presence and a superficial patina of credibility.

This problem reaches its critical peak on social media, where the news sharing elements do not allow us any longer to find the formal and identity-related characteristics of the source but an automatically generated component consisting of an embedded image and an SEO-friendly title, often highly emotive and designed to garner reactions and shares (clickbait), which standardises the appearance of the news stream and gives equal import to every post, regardless of the source.

The latter aspect gives us a flow that mixes and homogenises true with verisimilar news. A lack of attention on our part can therefore result in the proliferation of bad information on the Web. For instance, the Guardian has decided to share its news on social media by including its brand name and a date in the main photo, (Moran, 2019) precisely to credit the news and frame it in time (Fig 2).

The study conducted by Gordon Pennycook and David Rand (Pennycook et al., 2021) attributes the act of sharing or commenting on a news item without first verifying the accuracy of the sources to lazy thinking. The simplification and standardisation introduced to improve web communication and speed it up risk making it possible to easily camouflage fake news. Perhaps we need to rethink complexity, differentiation, and slowness in web communication to combat laziness by employing the alterations of cognitive dysfluency.

Fake news, text form, and cognitive dysfluency

Returning to the proposed topic of systematising fake news and text form, we are interested in understanding how editorial graphic design for digital and web products can make a contribution to the disambiguation between real news and fake news that readers may come across on a daily basis, and whose proliferation cannot solely be attributed to the hypertrophy of the Internet and social media, and against which there are several ways to protect oneself, first and foremost by going to the library to check the sources (Ginzburg, 2021).

We begin by analysing the formal and conceptual aspects in a graphic layout that relate to the choice of appropriate fonts (serif or sans serif), their readability, and the hierarchy of information, dealing with macrotypography. This can affect cognitive fluency, understood as the natural flow of language, which can be associated with the ease of thinking and understanding something. But what can be understood as a positive and desirable aspect – as it surely is in so many contexts such as education – relating to the fluency and comprehensibility of the text free of interruptions, blocks, repetitions or fragmented words, translates into the action of reading, into an element that prevents further and deeper reflection on the text, which is achieved instead by making it less simple and thus inducing cognitive dysfluency.

This can also be achieved through a graphic design that instead of being devoted to simplification of the structure of the language at all costs, with the fragmentation of the text into small paragraphs identified by numbered headings and subheadings, with the introduction of bulleted lists and initial indexes, with the use of large fonts and line spacing, and finally with an approach that makes reading an accessible and didactic mode, places "obstacles" in the reading phase. By slowing down the process, these help readers in the text comprehension phase by inducing them to reflect and evaluate more carefully the information acquired.

Adam Alter, a professor of marketing and psychology at New York University's Stern School of Business, says that the presence of a cognitive obstacle leads one to think more deeply and use information more fully precisely because the reading and comprehension of the text is more accurate and in-depth. This produces a twofold benefit at the cognitive and social levels (when the issues addressed have such value).

And he demonstrates this through a double Cognitive Reflection Test (Alter, 2013, p. 438) in which he finds greater attention and comprehension of readers by intervening on the dysfluency of the text, only by changing graphical aspects such as colour (grey and not black), size (10 and not 12 points) and typeface shape (italic and not regular) that make reading more complex and slower, and therefore more attentive.

The above leads us to argue for the value that the quality of graphic design, and with it the structural and formal quality of the textual content take on in the relationship between readability and disfluency, which is capable of transforming into tools to help us find our bearings in the dark woods of disinformation that continues to grow out of all proportion on the internet.

We are well aware that what we posit here is obviously at odds with web design guidelines aimed at the constant search for fluency to improve comprehension of a text, but equally aware of the value that editorial graphic design takes on and that can induce cognitive dysfluency by hindering and slowing down reading to increase the attention threshold, an element that can help us understand better as well as discern between true and false in public communication.

The topic was the subject of a unique experiment carried out in 2018 by the Columbia Journalism Review, in collaboration with TBWA \ Chiat \ Day . Magazines imitating authoritative newspapers containing obvious fake news on the cover or inside were sold at a temporary newsstand set up in Bryant Park in Manhattan. The experiment was aimed at raising awareness of the risk of fake news and its dissemination, and paradoxically, the fact that these were placed within a familiar and recognisable setting made them even more implausible than when they were online, stripped of any design element. The experiment was explained to those who noticed the paradox and asked for information (Pope, 2018). They were given a guide to recognise and protect themselves against fake news (Figs. 3-4-5-6-7).


Newsstand
HOUR


The Informationalist
NATIONAL TREKKER
TWO HEADED SHARKS
Goodbye, America
The Manhattan Daily
everyday NEWS
newspaper
We Card
Please Have ID Ready
HOUR
Hustle


GET ALL OF THE LATEST REPORTS BY SUBSCRIBING ONLINE
THE HOUR
Trump offers immigrants one-way tickets out of US
"Pack your bags" says the President
Page 6

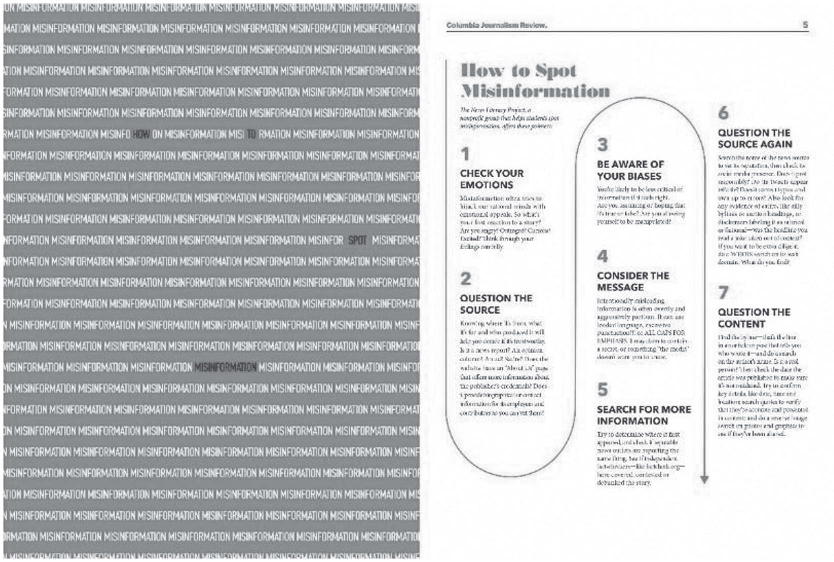


Fig. 3-4-5-6-7: The Columbia Journalism Review, in collaboration with TBWA \ Chiat \ Day carried out an experiment that was aimed at raising awareness people of the risk of fake news. Magazines imitating authoritative newspapers containing obvious fake news were sold at a temporary newsstand in Manhattan. At the end of the experiment, they were given to people a guide to recognizing fake news (3. cjr_newsstand.jpg, 4. cjr_ publications.jpg, 5. cjr_cover publication.jpg, 6. cjr_guide_to_misinformation.jpg, 7. cjr_guide_to_misinformation2.jpg)

Conclusions

The topic examined above requires further research because, as the sparse available scientific literature shows, it is a new and little-known topic. But it is equally interesting in its implications involving the form of the text, its reading and the cognitive process that activates understanding. We believe that design cannot be limited to being a discipline merely capable of generating even complex forms and that it is fully capable of activating processes, inducing behaviours, and providing instruments for reflection. In an age of false information on the Web, where readers are exposed to and must evaluate endless sources online, design is an even more powerful tool (Hoory, 2017). So, we need to continue designing and experimenting by pushing the boundary that separates fluency from dysfluency in the text, in the belief that editorial form can aid comprehension of content and make readers slow down while reading, thus fostering reflection and comprehension and becoming a valuable antidote to the proliferation of fake news.

There is a need for simplicity as well as for complexity, which is in fact the most faithful expression of the world we inhabit and which shows that we need more time, more attention, and more care in what we read and what we understand, moving in the opposite direction of that process of social acceleration to which we are all exposed.

It makes us miss a lot, maybe too much, of the meaning of things, not just the written ones.

Attributions

This article was discussed and agreed upon by the two authors and was written having shared their references, readings, research and reflections. Cinzia Ferrara is credited with the abstract and the paragraphs, "Fake news and design", "Fake news, text form, and cognitive dysfluency", and "Conclusions"; Marcello Costa is credited with the paragraph, "Readability, Accessibility, Truthfulness". Finally, Cinzia Ferrara was responsible for the concept and scientific coordination of the article.

References

Alter, Adam L.: "The benefit of cognitive disfluency". *Current Directions in Psychological Science* 22(6), 2013, pp. 437–442, retrieved 6.6.2022 from 10.1177/0963721413498894.

Fessenden, Therese: "Scrolling and attention". *Nielsen Norman Group,* 15.4.2018, retrieved 6.6.2022 from https://www.nngroup.com/articles/scrolling-and-attention/

Ginzburg, Carlo: *La lettera uccide*. Adelphi: Milano 2021.

Hochuli, Jost: *Il dettaglio in tipografia*. Lazy Dog Press: Milano, 2018.

Hoory, Leeron: "This design detail determines if you trust your news sources". *Quartz* 6.6.2017, retrieved 6.6.2022 from https://qz.com/1018086/this-design-detail-determines-if-you-trust-your-news-sources/

Lucisano, Pietro / Piemontese, Maria E.: "GULPEASE: una formula per la predizione della difficoltà dei testi in lingua italiana". In: *Scuola e città*, 3. La Nuova Italia: Firenze, 1988, pp. 110–124.

Moran, Chris: "Why we're making the age of our journalism clearer at the Guardian". *The Guardian* Chris Moran 2.4.2019, retrieved 6.6.2022 from https://www.theguardian.com/help/insideguardian/2019/apr/02/why-were-making-the-age-of-our-journalism-clearer.

Nielsen, Jakob: “Inverted pyramids in cyberspace”. *Nielsen Norman Group* 31.5.1996, retrieved 6.6.2022 from https://www.nngroup.com/articles/inverted-pyramids-in-cyberspace/

Pennycook, Gordon / Epstein, Ziv / Mosleh, Mosleh / Arechar, Antonio A. / Eckles, Dean / Rand, David G.: “Shifting attention to accuracy can reduce misinformation online”. *Nature* 592, 2021, pp. 590–595, retrieved 6.6.2022 from 10.1038/s41586-021-03344-2.

Pope, Kyle: “Why CJR is taking over a newsstand in midtown Manhattan”. *Columbia Journalism Review* 2018. Retrieved 12/02/2022 from https://www.cjr.org/politics/cjr-newsstand.php

Sciascia, Leonardo: *Il Consiglio d’Egitto*. Adelphi: Milano, 1963.

Spiekermann, Erik / Ginger, E.M.: *Stop stealing sheep & find out how type works*. Adobe Press: California, 2003, p. 145.

Treccani: Fake News. *Treccani enciclopedia on line*. retrieved 6.6.2022 from https://www.treccani.it/enciclopedia/fake-news

Treccani: “Leggibilità”. *Treccani vocabolario on line*. retrieved 6.6.2022 from https://www.treccani.it/vocabolario/leggibilita/

W3C: “Reading Level – Understanding 3.1.4.”. *Understanding WCAG 2.0* 2013, retrieved 6.6.2022 from https://www.w3.org/TR/UNDERSTANDING-WCAG20/meaning-supplements.html.

Santo Giunta

Natural light in the architectural interior: Fake news on the Caravaggio of Palermo

Abstract: The paper investigates the mystery of a painting, Caravaggio's The Nativity, and the scope of certain design devices implied in the interior/exterior relationship and described as a function of recognisable physical elements. For a long time, it was believed that this painting, placed on the altar of the oratory of San Lorenzo, was made in Palermo. It is a piece of fake news detected by interpreting and examining an architectural interior. Here, the value of natural light emerges, and we glimpse an irrefutable truth and therefore achieve an understanding of what happens when observing The Nativity and the oratory. What is the difference between recognising and identifying the arche, that is, precisely the signifying element between the painting and this architecture? It is the responsibility of the observer of a spatial device with "poetic potential".

Keywords: Fake news, Caravaggio, the nativity, poetic potential, architectural interior

"Fake news" has the power to distort reality and spread baseless information on a large scale. An interesting example is offered by Michelangelo Merisi, known as Caravaggio (Milan, 1571 – Porto Ercole, 1610), with his painting The Nativity. It is a night scene in which the painter depicts a hut that is illuminated from the left by a beam of light. The ray pours into the dark with a photographic quality. The Virgin, with a melancholic look, is dressed as a commoner, and St. Joseph's figure is that of a young man with short hair addressing a shepherd who is standing next to St. Francis. St. Lawrence, to the left of the Virgin, gazes at the new-born baby Jesus, and the head of an ox pops up between the two, while the shadow of a donkey can be recognised, and an angel descends from above.

The story is well known. The painting was stolen by the Mafia from the Oratory of San Lorenzo in Palermo, from the heart of Palermo, putting it on the list of the world's most famous stolen masterpieces (Gatti, 2022).

It is reported that "it was an easy-peasy job: a ground-floor window, no bars and not even the trace of an alarm. Just a fence to climb over, a cutter to cut the cloth, and a rug to roll it up in, to protect it from the rain. That's right, the rain: it was the hardest part of the whole thing" (Pipitone, 2019). That evening the news reported that it was raining heavily in Palermo. Perhaps it is because of that downpour, in the night between 17 and 18 October 1969, that the lost Caravaggio no longer exists. The story goes that to steal it and take it away, two shady individuals decided to roll it up inside a rug. But why should we return with our memory to that place?

While, on the one hand, it is possible to try and trace a brief line of reasoning on a hypothetical study of an architectural interior, on the other, in defining the concept of fake news, an often much-abused term, we can reveal a geography of "other" places in Palermo's historic centre.

The painting has long been considered a work by the artist during his stay in Sicily between 1608 and 1609.

On the altar was Caravaggio's masterpiece The Nativity, a work from 1609, which was stolen on the night of 17–18 October 1969. It has disappeared ever since. Today the altar features a faithful reproduction of it made in Madrid in 2015 by Factum Arte, a company founded by Adam Lowe specialising in reproductions of works of art. The HD photocopy measuring 268 × 197 cm was made from a 1967 photo by Enzo Brai.

A suspicion of fake news arose about this story in relation to the place where and the period when The Nativity was painted. This news, fuelled by the accounts of his early biographers, could also have amplified a side effect: the presence of a plaque placed in memory of a possible historical event related to Caravaggio himself. In the city there is no trace, not even a commemorative plaque of Caravaggio's stay in Palermo. The painting itself has become a vehicle for an altered reality that, over time, has helped define a biased and selective news story.

In 2022, the stolen The Nativity will tour the rallies of Italy on the roof of a car with the aim of raising awareness of art theft in the sports community. The University of Palermo is a partner in a unique initiative, launched by the non-profit Extroart, with the goal of raising awareness against art theft. The stolen Nativity will tour the rallies of Italy on the roof of a car whose crew is Alfredo Gippetto (Driver) and Rosario Terranova (navigator) (Leone, 2022).The painting has become a source of inspiration for novelists such as Luca Scarlini or filmmakers such as Roberto Andò, who shot a film in 2018, *Una storia senza nome*. It has been the object of desire of ruthless collectors and some turncoat mobsters, who have often and willingly brought up the Caravaggio canvas. In 1989 Leonardo Sciascia, struck by the theft twenty years earlier, decided to dedicate his last story to this mystery, *Una storia semplice*. Over the years they have searched for it everywhere. Almost as if it were a fugitive from justice, they have even made wanted signs of it that have been spread all over the world: 2.68 metres by 1.97 metres and a market value today of around thirty million euros. In 2022, the master of erasure, Emilio Isgrò, chose to render the painted figures of The Nativity as ghosts, absent and present at the same time and in the same gaze, a reference to the unknown fate of the work to remember and not forget (Tortorici, 2022).

Fig. 1: Oratory of San Lorenzo in Palermo (ph. by Rita Tagliavia)

The "science of fake news" has the power to distort reality and spread baseless news. The issue is highly topical and relevant because of the means and ends by which increasingly polarising opinions are put into circulation. These proliferate and foment the public's willingness to believe pseudo-scientific issues or news, which lack per se credibility and the ability to convince (Lazer, 2018).

Fake news spreads like wildfire through sharing. The issue is as topical as the official disinformation disseminated by the Kremlin that there is no war going on in Ukraine but only "a military operation". Russia has tried with a disinformation campaign, fake accounts and clone sites to spread a theory that the conflict in Ukraine is just a media invention.

Social media make it very easy to share large amounts of news, and it becomes extremely difficult for anyone to be able to discern true from false. Approaching progressively and with curiosity this topic that involves more than just the nature of places is a choice that calls for awareness.

Returning to our case study, can architecture, and specifically interior architecture as a discipline, become a tool for investigating and sifting more thoroughly the documentary sources in our possession?

Was it enough to observe, with empathy, from where the light enters the Palermo oratory to decode this news? Or was it enough to read this fake news

Fig. 2: Interior of the oratory and natural light from the right (ph. by Rita Tagliavia)

with the designer's inquiring eye and use the critical tool of making architecture to undo the credibility and authority of those who have described a place and a painting over time with less than credible visions?

In the economy of this paper, it is useful to give another example related to the Contarelli Chapel, in San Luigi dei Francesi in Rome. It cherishes Caravaggio's famous triptych consisting of *The Martyrdom of St. Matthew*, *The Calling of St. Matthew*, and *St. Matthew and the Angel*. The natural light that invades the three paintings mimics the direction of the real light that illuminates the chapel from the arched window in the centre. It is the perception of an interior space that is open to the vibrations of sunlight entering the painting and establishing a relationship with the interior space of the chapel (Saggio, 2008).

Seeing the state of things with the eyes of a designer, and studying the places and rationality of spatial realms, allows one to recognise dialectical relationships that are rich in more than just functional information. Caravaggio's design choices also remain trapped in a sort of time loop, but the viewer's awareness of

Fig. 3: Details of the decorations by Giacomo Serpotta (ph. by Rita Tagliavia)

these choices in the space in which his painting is placed compels a reformulation of its meaning and role within the Oratory of San Lorenzo.

The oratory was built around 1570 by the Company of St. Francis on the remains of a small ancient church dedicated to St. Lawrence. It was soon entrusted to the friars of the nearby convent of San Francesco who had the task of burying the deceased poor of the Kalsa district. Only later was it embellished with stuccoes by Giacomo Serpotta (1656–1732), who worked here between 1699 and 1706 (Palazzotto, 2015).

Sources from Caravaggio's biographers – Giovanni Baglione and Giovan Pietro Bellori – mention a commission he received for a Nativity during his brief stay in Sicily, while he was on the run from Malta, between 1608 and 1609.

The first person to have doubts about this was Enrico Mauceri in 1924, then in 1951 Edoardo Arslan found in the painting a resemblance with the colours of Romanino (Girolamo Romani, Brescia, 1484/1487) and Morettesque motifs. Even Alfred Moir in 1982 agreed that the style of the work was incompatible with that of the Sicilian paintings and noted the similarity between the dimensions of The Nativity and those mentioned in the contract the painter signed in 1600 in Rome with the Siena-born merchant Fabio Nuti. Moir's intuition proved to

Fig. 4: Details of the decorations by Giacomo Serpotta (ph. by Rita Tagliavia)

be decisive and would be taken up some thirty years later by Maurizio Calvesi, who – as Luca Mozzati writes – "pertinently dating the painting to 1600, speculated that, perhaps, The Nativity was precisely the painting that the merchant from Siena had requested from Caravaggio" (Mozzati, 2018).

Recently some studies have found similarities with characters painted in other Roman canvases by Caravaggio, and evidence of this was obtained in 2012 by Giovanni Mendola, who confirmed that the picture was painted in Rome in 1600 at the Palazzo Madama where the painter was living (Mendola, 2012). However, other more recent studies have given more credence to the theory that the canvas was painted for the merchant Fabio Nuti, who did business with the Palermo friars (Cuppone, 2020).

Upon entering the Oratory of San Lorenzo in Palermo, one has the impression of being inside a space in light. The light, through the large windows placed along the perimeter of the rectangular hall, defines an intimate sphere that continues to be, even today, the tragic site of a theft linked to still obscure criminal schemes.

Visitors can measure with their bodies the height of the large rectangular room, its interior volume, and discover the amount of natural light that invades this space.

Fig. 5: Details of the decorations by Giacomo Serpotta (ph. by Rita Tagliavia)

Understanding the spatial system constitutes an action of perceptual synthesis aimed at identifying the dazzling light that enters and produces an effect of estrangement. “In a sense it is the chiaroscuro of things that makes the forms vibrate”, says Carlo Scarpa, “that is, light makes things vibrate. If there is nothing that makes light vibrate, there is nothing that vibrates” (Semi, 2010).

Hints and references to the shape of the interior space that, invaded by light, makes references blend together. Memorising the details placed in relation between inside and outside, through this direct experience of moving inside it with one’s body, is like checking a relativistic view that treasures the interpretation of the beholder in the four dimensions of space and time.

The narrative here, linked to Caravaggio’s painting, is a reference to a scene of life that argues and highlights how the natural light that fills the painting at the same time illuminates the regular space, the white walls, and the putti and stucco work by Giacomo Serpotta.

To this end, it is worth recalling these words of Albert Einstein: “I have no special talent. I am only passionately curious”.

“It is difficult to guess, [writes Gianfranco Ravasi], who wrote this simple and humble confession. It becomes obvious when we learn that it is a couple of handwritten lines from a letter that Albert Einstein sent to Carl Seelig, a Swiss writer and biographer of the great scientist. The element I would like to point out,

Fig. 6: Detail of the nativity by Caravaggio (ph. by Rita Tagliavia)

however, is not the modesty of a genius, […] the tireless taste for research, the lust for knowledge, interest and existence. It is the Latin *curiositas* that is based on "taking care" of reality in order to penetrate and know it" (Ravasi, 2015).

Our interest is to bring out in the project the reality of natural light and, therefore, an understanding of what happens as the hours of the day go by. The comparison with the case study above is not just a memory game. While some facts may seem secondary, natural light in the architectural interior should be regarded as a device with "poetic potential".

Crossing the threshold at sunset in the Oratory of San Lorenzo, we witness the transformation of the interior space by that "narrative" device that is Caravaggio's painting. His observation allows us to appreciate – possibly more critically – the poetry of this space and to dwell, looking at the stuccoes, on the interconnections between the white marmorino and some of the gold elements that Serpotta chose to insert.

The angle of the light in the painting placed on the altar – now only a photographic copy on canvas – does not match the actual light coming through the window next to it, on the right. It is clear evidence that Michelangelo Merisi known as Caravaggio never stepped inside the Palermo oratory.

References

Cuppone, Michele: *Caravaggio, la Natività di Palermo. Nascita e scomparsa di un capolavoro*. Campisano: Roma 2020.

Gatti, Chiara: "Cancello Caravaggio. Intervista a Emilio Isgrò". *Robinson*, *La Repubblica*, 5.2.2022, pp. 26–27.

Lazer, David M. J. / Baum, Matthew A. / Benkler, Yochai / Berinsky, Adam J. / Greenhill, Kelly M. / Menczer, Filippo / Metzger, Miriam J. / Nyhan, Brendan / Pennycook, Gordon / Rothschild, David / Schudson, Michael / Sloman, Steven A. / Sunstein, Cass R. / Thorson, Emily A. / Watts, Duncan J. / Zittrain, Jonathan L.: "The science of fake news. Addressing fake news requires a multidisciplinary effort". *Science* 359, 2018, pp. 1094–1096.

Leone, Giuseppe: "La Natività trafugata girerà i rally d'Italia sul tetto di un'auto". *Giornale di Sicilia*, 6.3.2022, p. 16.

Mendola, Giovanni: *Il Caravaggio di Palermo e l'oratorio di San Lorenzo*. Kalós: Palermo 2012.

Mozzati, Luca: "Una bella lettura del capolavoro scomparso di Caravaggio", 26.3.2018, retrieved 6.6.2022 from http://lucamozzati.it/una-bella-lettura-del-capolavoro-scomparso-di-caravaggio.

Palazzotto, Pierfrancesco: "Tradizione e rinnovamento nei primi apparati decorativi barocchi in stucco di Giacomo Serpotta a Palermo (1678–1700)". In Di Natale, Maria Concetta / Vitella, Maurizio (eds.): *Arredare il Sacro in Sicilia. Artisti, opere e committenti in Sicilia dal Medioevo al Contemporaneo*. Skira: Milano 2015, pp. 81–108.

Pipitore, Giuseppe: "Mafia, 50 anni fa il furto del Caravaggio a Palermo: storia di un quadro diventato mitico". *Il Fatto Quotidiano*, 18.10.2019, retrieved 22.06.2022 from https://www.ilfattoquotidiano.it /2019/10/18/mafia-50-anni-fa-il-furto-del-caravaggio-a-palermo-storia-di-un-quadro-diventato-mitico/5520648/.

Ravasi, Gianfranco: "Breviario". *Il sole 24 Ore*, *Domenica* 190, 12.7.2015, p. 23.

Saggio, Antonino: *Lo strumento di Caravaggio*. Kappa: Roma 2008.

Semi, Franca (ed.): *A lezione con Carlo Scarpa*. Cicero: Venezia 2010.

Tortorici di Raffadali, Bernardo: "Isgrò Dante Caravaggio e la Sicilia". In *Isgrò. Dante Caravaggio e la Sicilia*. Skira: Milano 2022, pp. 89–95.

Benedetto Inzerillo

Environment, information, fake news

Abstract: Although more than twenty-five years have passed since the publication of a report that clearly shows the scientific evidence on global warming and the influence of human activity, today there are still thousands of fake news stories circulating on the web. Lobbies have always used the media to discredit science, and with the boom in social media this strategy has shifted online. Deniers single out items of scientific truth and use them instrumentally to render fake news credible. After years of a widespread lack of control, something is changing: since 2020, Facebook has created the “Climate Science Information Center”, a platform that signals fake climate news and encourages people to consult official and reliable sources. What can we Designers do? One of the main causes of the climate crisis is the production of carbon dioxide: planting a thousand billion trees would seem to be the most efficient and ecological solution right now. Reforestation or urban forestation projects are giving us time to think about an ecological transition plan (Mancuso, 2019). Our primary goal must be urban models steeped in nature, reduction of waste production and pollution, reduction of energy consumption and projects that employ plants to purify the air.

Keywords: Sustainability, manipulation, communication, ecology, nature

> The Anthropocene[1] pertains to humans - a patchwork of lungs, bacterial microbiomes, non-human ancestors and so on - and, at the same time, agents such as cows, factories and our thoughts, agents that cannot be reduced to their purely human utilization or to their exchange value. This irreducibility is the reason why these assemblages can suddenly discontinue their utilization and exchange value in a completely unexpected (unconscious) fashion: you cannot eat a Californian lemon in times of drought. To return to the question of our conceit and intentions: it was ‘we’ who did it, albeit unconsciously. Becoming a geophysical force on a planetary scale means that, regardless of what you think, regardless of whether you are aware of it or not, here you are, it is you. Those who react against the term are overlooking something in this distinction. You cannot be smug about your own heartbeat or your nervous system (Morton, 2021).

---

1 The Anthropocene as explained by T. Morton, (Dark Ecology, 2021) is the current geological epoch, in which the Earth’s environment, in all its physical, chemical and biological characteristics, is being strongly affected on both a local and global scale by the effects of human action, with particular reference to the increase in CO2 and CH4 concentrations in the atmosphere.

More than twenty-five years have passed since the IPCC[2] published "Climate Change 1995: the Science of Climate Change", the report that for the first time clearly demonstrated the scientific evidence on global warming and the influence of human activity. Yet even today there are still thousands of fake news stories circulating on the Internet that dispute the need for decisive action. Only a year ago the Royal Swedish Academy of Sciences organised the first summit of Nobel Prize winners; this was devoted to climate ("Our Planet, Our Future", 26–28 April 2021), and sounded an alarm: disinformation on social networks is endangering measures to save the planet.

From tobacco to global warming, interest groups have always used the media to discredit science (Levantesi, 2021). In the USA, with the support of the more conservative wing of the Republican Party, the "tobacco strategy" is being reintroduced, something that has been successfully attempted since the 1950s by the cigarette multinationals to delay the adoption of anti-smoking measures (Klein, 2021). It was only in 2009 that Congress finally authorised the Food and Drug Administration[3] to regulate tobacco consumption. In the actual aftermath of the IPCC report, scientists, think tanks[4] and multinationals launched disinformation campaigns that were taken up by authoritative newspapers such as the Wall Street Journal, New York Times and Newsweek, and above all by television channels such as Fox News. Between 2003 and 2010, these organisations received more than 900 million dollars per year in funding from the fossil fuel industry. In the last decade with the social media boom, the disinformation strategy has moved on to the web, where deniers claim that climate science is "illegitimate, politicised, unreliable and corrupt". One of the first "items of proof" emerged during Hurricane Sandy, in 2012, in the United States; deniers posted fake photos accusing climate scientists of alarmism, thus successfully polarising the debate on Twitter and promoting the idea that, behind the emergency, there was a government conspiracy to control the country. The phenomenon exploded in 2016 with the election of Donald Trump, who, over four years, passed 176 acts and laws to curb climate warming measures, including the US withdrawal from the

2 The Intergovernmental Panel on Climate Change is the world's highest authority on climate issues.

3 The Food and Drug Administration (FDA) (Food and Drug Agency, abbreviated to FDA) is the US government agency responsible for regulating products that are placed on the market, from food to ethical drugs.

4 A think tank is a body, institute, company or group concerned with public policy analysis in the fields of social policy, political strategy, economics, science and technology, industrial or trade policy and also military advice.

Paris climate agreement, signed in 2015. Deniers use the well-known technique of manipulation, by isolating items of scientific truth and using them instrumentally to render fake news credible. One of their hobbyhorses is: “The sun is responsible for global warming and there is nothing we can do about it”. There is some truth in this sentence: as the source of almost all of the earth’s energy, the sun has a considerable impact on the climate. However, scientific research shows that not only has the sun undergone a slight cooling trend over the past forty years, but that temperatures have only increased in the troposphere, the warmest and closest part to the Earth’s surface, whereas, in the outermost part, the stratosphere, they have decreased. If warming were really caused by the sun, we would have to witness an increase in temperature in both the troposphere and stratosphere, because the heat would be coming into the atmosphere from outer space. However, greenhouse gases, produced by Man, only trap heat at the lower end and therefore, global warming can be considered anthropogenic in nature. A study by the organisation InfluenceMap[5], published in 2019, states that in the years since the Paris Agreement, “the five largest oil and gas companies (ExxonMobil, Royal Dutch Shell, Chevron, British Petroleum and Total) have invested more than $1 billion in climate disinformation campaigns”. Who are they financed by? The science blog “Desmog” has collected in a database the names of people, companies and think-tanks committed to hampering the shift away from fossil fuels. Among the most active is the Heartland Institute[6] in Illinois, which is at the forefront in denying the scientific evidence regarding the anthropogenic origin of global warming, claiming that scientists agree on its being a natural phenomenon. One of the most recent articles published on the “Climaterealism” website firmly disputes the data regarding drought, stating that “NASA satellites have shown that, since 2003, there has been a 25 % decrease in global scorched earth”. In contrast, the study “Climate change increases the risk of wildfires”, published, in January 2020, in the ScienceBrief Review, reveals how climate change has increased both the frequency and severity of fires throughout the world in recent years. The Heartland Institute is a non-profit organisation, so it is not obliged to disclose its funding sources. However, since 1998 it has

---

5 Influence Map is an independent think tank that provides analysis and data to improve understanding of how business and finance influence the climate crisis.

6 The Heartland Institute was established in 1984 as a “foreign corporation” and recognised as a non-profit organisation. Its headquarters are located in Arlington Heights, Illinois. It is devoted to the development of conservative political values and is particularly opposed to ecology and anti-smoking policies; it also opposes global warming and supports fossil fuels.

received at least $676,500 from ExxonMobil, through Donor Trust, a fund that can distribute resources while concealing the identity of donors, and $55,000 from Koch Industries, while up until 2012 it had received $395,000 from Philip Morris. Among the most famous denialist sites are JunkScience.com and Friendsofscience.org.; the former is run by Steve Milloy, lawyer, lobbyist and Fox News commentator. Among his most famous hoaxes is the one according to which the US ban on the pesticide DDT (Carson, 2016) caused millions of deaths in Africa. Friendsofscience.org was launched in 2002 by a non-profit company from Calgary, Canada, and spreads fake news such as "The earth is cooling down" and "The sun is causing climate change". According to the Globe&Mail newspaper, the main financiers of Friendsofscience.org are the Canadian oil and gas industries. In Europe, the Global Warming Policy Foundation stands out – a British lobby created in 2009 by Lord Nigel Lawson, Margaret Thatcher's former finance minister. It recently published an article on the alleged increase in the polar bear population: from 26,000 in 2016 to 30,000 in 2020. In reality, as a study published in Nature in July 2020 shows, there are fewer and fewer polar bears, and in eighty years all the bears on Earth might well have disappeared. In 2020, research by Brown University[7] revealed how a quarter of the climate tweets in the days before and after Trump's decision to pull out of the Paris Agreement were posted by bots[8], automated programmes capable of performing precise tasks or interacting with humans. The experts examined 6.5 million tweets sent between May and June 2017 and, using Indiana University's "Botometer" software, these were sorted out by researchers in line with thematic categories. The study found that on a normal day, 25 % of all tweets about the climate crisis came from bots. In recent years, again on Twitter, deniers have adopted a new strategy: presenting themselves as "realists" as opposed to "alarmists". The website New Republic revealed that, up to 2016, the use of the terms "realists" and "alarmists" was quite rare (around 200 tweets per year), whereas, between January 2016 and March 2020, it grew by 900 %. In June 2019, several Italian

7 Brown University is a private US university founded in 1764, located in the city of Providence in the state of Rhode Island and is one of the most prestigious and selective universities on the North American continent.

8 Bots (short for robots) in computer terminology is a programme that accesses the network through the same type of channels used by users (e.g. it accesses web pages, sends messages in a chat room, moves around in video games, and so on). Programmes of this type are widespread in connection with many different network services, with various purposes, but generally related to the automation of tasks that would be too burdensome or complex for users.

websites published the “Petition on Anthropogenic Global Warming”, a document sent to the presidents of the Republic, the Council, the Chamber of Deputies and the Senate, in which they challenged “climate alarmism” and openly stated that there was neither urgency nor an irremediable crisis. The petition, signed by eighty-three people, including a number of scientists, sparked off a considerable response. The scientific blog climalteranti.it, which has been baiting climate deniers on the net for years, debunked the fake news in the document and showed how the signatories, with very few exceptions, had no expertise in climate science. The history of the 1997 petition, which was the model for the present one, was also reconstructed, showing, in particular, the links between the author of the 1997 text, the physicist Frederick Seitz, and the tobacco and fossil industries. Stefano Caserini, Professor of Climate Change Mitigation at the Milan Polytechnic and coordinator of climalteranti.it, says that, compared to ten years ago, the situation has clearly improved: “Today, more than 99 % of scientists recognise that global warming is anthropogenic. And, in fact, fake news no longer appears on scientific websites and in the most authoritative press, but it has gone viral on the web. The effect is devastating because doubt is instilled in a section of the population, precisely at a time when a radical change in collective behaviour is indispensable. The last resort for the deniers, devoid of alternative theories and defeated by the facts, is to claim that it is already too late to intervene”. After years of a total lack of control something is changing, at least on the most popular social network, Facebook. Since 2020 it has created the “Climate Science Information Center”, a platform that signals any fake climate news posted by users, who are invited to consult official and reliable sources such as the IPCC. Meanwhile, in 2020, due to planetary lockdown, global CO2 emissions decreased by 5.8 %, but forecasts for 2021 already show a 5 % increase. Despite having signed the Paris Agreement, China continues to increase its emissions, which rose by 0.8 %, even in the year of the pandemic. Beijing remains the main polluter with over 29 % of the CO2 produced worldwide (Nurra,2022). Both the US (despite Trump) and the EU have done better. They both reduced their CO2 emissions by 10 % last year and are now responsible for 16 % and 11 % of the world’s emissions respectively and, fortunately, as soon as he became President, Joe Biden, brought the US back into the climate agreement. China plans to achieve climate neutrality in 2060, the US and EU in 2050 (Chomsky, Pollin, 2020).

> Being ecological involves a massive change, but of a different order from the one pursued so far; if you have a vague idea that there is an “inside you” and an “outside you”,

> you are on the right track. Do not flounder in fear of the external threat, there is nothing external, we are part of nature, we are ecological[9]. (Morton, 2020)

In the words of Timothy Morton, we do not have to be ecological because we are already ecological: being ecological implies a strange sense of personal inclusion in what we are experiencing because we are the environment and the environment is us. In fact, we already co-exist with a great number of non-human entities: our own bodies, for example, are hosts to millions of them. The essential point is to admit that we have to reckon with the existence of entities other than ourselves. This point of view demands a questioning of the line of thinking that is anthropocentrism, by rethinking relations with machinic[10], vegetal and inorganic diversities. The various approaches that have defined the crisis on the human scale in the current historical period, have in common a 'transition towards a more conscious concern with non-humans'.

Rejecting the anthropocentric approach, Morton summaries, "does not mean that we hate humanity and want to become extinct, it means understanding how we humans are integrated in the biosphere as beings among others". Everything is interconnected, there is no dualism between subject and object, there is no distinction between nature and culture, we are entangled in a network of relationships in which each entity sees itself, first and foremost, as a multiplicity. Up to 10,000 species disappear every year. Carbon dioxide emissions are increasing exponentially, but governments cannot agree to limit them (Fig.1). When you drive one kilometre on diesel, this takes seven minutes off the life of the rest of the population. Even if we developed renewable sources, with current consumption rates we would have to cover every inch of land with solar panels in order to have enough energy in 300 years' time. This is the Anthropocene (Padoa-Schioppa, 2021), an age dominated by Man.

The future of our planet is not yet settled, and there is no need to look for another one. There are many things we can do to change the course of events. By changing eating habits for example: cutting down on consumption of meat and dairy products (Berners-Lee, 2019); and, above all, on a global scale, redistributing food production among the countries of the world. We should study the extraordinary regenerative capacity of the sea in recreating the ecosystems we

9 As T. Morton (We, Ecological Beings, 2020) explains well, we do not have to be ecological because we are already ecological.

10 In current studies on post-structuralism, when the notion of machinic refers to its etymology, i.e. the Latin machina and the ancient Greek mechané, it is always understood in the meanings of means, instrument, artefact, device, structure.

Fig. 1: Pollution from fuel fumes, coal-fired power plants, incine waste and inefficient transport produces millions of victims every year

have destroyed. Thanks to the results of space research and by creating floating greenhouses and hydroponic farms, underground cultivation will lead to a sustainable use of resources.

What role can design play? Through concrete supporting action, design can contribute towards building a better future via an approach that may significantly affect an impact on the environment. The ideas of designers can stir our consciences and make us aware of how we might contribute to safeguarding the ecosystem. The future of design can and must attempt to translate this emerging environmental awareness into a renewed understanding of a philosophy and policy with trees, the living beings that, more than any other, can save us right now.

References

Berners-Lee, Mike: *No planet B. Guida pratica per salvare il nostro mondo*. Il Saggiatore: Milano 2020.

Carson, Rachel: *Primavera silenziosa*. Feltrinelli: Milano 2016.

Chomsky, Noam / Pollin, Robert: *Minuti contati. Crisi climatica e Green New Deal globale*. Ponte delle grazie: Firenze 2020.

Klein, Naomi: *Il mondo in fiamme. Contro il capitalismo per salvare il clima*. Feltrinelli: Milano 2021.

Levantesi, Stella: *I bugiardi del clima. Potere, politica, psicologia di chi nega la crisi del secolo*. Laterza: Roma 2021.

Mancuso, Stefano: *La nazione delle piante*. Laterza: Roma 2019.

Morton, Timothy: *Ecologia oscura. Logica della coesistenza futura*. Luiss University Press: Roma 2021.

Morton, Timothy: *Iperoggetti*. Produzioni Nero: Roma 2018.

Nurra, Nicola: *Plasticene. L'epoca che riscrive la nostra storia sulla Terra*. Il Saggiatore: Milano 2022.

Padoa-Schioppa, Emilio: *Antropocene. Una nuova epoca per la Terra, una sfida per l'umanità*. Il mulino: Bologna 2021.

Francesco Monterosso

Re-thinking news: Information design and "antibody" contents

Abstract: Rethinking news and producing quality ("antibody") contents as a remedy against the rampant proliferation of fake news (and the related erosion of democracy), starting from the values and approaches shared by the worlds of design and journalism can be -and certainly are- an effective and interesting way forward.

The fertile confluence of the body of knowledge (and know-how) of these two disciplines has already produced excellent results, starting with design-driven experiments tried and tested in several significant experiences in Italy and abroad.

As Paolo Ciuccarelli stated, "once again, designers as 'meaning makers' find today in the narrative of the world of the infosphere a design ground on which to play out their historical experience".

Keywords: Fake news, slow journalism, visual journalism, design as common good, connected heritages

Where is the wisdom we have lost in knowledge?
Where is the wisdom we have lost in information?
T.S. Eliot

The idea behind the current debate is to try to connect, in a meaningful and innovative way, worlds and disciplines that have been distant until now, namely journalism and design. The common goal is to find, by mediating and hybridising approaches, knowledge, and technologies, effective solutions to respond to the crisis of traditional journalism, the distortions of digital journalism, and, in general, the fundamental issues that significantly impact the resilience of democracy (disinformation, information monopoly, media propaganda, etc.).

It is precisely on the issue of democracy that the journalism and design communities have been engaged in much soul-searching in recent years, giving life to a lively international debate.

Experiences made in the field of social innovation and design for social innovation should therefore be seen as steps along the path of "design as democracy".

In particular, at this historical moment of widespread crisis, the design community is placing a series of arguments, reflections and concrete actions at the heart of the discussion in an effort to conceive, develop and link together new opportunities for democracy and the well-being of all – acting on the socio-material ecosystem through forms of "active and purposeful resistance"[1].

Alongside the "design for democracy" debate, there is an equal and robust reflection on the relationship between journalism and democracy. Though deferring a more structured discussion on the subject to specialised studies in the relevant fields, it is interesting here to point out the central role of journalism as the backbone of democracy and the importance of the fundamental challenge, common to design culture, to address certain distortions related to the world of the *infosphere*[2] and all those retrograde phenomena typical of digital democracy such as fake news.

This debate has generated several possible solutions or perspectives aimed at overcoming this challenging stage. However, these are all aimed at recovering the primary sense of information as a common good of citizenship[3] within a contemporary digital culture strongly mediated by technology (networks, social networks, algorithms, software, dataviz and advanced visualisation tools, artificial intelligence, etc.) and the deluge of data (big data/open data), which places humans with their connections and interactions at the centre.

---

1 *Stand up for Democracy* is a digital space related to an open community project created to discuss and reflect on the relationship between democracy and design. The platform was created as a way to support the *Stand Up for Democracy Initiative* to proactively express the design world's perspective on the democratisation process currently in progress. This brief reflection refers to Ezio Manzini and Victor Margolin's open letter of March 2017, which better explains the concept of participatory democracy and also illustrates new and unprecedented paths of active citizenship and design that use digital technologies to create new forms of democracy, revitalising its practices and nourishing it with new ideas and opportunities. For additional reading: http://www.democracy-design.org.

2 It is a concept that has been taken up by several authors in recent decades starting with some insights from Teilhard de Chardin with the *Noosphere* (the shared body of human thought) or Jurij Lotman with the *Semiosphere* (space in which different sign systems in a culture can subsist and generate new information). More recently, philosophers such as Pierre Levy (collective intelligence) and Luciano Floridi have used the term *Infosphere*. The latter defines the infosphere as "the semantic space constituted by the entire body of documents, agents and their operations; […] the totality of the information space, which includes both cyberspace (internet, digital telephony, etc.) and conventional mass media (libraries, archives, newspaper libraries, etc.)".

3 There is an interesting debate in the design world around the topic, as reflected in the proceedings of an international conference titled *Design as Common Good. Framing Design through Pluralism and Social Values* – Swiss Design Network Symposium 2021.

In particular, the ongoing debate related to a slow approach to journalism is extremely stimulating in this regard. Peter Laufer, author of *Slow News. A Manifesto for the critical news consumer*[4], and a leading figure of an international movement for slow journalism, often uses the slow food metaphor: slow news for slow, good, clean, fair journalism. It is a cultural and philosophical model as well as a working method that newsrooms are called upon to adopt and, as such, it has its own characteristics that distinguish it from other forms of journalism. In short, the slow approach is based on three basic elements: time and care in the creation of information, the central role of user-readers, and the economic sustainability and profitability of the business of journalism.

With respect to the first point, speed is the worst enemy of source verification: it wipes out the culture of doubt, exposes even the best-known journalistic brands and the most experienced information professionals to the risk of fake news, and leaves no room for authentic news. Creating quality content takes time and great care. In order to counter the proliferation of “toxic narratives”, quality journalism should be concerned with creating “antibody” contents (Puliafito, 2017), that is, as Alberto Puliafito, editor-in-chief of *Slow News*, describes it as “content that has a certain social impact, lasts and is useful over time, makes us immune in the long run, and acts at cultural level, making knowledge settle and consolidate”[5]

4 A journalist and teacher at the University of Oregon’s School of Journalism and Communication, Peter Laufer is the author of *Slow News. A Manifesto for the critical news consumer* and a leading advocate of slow journalism, namely a form of journalism that needs to rediscover the long time involved in checking sources and the quality of products and, above all, its public service mission.

5 Alberto Puliafito, journalist and documentary filmmaker, head of *Slow News*, the Italian experiment in slow journalism, is (together with Daniele Nalbone) author of *Slow Journalism*. Puliafito has coined the term “antibody content”. The idea behind it is simple: “if you spread a toxic narrative, there is no point in countering it directly and in the short term. You cannot compete against a well-shouted slogan. Speed is the enemy of critical thinking and makes you lose a lot of energy, in a disjointed way. If you think you can respond to easy messages that appeal to a feeling of outrage in your gut, to emotions instead of reason, to perceptions and sensations instead of data, to the here-and-now instead of historicization, to narrow fields instead of multi-disciplinarity, well, you are fooling yourself. In fact, you are in it up to your neck and feeding on the same toxic mechanism”.
The concept of “toxic narrative” is very interesting (this is the definition given by Wu Ming, a collective of writers from the Bologna branch of the *Luther Blissett Project*: “To become a toxic narrative, a story must always be told from the same point of view, in the same way and with the same words, always omitting the same details, removing

(Nalbone & Puliafito, 2019). It goes without saying that such content does not have an expiry and can last over time. It is the exact opposite of those rampant and pervasive practices such as *churnalism*[6], which thanks also to social media and other phenomena, fuel the disinformation chain.

Slow journalism requires a community of *user-readers***.** As noted above, slow journalism thrives on community and the ability to create membership, that is, to make readers feel they are a truly playing a role in the birth, construction or dissemination of an article. In some cases, and experiments, readers even become *co-creators*. This *user-centred* approach (the reference to design disciplines is all too obvious[7]) also becomes the backbone of the (sustainable) business model underlying this philosophy. As Laufer points out, the ideal context of slow journalism is one in which "every reader wants to participate and be educated, demands quality journalism, and is willing to pay for it".

The values outlined so far – attention to democracy, information as a common good, ethical approach, slow time and care for quality, central role of user-readers, economic sustainability – are fundamental issues that we find, alongside the scientific discourse of design, both in its philosophical and cultural dimension (maker culture, open source, hackers, or design thinking), and, above all, in its practical and concrete dimension, typical of the heritage of expertise and know-how of design disciplines, and in particular (in relation to this discussion) to those of communication design: graphic, type and new media design, info design (infographics and dataviz) and UX design.

---

the same elements of context and complexity") which constitutes one of the greatest vulnerabilities of the information system.

6 In 2008, BBC journalist Waseem Zakir coined the neologism *churnalism* (from the union of the expression *churn out*, which literally means "to produce in large quantities, regardless of quality", with the word *journalism*) to describe an approach to the profession based on uncritical copying and pasting of press releases, without checking or examining the content in depth but, above all, without checking and cross-referencing information or citing the source.

7 User-centered design *(UCD)* is a design approach aimed at developing products or services of any kind with the user's point of view and needs in mind. It is based on the iteration of different analysis or observation, design and verification tools. The process has been defined and described by several authors and even in some ISO standards, such as ISO 13407, *Human-centered design process*, and ISO 9241-110 *Dialogue Principles* (mod. 2006). Different sources describe slightly different processes, but they are all guided by the same philosophy: to base the project on the actual needs of users.

With regard to the first point, the availability of open or open source data and the possibility of accessing freely usable tools have, for several years, stimulated a do-it-yourself culture even in the field of design applied to data and information (Ciuccarelli, 2008), (Menichinelli, 2006). Design also brings to the data realm the ability to creatively recombine fragments of the existing through visual narratives and more objective representations of reality. Examples of this are Rogers' (2012), and McCandless' (2011) experiences and approaches to data journalism. With regard to the ethical drive of hacker culture (Himanen, 2001), in its relationship with data and its visualization, hacking is an approach that manifests itself as a form of civic activism as, for example, in the investigations by Wired's data-driven journalists or the activities of DataKind's volunteers.

With respect to the second point, the considerations and analyses emerging from the experiences and design stories that Francesco Franchi[8] describes in *Designing News* (2013), a manifesto-book on the innovative and design-driven approach to the current challenges in the future of the news, media (and their critical issues) and, in general, the information system, are extremely relevant.

Through a substantial series of case studies and design experiments (some by the author himself or by his "travel mates"), Franchi analyses and studies in depth the transformations in the world of information, which, for several years now, has been experiencing a period of continuous and confused evolution.

> Information is now available on new devices (tablets and smartphones) in a variety of different formats (web and app) and through new models of content distribution, which may be divided into two categories: those which attempt to reproduce the dynamics of the conventional printed news in digital form (digital newsstands) and those which offer a complex system of services based on the break-up and fragmentation of the classic newspaper format (social magazines, news aggregators, and reading tools). Readers' habits have also changed radically. First of all, the amount of time people can dedicate to the media and the amount of attention they pay to its content have changed. The advent of the internet has also promoted the birth of horizontal channels and, by lowering the barriers to publishing content, increased the amount of information available and multiplied the number of participants actively supplying it. The information filtering system has therefore moved from pre- publication to post-publication (Franchi, 2013, p. 102).

The complexity of the transition of the information production/consumption system from analogue to digital is summarised in these words. For Franks, this phenomenon is embodied in a process of "atomisation" of information in time

8 A journalist, art director, and info-designer who has won several international awards for his innovative approach to contemporary journalism, he is considered one of the most prominent infographics professionals in the world.

and space. In the traditional paradigm, these were printed on paper or aired on TV within the limits of the amount of usable physical space. In the digital media, on the other hand, space is almost unlimited and virtually infinite (such as, for example, the fluid or responsive grids of apps and web sites, or the parcelling of content re-organised, into micro-units, according to articulated and complex information hierarchies and architectures that often interact with the consumer).

The second aspect of the change affecting the transformations and shift from print media to the web, new media, and social platforms is the "atomisation" of time.

On the Web, in fact, the concept of "expiry" is no longer an imperative, precisely because information can be updated, expanded, corrected or replaced at virtually any time. The process is extremely short: an idea takes shape, becomes text, and is published and disseminated at the same time. The front page of a newspaper or the cover of a magazine are replaced by a dynamic and ever-changing homepage. The nature of digital information is open: news may not have a definite form, may change over time, and, certainly is not disposed of once read. A story already published years earlier might become interesting again in relation to particular events, and it might be offered to readers again in a new version.

The possibility of splitting time into "atoms" is closely related to the possibility of doing the same with space. While the ability to independently access individual content items allows them to resurface at the right time and moment, their length and structure – in other words, the amount of space they occupy (as illustrated above) – can be a key parameter in determining when to use them.

After investigating the complexity of these phenomena, Franchi examines some possible solutions, which, adapting to the new context, focus on the quality of content and design. He does so in his book through a structured account of innovative design experiences, which, looking at design, have sought to adapt to the new context in two different ways: through "*redesign as restyling*," or "*redesign as re-thinking*," that is, through a more thorough and innovative systemic rethinking.

In the case of the former, redesign actions only in terms of restyling involve largely aesthetic changes to the printed product and in fact are limited to simply transposing traditional newspapers to new digital platforms. Looking at the case studies (where we see design action rather than theory), we see, in each case, a profound transformation of publishing products in terms of form and content[9].

9 Particularly interesting experiences of "redesign as restyling" are the digital redesign of the *Guardian* with a focus on Paul Barnes' and Christian Schwartz's type design

In the case of the latter, design is used as a strategic lever to differentiate and improve the entire production chain and therefore content, focusing on the value of design as a key element for success.

In this discussion, we are more interested in the latter aspect, both for the concrete results and for the theoretical implications that can be drawn from the analysis of these phenomena.

In the transition from "*redesign as restyling*," to "*redesign as re-thinking*," a profound paradigm shift takes place which can be associated with a new and more contemporary epistemology of the design profession.

These latter considerations are precisely where Franchi starts from, drawing on his own very rich experience as "newspaper designer" (Errea, 2018), to define the skills, approaches, and role that design must play in this rethinking process and paradigm shift. He does so by drawing on Donald Schön's lesson on the "reflective practitioner" (Schön, 1983) capable of moving through complexity through a continuous dialectic of doing and thinking; a "reflective conversation" in a unique and uncertain circumstance, aimed at overcoming challenging situations through a deep analysis and understanding of reality. As Franchi states, "practice becomes true research, in which solutions are hypothesized, experimented with, and assessed" (Franchi, 2013, p. 212).

This approach, typical of design culture, is also the key to success in newsrooms, where the designer becomes a "re-thinker" who guides and governs, together with other players, the entire editorial process[10] (Lindblom, 1965). This aspect introduces an element of innovation within the transition to digital newsrooms: journalists and designers work as equals in the same physical space. Richard Turley, design director of Bloomberg Businessweek, stresses the importance of this:

> Editorial and design work together very closely. What is perhaps unusual about our process […] is the geography of our office. We work with editors and designers sitting

---

work; or the digital migration (with innovative projects combining web and new media design, infographics and brand identity design) of specialised magazines such as *La vita nova* (Sole 24ore), *Bloomberg Businessweek+*, *Astronaut* or *Kataky*.

10 An extremely interesting aspect of Franchi's discussion is the reflection around decision-making processes in newsrooms, as a result of his re-reading of Charles Lindblom, Professor of Political Science and Economics at Yale University, who analyses efficiency in decision-making processes pointing out that in certain situations (such as that of a newspaper's newsroom) decisions are the result of the dialectic among multiple decision-makers (which Lindblom calls "the intelligence of democracy") characterised by a wide variety of behaviours and interests.

> side by side. So apart from getting on and understanding each other on a personal level, it means that we are aware of each other's thought processes pretty much the moment they happen. That places design in a central role in the editorial process (Franchi, 2013, p. 214).

This new condition has certainly led to an exchange of expertise and know-how, a pouring over of visions, approaches and skills that have hybridised the profession and role of editors, journalists and designers. It is a fortunate connection of knowledge that, mixing methods, tools, techniques (and technologies!), "ed-ex" designers (the combination of *editorial* and *experience*) are those new designers who Khoi Vinh, former digital design director at the New York Times, describes as those who "know how to enhance and even maximize an audience's understanding of published content. They're comfortable working with writers and editors to help shape what we read, and they create unique value out of the combination of the written word and graphic language. […] who can create superb software for editorial products, who can combine the holistic, systems-level thinking of UX with the incisive storytelling instincts of editorial design" (Franchi, 2013, p. 221).

The ed-ex designer becomes the director and "re-thinker", a professional capable of understanding and governing the expectations of all the actors involved (authors, editors, computer scientists, data analysts, etc. and users), but above all capable of materialising, through the skilful blending of their specific skills (visual narratives, infographics, information architectures, user experience, etc.), a series of innovative and original qualified digital editorial artifacts[11].

As Franchi states in conclusion:

> The editorial experience designer moves toward humanization of digital technologies through interaction among digital, biological, and cultural systems, among virtual space and real space, technological and physical experiences. On the one hand he understands the essence of the digital media, and his intervention (in a context we might describe as post-digital) shifts attention from the digital being to the human being, reflecting on the potential of digital technology only in the terms in which it is capable of adapting to and improving the user's life. On the other hand he understands that the operating context

11 Among the various project experiences of "redesign as re-thinking" mentioned in Franchi's text, it is worth noting Franchi's own editorial project for *IL – The Intelligent Lifestyle Magazine* (of the Italian financial newspaper "Il Sole 24 Ore") (Franchi & Rocca, 2016). It is a project in which user experience, data journalism, visual narratives, illustrations and infographics are skilfully blended, enriched by painstaking attention to the form and content of the articles. Among its many accolades, the project has also won the European Design Award and the Compasso D'Oro.

of the new editorial initiatives is not merely a technological phenomenon, nor merely a network of people, but the two things together, and that the initiative lies in the hands of those who come up with new algorithms or perfect existing ones, and those who make creative, incisive use of them. In developing new editorial projects it is therefore more necessary than ever to balance aspects of design, alternating algorithmic automation of certain parts with direct intervention of designers in others where ‘manual’ attention to detail may add value to the product (Franchi, 2013, p. 223).

References

Botta, Massimo / Junginger, Sabine: “Design as Common Good. Framing Design through Pluralism and Social Values”. Swiss Design Network Symposium 2021, Online. Swiss Design Network/SUPSI/HSLU: Lugano/Luzern/Zürich 2021, retrieved 6.6.2022 from 10.5281/zenodo.4899521.

Ciuccarelli, Paolo: *Design Open Source. Dalla partecipazione alla progettazione in rete*. Pitagora: Bologna 2008.

Errea, Javier: *Newspaper Design: Editorial Design from the World’s Best Newsrooms*. Die Gestalten Verlag: Berlin 2018.

Franchi, Francesco: *Designing News. Changing the World of Editorial Design and Information Graphics.* Die Gestalten Verlag: Berlin 2013, pp. 45–228.

Franchi, Francesco / Rocca, Christian: *The Intelligent Lifestyle Magazine: Smart Editorial Design, Storytelling and Journalism*. Die Gestalten Verlag: Berlin 2016.

Himanen, Pekka: *The Hacker Ethic and the Spirit of the Information Age*. Random House: New York 2001.

Lindblom, Charles E.: *The Intelligence of Democracy: Decision Making Through Mutual Adjustment*. The Free Press: New York 1965.

McCandless, David: *Information is beautiful. Capire il mondo al primo sguardo.* BUR-Rizzoli: Milan 2011.

Menichinelli, Massimiliano: *Reti collaborative: il design per un’auto-organizzazione open peer-to-peer*. (dissertation). Politecnico di Milano: Milano 2006.

Nalbone, Daniele / Puliafito, Alberto: *Slow Journalism. Chi ha ucciso il giornalismo*. Fandango: Rome 2019.

Puliafito, Alberto: “I contenuti anticorpo”. *Alberto Puliafito – Meno, Meglio*, blog retrieved 15.4.2022 from https://www.albertopuliafito.it/i-contenuti-anticorpo/.

Rogers, Simon: “Data visualization DIY: Our Top Tools”. In: Gray, J., Chambers, L., Bounegru, L., (eds), *Data Journalism Handbook. How journalists can use data to improve the news,* O’Reilly Media: Sebastopol 2012.

Shön, Donald: *The Reflective Practicioner. How Professionals Think in Action*. Temple Smith: London 1983.

Ferdinando Trapani

From the Panopticon to the freedom to communicate in the city space

Abstract: The aim of this article is to explore the possible link existing between space, particularly city space, and disinformation. The examination of some points of transition and change in the structure of technologies and their exploitation by power systems and power games will help identify some of their characteristics, namely control, domination and defence. The urban and territorial spatial dimension is a relational environment produced in various ways by the government practices and policies of a city. Transformations of the city space are set in motion by decision-making power, and these in turn are dependent on public opinion, which can be influenced in various ways by forms of disinformation. Citizens seek to trace the truth of information and therefore demand assurance from decision makers that their communication actions are anchored in reality. The state does not seem to be able to provide these guarantees due to the social transformation brought about by the profound change in communication instruments. In the conclusions, the study stresses the urgency to research into the links between city space and communicative action under conditions in which the phenomena of information distortion are controlled and assessed also with the aid of information technologies implemented to challenge the complexity of the exponential growth of data used as the basis for building public opinion without which no planning effort is possible.

Keywords: Media, urban & regional planning, ideology, public opinion, technologies of power, ICT

Introduction

What is the space discussed in this study? Let us limit ourselves to the city space. The city is understood here in the sense that Edoardo Salzano proposed with the interpretative triplet *urbs*, *civitas* and *polis*: (Salzano, 2008). The starting point is that communication, beginning with Habermas's (1981) theory of communicative action, which has profoundly impacted communicative planning (Forester, 1982, 1988), is what makes a relationship between *urbs*, *civitas* and *polis* possible, and that therefore communicative quality affects the quality of living. When communication is distorted, political communication based on a rational approach to real problems is challenged in any effort to guide social transformation. Information distortion is one of the multidimensional features of power and its false consciousness (Lukes, 1974, 149).

Forester (1982) addressed the issue of power play by considering the contribution of communication and the various phenomena of distortion that characterise the exercise of power. What emerged in the processes of urban transformation, well before the advent of the Web, was that around the communication table rational decision-making is always influenced by a series of more or less intentional disturbances caused by those who wield greater power. Planners should be aware of this by properly preparing themselves by reviewing their work from a communicative perspective. It is not just about changing one's language skills. It is not enough to "translate" the design proposal into "non-technical" language. Planners need to be aware that they will very likely be confronted by some form of antagonistic power capable of exploiting or putting an end to any hypothesis of change if the latter involves high costs and sacrifices for those in decision-making power.

Protecting oneself from disinformation, misinformation and bad information is virtually impossible. The only thing we can do is to prepare for it because as Forester argues, we need to consider the fact that this type of news that does not entirely reflect reality can always be built ad hoc or can be the result of countless other factors that are not voluntary on the part of those who produce it. That is why Forester's advice (1988, p. 47) is to anticipate and work hard to combat communication distortions that undermine democratic planning. Therefore, progressive planning – structurally critical but hardly fatalistic – is both a way to democratise and practically organise a given planning process.

As concerns the intertwining of planning and the power of the media to shape public opinion, it has been noted that psychoanalysis has made a considerable contribution (Gunder, 2011) and that too often planners are left outside the world of information, leaving the field of communicative effectiveness to free market speculation, rendering any possibility of controlling urban transformations useless (Calavita & Krumholz, 2003).

The case of Minister Fiorentino Sullo in Italy is perhaps the most serious and disconcerting case of disinformation that has ever occurred in the history of Italian urban planning and whose nefarious effects are still felt in the disruption of the urban layout of territories in so many parts of the country, ultimately resulting in a real block of new constructions: a sort of cartel of social and business entities and forces linked in various ways to the construction industry (Parlato, 1972). At the height of his political career in the Italian Christian Democrats, Sullo, alongside Amintore Fanfani, was the target between 1960 and 1964 of a violent smear campaign in the press claiming that he was a gay person (Lanzetta, 2015; Macchioni, 2021). By wiping out Sullo's political reputation with the disinformation and defamation campaign, the only attempt at Italian urban reform fizzled away, as did that at agrarian reform (Sullo, 1964; Becchi, 1997; Salzano, 1998, pp. 119–123).

In the "Sullo affair" disinformation was served through the newspapers[1]. The former minister was never given a chance to reply to the allegations.

Political technologies for control in space: The gaze

In the late eighteenth century, Jeremy Bentham (1780) believed that the whole new society cleansed of the experience of the French Revolution in the perspective of a utilitarian philosophy of which he was probably the leading representative paved the way for the entry of happiness as the motive and end of individuals and contributed significantly to the development of liberalism (Abbagnano, 1971). In this regard, this marks the birth of the conception of the state as human behavioural analyst, and that it is only through this ability that the proper punishment can be accurately determined. Knowing is everything, and dedicated technological devices are needed to pursue it. The panopticon was a proposed technology of power based on the alleged effectiveness of the gaze (control) of inspection no one, not even the controller, could escape from. The controlling gaze is everything. This is a new light that allows human behaviours to be treated solely in the perspective of their ends and the intensity of the motivations behind them. Desire, pleasure, and individual happiness that cannot be distinguished from collective happiness is a social project that attempts to address the issue of the great multitude versus the possibilities for the few who run government to understand, direct, and guide the masses. These tasks are all impossible without the use of the machine, which, while bearing in mind the differences with the human brain, presents a mode of organisation not entirely different from that of mathematics (von Neumann, 1958).

Yet, despite criticism, Bentham's thought still pervades the world of law and especially economics. Foucault's reflection and focus on the panopticon as a diabolical machine (Foucault, 1983) has played a decisive role in developments in economic studies in which the self-balancing character of social and economic organisations subject to types of high-level planning control has been considered (McKinlay Starkey, 1998).

1 In April 1963, a violent press campaign was unleashed against the Italian Minister of Public Works Fiorentino Sullo: The newspaper "il Tempo" and "il Popolo" (the official newspaper of the Christian Democratic party) on April 13th, announced announced that the party distanced itself from the actions of its minister.

Journalism was born at the same time as the panopticon. From the utilitarian and individualistic politics of looking to listening over time, the technology of power moves from the architectural space of the city (of new types of buildings designed for the new society to be controlled and possibly corrected) to the social relational environment.

Between gazing into physical space and listening to words on the Web there is also the video media that maintains the controlling potential of power technologies over time (Adorno, 1957). The debate on the relationship between the masses and communication technologies has developed so much that, in the early 1960s, it led to a fundamental reflection on the role of the medium as an element to be considered per se to assess the social value of communication more than the content of the message: it is not the content that shapes society but the nature of the medium (McLuhan, 1964). Baudrilliard (1995) seems to take up the same concept but stretches the argument to the point of considering the likelihood that the medium's ability to transform society goes so far as to *kill reality*. The continuous mirroring of reality with its representation (television, but a fortiori it could also apply to social media today) causes the medium to dissolve into reality and reality to dissolve in turn into the medium.

The advent of information technology and social change

Today we have network information technologies that shape the way opinion is formed and journalism is developed.

Manuel Castells (2001) set out the constitutive principles of the internet as a culture from its original creators (defence and software producers).

Taking a step back from the advent of the internet in the late 1990s, Chomsky stigmatized the power of the media vis-à-vis the instrumental use of political propaganda: this changes the way democracy is understood (Chomsky, 1994).

For Castells (1997), the intertwining of politics and the Web in the late 1990s could be considered informational politics, in the sense that politicians, in search of electoral consensus, turned their communication activity from the physical city (election posters) to the traditional media, also coming to use the internet, though in a less massive way (Castells, 2001).

In Italy, it is worth mentioning the phenomenon of the 5 Star Movement (M5S), a political party that upon its appearance on the Italian political scene in 2009 operated almost exclusively online, becoming the second largest national party in a very short time. Unlike traditional political parties, M5S operated almost exclusively online, with no non-digital venues or forms of communication. Incredibly, for many years candidates were forbidden from giving interviews on TV or to the press (Musso, Maccaferri, 2018; Pirro, 2018). For M5S, propaganda and even the entire communication flow of the movement's members took place mainly through a dedicated online platform reserved only for members for important internal motions. For the M5S, the world of the Web was almost exclusive to the extent that it constituted one of the main challenges for the movement in the effort to renew the entire national political system. The movement has sought to combine three different challenges to representative democracy: a *reformist challenge* (by strengthening a set of direct democracy tools, such as referendums, within an institutional framework that remains centred on the Parliament), a *utopian* challenge (the complete transcendence of representative democracy *through the massive use of ICT tools*), and a *plebiscitary challenge, which is expressed through a top-down approach to the Web* (Floridia & Vignati, 2014).

Another example of a possible link between politics, the city and disinformation well worth a closer look is the phenomenon of the so-called "Bestia" (Beast) related to the rapid rise of Matteo Salvini's League, which has often been described in almost legendary terms: a sort of optimum for the technology of power applied to the quest for electoral consensus through a cynical and reckless use of public opinion fuelled both by political information professionals and the sentiments of social media users (Gabanelli & Ravizza, 2019). The potential of Web data analysis tools is often attributed an *automatic* ability to respond to the expectations of potential voters even while taking for granted the production of disinformation generated by dedicated algorithms, when it would be more appropriate instead to first assess the skill of political analysts who know how to use these technological innovations appropriately (Rociola, 2018).

It is difficult to *attribute to the machine the ability to change the course of political action* but, in fact, it is quite reasonable to acknowledge that *machines provide new energies to the ways political communication is exercised in the terms of the decisive enhancement of the technologies of* power. This should be considered in order to analyse and understand the relationship between power games and governance of the transformations of the space of cities and territories in which voters are mere passive spectators of the *king's-makers*' skill (Mazzoleni, 1997).

Referring to the literature in the field of urban planning, the use of the Web is a relatively new thing on an established basis in the field of urban policy. The upheaval of the party power structure over social consensus driven primarily by values can be traced back to the actualisation of the many efforts made to get rid of parties understood as distancers/obstacles between active citizenship and innovative transformation policies for the city/polis (Olivetti, 1949) and for territorial governance (Magnaghi, 2000).

The Benthamian contraption of the Panopticon is a box that constitutes a mode of representation of the world in which every point of the territory can be controlled, giving the feeling that every imperfection and deviation from social normalcy can be corrected. It is not difficult to find similarities and affinities between Bentham's diabolical contraption and the potential function of controlling social behaviour across the planet as theorised in the conception of a new surveillance with information technology (Marx, 1985). Moreover, this new surveillance "can contribute to political pluralism, which is crucial for democracy, by making surveillance tools widely available so that citizens and competing groups can use them against each other, as well as the government, to increase accountability" (Marx, 2002, p. 22).

Conclusions

Although power games go to any lengths to manipulate the perception of reality, users' search for it is irrepressible and sooner or later becomes unstoppable. As a social communication problem, democratic power needs to be able to establish in the flow of controlled information at least a situation of balance between those who speak and those who listen, between those who attack and accuse and those who are affected by fake news. As McLuhan (1964, pp. 21–22) recalled,

> Pope Pius XII was deeply concerned that there be serious study of the media today. On February 17, 1950, he said: "It is not an exaggeration to say that the future of modern society and the stability of its inner life depend in large part on the maintenance of an equilibrium between the strength of the techniques of communication and the capacity of the individual's own reaction".

The communication McLuhan refers to was predominantly unidirectional, but there are still aspects of imbalance between speaker and receiver even in the case of "surveillance slack" (Marx, 2002), that is, granting everyone a high communication technology capacity. Power technologies control people under the guise of granting/acquiring increasingly greater freedom to communicate. It is a characteristic of the medium to drive everyone into submission through the seduction of representation as an absolute mirror of reality (Baudrillard, 1979). However, it is one thing to have the freedom to communicate, in which the seduction of the medium is present, and quite another to infringe on the freedom of others to be, to live, and to share a relationship with the community. The possibility that continued denial of communication only generates social unease, alienation, a sense of exclusion and indifference in participation in public action, as well as hatred, anger and violence (Baudrillard, 1995).

At this point, it should be noted that in thinking about effective urban planning, urban taxation in relation to urban social welfare, i.e., the public city, becomes the point where the actual feasibility of the transformation of the physical city's space and the drive of the values of the players of this transformation come together (Camagni, 2008; Ferri, 2015).

In technical urban planning, which deals mainly with land and cadastral value, it is very difficult for a problem such as fake news to exist. Yet, the public city and urban welfare exist if there is an urban need that is formed through debate over major choices of location, which, in turn, depend on the political actions of those who, through consensus, achieve and hold decision-making power. So, in urban planning, the phenomenon of fake news is indirect but exists in a subordinate way. The reason is, as mentioned above, that it is only in the relationship between *polis* and *civitas* that the negative influence of fake news manifests itself directly, but it is reasonable to assume that if planning is indebted to the theory of communicative action and hence communication is the subject of disinformation, misinformation or bad-information, planning too is negatively affected. In the future, critical analysts called to assess planning decisions in recent years will have to determine the quality of the communicative action around major choices (the way the decision was made to demolish the bridge in Genoa or the heated debate over the tramlines or the new headquarters of the Sicily Region in Palermo, the new stadium in Rome, etc.). Keeping in mind how much public opinion has affected major urban planning choices is very important in guiding urban planning since any infrastructure affects the value of land and its trend over time.

Without secure or at least reliable communication, the project of the public city is left at the stake because fake news disorients both the decision (polis) and the consensus of the citizenry (civitas) and, as a result, the quality of inhabiting the city space in terms of territorial extension (urbs) is no longer a goal that can be attained without some of the actors of urban transformation benefiting for themselves at the expense of others.

Ultimately, I believe that the search for disinformation, if anchored in shared and open ethical principles of social utility control, with the help of highly innovative technologies, can become an opportunity for profound change: from *defence against power technologies* to an *instrument to be used in learning processes*.

References

Abbagnano, Nicola: "Utilitarismo". In: *Dizionario di Filosofia*. UTET: Torino 1971, p. 905.

Adorno, Theodor W.: "Television and the Patterns of Mass Culture". In: Rosemberg, Bernard / White, David M. (eds.), *Mass Culture. The Popular Arts in America*. The Free Press – Collier-MacMillan: New York 1957, pp. 474–488.

Baudrillard, Jean: *De la séduction*. Gallimard: Paris 1979.

Baudrillard, Jean: *Le crime parfait*. Galilée: Paris 1995.

Becchi, Ada: "La legge Sullo sui suoli". *Meridiana* 29, 1997, pp. 107–134.

Bentham, Jeremy: *An Introduction to the Principles of Morals and Legislation*. First printed 1780. Clarendon Press: Oxford, 1907. Reprint of 1823 edition.

Calavita, Nico / Krumholz, Norman: "Capturing the Public Interest: Using Newspaper Op-Eds to Promote Planning in Conservative Times". *Journal of Planning Education and Research* 22(4), 2003, pp. 400–406.

Camagni, Roberto: "Il finanziamento della città pubblica". In: Baioni, M. (ed.), *La costruzione della città pubblica*. Alinea: Florence 2008, pp. 39–57.

Castells, Manuel: *The Power of Identity*. Blackwell: Oxford 1997.

Castells, Manuel: *Internet Galaxy*. Oxford University Press: Oxford 2001.

Chomsky, Noam: *Il potere dei Media*. Vallecchi: Florence, 1994.

Ferri, Vittorio: "Considerazioni sull'evoluzione della finanza dei comuni e sul finanziamento della città pubblica". In Urbani, Paolo (ed.), *Politiche urbanistiche e gestione del territorio*. Giappichelli: Torino 2015.

Floridia, Antonio / Vignati, Rinaldo: "Deliberativa, diretta o partecipativa? Le sfide del Movimento 5 stelle alla democrazia rappresentativa". Q*uaderni di Sociologia*, 65, 2014, pp. 51–74, retrieved 8.4.2022, from 10.4000/qds.369.

Forester, John: "Planning in the Face of Power". *Journal of the American Planning Association*, 48(1), 1982, pp. 67–80, retrieved from DOI 10.1080/01944368208976167.

Forester, John: *Planning in the Face of Power*. The Regents of University of California: Berkeley, 1988.

Foucault, Michel: "L'occhio del potere. Conversazione con Michel Foucault". In: Foucault, Michel / Perrot Michelle (eds.), *Jeremy Bentham. Panopticon, ovvero la casa d'ispezione*. Marsilio: Turin, 1983, pp. 7–30.

Gabanelli, Milena / Ravizza, Simona: "Matteo Salvini e «La Bestia»: come catturare 4 milioni di fan sui social". *Il Corriere.it* 20.10.2019, retrieved 8.4.2022 from https://www.corriere.it/dataroom-milena-gabanelli/matteo-salvini-la-bestia-come-catturare-4-milioni-fan-social-facebook-twitter-instagram/a00069d2-f33f-11e9-ad64-4488d500d2a2-va.shtml.

Gunder, Michael. "A Metapsychological Exploration of the Role of Popular Media in Engineering Public Belief on Planning Issues". *Planning Theory*, 10(4), 2011, pp. 325–343.

Habermas, Jürgen: *Theorie des kommunikativen Handelns*. (Band 1: Handlungsrationalität und gesellschaftliche Rationalisierung). Suhrkamp Verlag: Frankfurt a. M. 1981.

Lanzetta, Nino: "Sullo e Il Borghese: La più scandalistica campagna del fango di un giornale di destra degli anni sessanta contro un Ministro riformista che voleva l'apertura ai socialisti". *Il Dialogo*, 2015, retrieved 6.6.2022 from https://www.ildialogo.org/NotizieIrpinia/personaggi_1427742953.htm.

Lukes, Steven: *Power: A Radical View*. Palgrave Macmillan: Houndmills, Basingstoke, Hampshire 1974.

Macchioni, Marco: "Il democristiano meno democristiano di tutti. Cent'anni fa nacque Fiorentino Sullo, politico perlopiù dimenticato con una lunga storia di conflitti con il suo stesso partito, la DC". *Il Post,* 31.3.2021, retrieved 6.6.2022 from https://www.ilpost.it/2021/03/29/fiorentino-sullo/.

Magnaghi, Alberto: *Il progetto locale*. Bollati-Boringhieri: Torino 2000.

Marx, Gary T.: "The Surveillance Society: The Threat of the 1984-Style Techniques". In: *The Futurist*. Bethesda, 1985, pp. 21–26, retrieved 6.6.2022 from http://web.mit.edu/gtmarx/www/futurist_surv_soc.pdf.

Marx, Gary T.: "What's New About the «New Surveillance»? Classifying for Change and Continuity". *Surveillance & Society,* 1, 2002, pp. 9–29.

Mazzoleni, Gianpietro: "Comunicazione politica". *Rassegna Italiana di Sociologi*a, 3, 1997, pp. 473–486, retrieved 8.4.2022, from DOI 10.1423/2467.

McKinlay, Alan / Starkey, Ken (eds.): *Foucault, Management and Organization Theory. From Panopticon to Technologies of Self*. Sage: London et al. 1998.

Mc Luhan, Marshall: *Understanding Media: The Extensions of Man*. McGraw-Hill: London-New York 1964.

Musso, Marta / Maccaferri, Marzia: "At the Origins of the Political Discourse of the 5-Star Movement (M5S): Internet, Direct Democracy and the «future of the past»". *Internet Histories* 2(1–2), 2018, pp. 98–120, retrieved 8.4.2022, from DOI 10.1080/24701475.2018.1457295.

Olivetti, Adriano: *Democrazia senza partiti*. Comunità: Roma 1949.

Parlato, Valentino: "Il blocco edilizio". In: Indovina, Francesco (ed.), *Lo spreco edilizio*. Marsilio: Venezia 1972, pp. 189–200.

Pirro, Andrea L.P.: "The Polyvalent Populism of the 5 Star Movement". *Journal of Contemporary European Studies*, 26(4), 2018, pp. 443–458, retrieved 8.4.2022 from 10.1080/14782804.2018.1519484.

Rociola, Arcangelo: "Cos'è in definitiva "La Bestia" di Matteo Salvini". *AGI*, Politica, 15.9.2018, retrieved 8.4.2022, from https://www.agi.it/politica/la_bestia_social_salvini_morisi-4373864/news/2018-09-14/.

Salzano, Edoardo: *Fondamenti di urbanistica. La storia e la norma*. Laterza: Roma-Bari 1998.

Salzano, Edoardo: "Urbs, Civitas, Polis". in *Eddyburg* 2008, retrieved 8.4.2022, from https://eddyburg.it/archivio/urbs-civitas-polis/.

Sullo, Fiorentino: *Lo scandalo urbanistico*. Vallecchi: Firenze 1964.

Von Neumann, John: *The Computer and the Brain.* Yale University Press: New Haven-Connecticut 1958.

Viviana Trapani

Fake news: A design-driven approach

Abstract: The Fake News phenomenon is affecting individual choices, opinions and political orientations. However the ubiquity of digital technology and the spread of fake news represent two sides of the same coin; therefore, advanced, interdisciplinary technology and strategies are needed to curb Fake News, starting with design culture, where visual communication and visual information support an ethical approach shared with journalistic communication.

Finally, it should be stressed that the Fake News project, via the various design-skills involved, has highlighted the innovative potential of Artificial Intelligence; through metrics and algorithms, but also with the indispensable contribution of human beings, the latter can support truthful participatory information.

Keywords: Fake news, information design, participatory journalism, artificial intelligence, wicked problem

Fake news: A wicked problem

The expression "fake news" defines a phenomenon that has always been present throughout the course of history; it began to spread in the early years of this millennium to describe the intentional and wide-scale dissemination of false or partially false information, conveyed by the media, in particular through the ubiquitous digital technology that feeds the multiple communication platforms on the web. "Disinformation", at varying levels of intensity and purpose, is in most cases constructed as a precise strategy aimed at reinforcing certain political opinions, commercial interests and cultural positions. Compared to the past, the dissemination of fake news today seems to be a "total social fact"[1], i.e. capable of influencing and determining a series of apparently diverse and distanced phenomena. It involves the various levels of community functioning and determines

1 The anthropologist Marcel Mauss in his most important work, "Essay on the Gift" of 1923, introduces the concept of "Total social fact". "Facts capable of generating a harvest of phenomena of a similar nature, that is, those facts capable of involving a large part of the dynamics of the community. […] For Mauss the total fact was a powerful tool available to the scholar: a basic structure through which it became possible to settle and interpret social dynamics apparently distant and of a different nature". You can read this contribute retrieved 10.3.2022 from https://www.filosofico.net/mauss.htm

dangerous imbalances at all levels of democratic consensus. There is, therefore, an urgent need to carry out appropriate consideration and analysis of the phenomenon in order to develop critical and operational tools that can control and verify information. Since 2018 especially, on the occasion of the US presidential mid-term elections[2], the anti-democratic implications of the phenomenon have begun to be subjected to analysis, especially by journalists and communication experts. An incredibly broad dimension and articulation of the phenomenon emerged that was better identified as *post-truth*, a term that, in 2016, the Oxford Dictionaries had already indicated as the word of the year, defining it as: "relating to circumstances in which people respond more to feelings and beliefs than to facts"[3].

Clearly, the Fake News phenomenon heavily influences both the everyday dimension, regarding the choices that people are induced to make in terms of consumption and individual behaviour, and the formation of opinions and political orientations, which may lead decisively to the pre-eminence of one side over another. The manipulation of facts, to the advantage of heavily-oriented or totally invented forms of "narration", is today, above all, a terrain on which the delicate equilibrium (and the weighty imbalance) that drives the scenarios of geo-politics is built, as can, unfortunately and dramatically, be observed at this moment in history[4].

We are part of a knowledge-based society and economy based around the use of digital technology in the creation, dissemination, transformation, transfer and utilisation of knowledge in all its forms. In particular, Big Data are the most precious material and commodities – for the development of scientific research,

2 In March 2018, The Guardian newspaper published the revelations of Christopher Wylie, a collaborator of Cambridge Analytica (CA). The company would also have influenced the British referendum on Brexit; identified the profiles of the people most easily influenced to vote for Trump, and then targeted them with personalized and effective electoral messages to modify their vote. To identify the target, CA allegedly came into possession of the data of Facebook users (tens of millions of people) illegally and M. Zuckemberg had to answer for the data leakage scandal in the US House and Senate.

3 Retrieved 10.3.2022 from https://www.oxfordlearnersdictionaries.com/definition/english/post-truth?q=post-truth.

4 We are currently witnessing the aggression towards Ukraine by Vladimir Putin's Russia; a war in which, as is always the case, the role of propaganda and disinformation on the part of the opposing sides is central, but with greater and more absolute emphasis on the part of a dictatorial regime such as Russia's, which does not allow for freedom of the press and opinion.

for fundamental monitoring and assessment processes of the state of the environment, for governing democratic and participatory processes that implement people's capabilities[5] and quality of life (Nussbaum, 1988, 1992, 2020; Sen 1993, 1999: pp. 14–24). However, on the other hand, the intensity and ubiquity of flows of communication generate infinite possibilities in spreading, more or less deliberately[6], forms of simplification, distortion or the total mystification of facts.

Since the "virtuous" ubiquity of digital technology applications and the spread of fake news are actually two sides of the same coin, attempts to curb Fake News need to develop equally complex and interdisciplinary strategies.

We can single out strategies for countering Misinformation and Disinformation (Kats, 2012, p.15) as attempts to find a solution to a problem of the type defined by Rittel and Webber as "wicked problem" (Rittel & Webber, 1973, p. 161). The term "wicked problem" defines a category of highly complex issues that do not envisage definitive solutions; one can only proceed by attempting to establish partial, more or less effective solutions, on the basis of open experimentation processes.

> There are no right or wrong solutions here, only better or worse. There is too much complexity for this to be reduced to a dichotomy; there are too many interconnections between cause and effect to trace a linear path, too many interests involved to be interpreted unambiguously. A profoundly inspiring interpretation comes to us from Jeffrey Conklin (2006), where he suggests that it is not possible to understand a "cursed problem" until a solution to it has been formulated (Liguoro, 2020).

The comparison with the extreme complexity of wicked problems has also greatly inspired the various currents of Design Thinking; a human-centred approach

5 The concept of *Capability* relating to human development is indebted to the Indian Nobel Prize winner A. Sen and the American philosopher M. Nussbaum. Sen and Nussbaum point to a need to develop in people, along with skills, the personal capacities and possibilities to act freely and responsibly within their communities, in order to achieve a form of total well-being of the individual, going beyond the strictly economic and concretely nurturing a widespread condition of social justice.

6 According to Joel Kats, obtaining correct and relevant information is the object of communication design. Uninformation is irrelevant, though not necessarily false, information. Misinformation deliberately disguised as information can distort and mislead, but also severely harm institutions and people. Misinformation is not always intentional, as it can be the result of incompetence and the use of incorrect data. Extreme Misinformation is Disinformation, deliberately and constantly developed to achieve a financial, political or military objective. Misinformation and Disinformation fuel the proliferation of fake news that we are constantly witnessing.

to innovation, as defined by Tim Brown, which adopts the tools and methods of design to integrate people's needs, technological opportunities and business objectives.

For Richard Buchanan, the design thinking method is characterised precisely by the ability to formulate effective, participatory design forms with regard to certain categories of apparently unsolvable problems.

> Lastly, it points toward something that is often forgotten, that what many people call 'impossible' may actually only be a limitation of imagination that can be overcome by better design thinking. This is not thinking directed toward a technological 'quick fix' in hardware but toward new integration of signs, things, actions, and environments that address the concrete needs and values of human beings in diverse circumstances (Buchanan, 1992, p. 20).

Design thinking therefore proposes a cognitive and design approach, which may also support professionals and more or less participative users of textual and visual communication, in proposing information based on true facts, through articulated processes of virtuous sharing and comparisons between people, ideas and points of view.

Design and truth: Communication and information design

The virtuous and truthful design of communication and information devices and expressions is a principle rooted in the culture of design, which has long since deployed and shared with other disciplines specific skills, analytical tools and scientific methodology in an ethical approach to information. In fact, communication and information design offers its own significant history of adherence and collaboration with journals and publications in the fostering of awareness and critical knowledge of facts.

Already in the 1970s, "public benefit" graphics represented a widely-shared and -practised position in Italian visual communication, starting with Albe Stainer, who provided an initial theorisation, and Massimo Dolcini, who proposed it as "aesthetic quality, communicative clarity and social involvement" (Piazza, 2009, p. 39). Subsequently, in the "Graphic Design Charter" of 1980, the total assumption of social responsibility on the part of the visual designer emerged even more strongly.

> We emphasise the new responsibilities of the graphic designer in the face of the profanation produced by the proliferation of communication and a parallel indifference to the culture of the image (the result of a form of industrialisation of communication processes, where the mass media and information industry, prisoners of the ideology of market orientation, produce their hot-headed information). We defend this quality

project in the field of visual communication and accept any responsibility towards the user as our own. (Baule, 2015, p. 256). In particular, information design, which can be defined as "the design of the understanding"[7], has been developing since the 1980s especially, the aim being to visualise the most complex information and data with appropriate graphical devices, in order to provide the reader with clear and suitably documented messages. In the words of Paolo Ciuccarelli:

> The use of visual languages to represent data and information is actually not a new thing […] it is a practice that has long been present in newspapers and magazines in the form commonly called infographics or information graphics […] today, open data, scrapers and leaks have triggered a gradual opening up of the frontiers of unprecedented, potential use […] last, but not least, in the production of data and information, it represents something new in the role of individuals involved (willingly or unwillingly) in increasing numbers or in increasing amounts of time (Ciuccarelli, 2014, p. 15).

In fact, communication and information design is based on the correct and effective relationship between content and the visual expression of the message sent; today, in its specific design processes, it cannot disregard a careful verification of the interest, truthfulness, social and cultural sustainability of information, which passes through the complex planning of the visual designer.

Other variations in contemporary design[8] are also increasingly confronting the ethical and political aspects of the great global issues. Moreover, the confrontation with the complex themes and strategies of sustainability has progressively broadened the scope of design research in combating environmental imbalances, ranging from the sphere of productions to their multiple connections with social phenomena and individual behaviour, to the complex cultural implications generated by possible new scenarios of transition to a virtuous socio-technical system. In this regard, it can be affirmed that today the prospect of a real condition of environmental, social and cultural sustainability is based on the truth, relevance and complexity of the information that is transmitted through the media and the data that provide the scientific basis for any action against environmental degradation.

---

7 The expression comes from Richard Saul Wurman, the founder of TED (Technology Entertainment Design).

8 Engaged design indicates an approach that directly expresses a strong social and political commitment in real life, through the design and implementation of processes that may generate a transition towards environmental, social and economic sustainability.

Participatory journalism: The fake news project

The problem of fake news is of a global nature, inextricably linked to the very structure of our social living, democratic forms of political participation and our way of producing goods and/or knowledge. If it constitutes a *wicked problem*, for which it is not possible to hypothesise a totally effective solution, it can certainly be countered in all spheres governed by formalised and organised disciplines, through systems of verification and the transparency of scientific publications.

Enormously more complex is the task of combating the approximation or manipulation of news in the open field of journalistic information, which, today, is not only expressed by major newspapers of proven professionalism; the problem arises principally in the new participative forms of communication, which are increasingly widespread and, by definition, open to contributions from their users[9].

The Fake News project[10] set itself the objective of defining and verifying an algorithm capable of identifying the degree of trustworthiness of a news-item, to be applied in the field of participative journalism, and its development in ways that are increasingly socially and culturally aware.

Development of the project presented an opportunity for a wide-ranging confrontation between different competences on the complex issues of a global dimension, posed by the pervasiveness of fake news and the possibility of identifying in advance its characteristics, purposes and dissemination strategies.

---

9 Also known as collaborative journalism or citizen journalism, participatory journalism is the term for the form of journalism that sees the active participation of readers in the management, dissemination and creation of information. Originating in the late 1990s, its spread is mainly due to mass access to new media and the Internet. The growing access to the digital network, together with the widespread accessibility of technology linked to more user-friendly tools, in fact, increasingly facilitates a proactive role of the reader, newly-skilled in the management of content, in the production of images and videos for online dissemination and sharing.

10 The OP FERS Sicily 2014–20 project, “Fake News”, proposes the implementation of RIS3 (Research and Innovation Strategies for Smart Specialisation): national or regional innovation strategies for smart, sustainable and inclusive growth in the European Union for the next decade. In the Smart specialisation strategy to which the project refers, Fake News intends to put itself forward as an experiment in the application of ICT technology to the phenomenon of disinformation, through a dialogue between the private entrepreneur (a company connected to an international participatory journalism platform) leading the project, and the University of Palermo.

Journalistic studies, sociology of cultural processes, urban planning and design were part of a wide range of disciplines that contributed to the project.

The University of Palermo Design research group developed its scientific and didactic contribution

- in the early stages of the project, by referring to the culture of communication design, which already boasted several significant links with a subject, albeit one that is prevalent in journalistic and socio-political studies.
- subsequently, with the organization of workshops and seminars involving a high number of participants, many of them students, with the aim of verifying the possible parameters of news veracity, then testing the effectiveness of the algorithm as defined for this purpose by a team of computer scientists and experts from a leading company in the field of participative journalism that coordinated the project.

Conclusions

We would like to emphasise how participation in the Fake News project has highlighted the extraordinary innovative potential of Artificial Intelligence applications, which through metrics and algorithms, but also with the invaluable contribution of the individual, may underpin truthful participatory information. What also emerges is a reflection on the likely new role of the designer and his or her increased responsibilities. In fact, whereas traditional innovation processes demanded a large amount of time on the part of designers in connecting and processing all the data and aspects of the problem at hand, in the age of artificial intelligence much of the work is done automatically by special algorithms; one can therefore reserve for the designer the most important and creative task: creating the broader scenarios of the project that indicate the direction and sense of innovation.

References

Baule, Giovanni: "La Carta del Progetto Grafico venticinque anni dopo. Una rilettura". *AIS/Design,* 6, 2015, pp. 243–259, retrieved 10.3.2022 from http://www.aisdesign.org/ser/index.php/SeR/article/view/142/130.

Buchanan, Richard: "Wicked Problems in Design Thinking". *Design Issues,* 8(2), 1992, pp. 5–21, retrieved 10.3.2022 from http://www.jstor.org/stable/1511637.

Ciuccarelli, Paolo: "Visual Data. Progetti per una forma narrativa originale". In: Colin Gianluigi / Troiano Antonio (eds.), *Le mappe del sapere. Visual* *data di arti, nuovi linguaggi, diritti. L'infografica ridisegna le conoscenze.* Rizzoli: Milano 2014, pp. 15–20.

Conklin, Jeffrey: Dialogue mapping: building shared understanding of wicked problems. Chichester, England, Wiley Publishing, 2006.

Katz, Joel: *Design Information. Human factors and common sense in information design.* John Wiley & Sons Inc.: Hoboken 2012.

Liguoro, Lorenzo: "I progetti dal basso hanno bisogno di teorie non di algoritmi". *Che fare?* 30.11.2020, retrieved 10.3.2022 from https://www.che-fare.com/progettazione-algoritmi-urise-liguoro/

Nussbaum, Martha: "Nature, Functioning and Capability: Aristotle on Political Distribution". *Oxford Studies in Ancient Philosophy* (Supplementary Volume) 6, 1988, pp. 145–84.

Nussbaum, Martha: "Human Functioning and Social Justice. In Defense of Aristotelian Essentialism". *Political Theory,* 20(2), 1992, pp. 202–246.

Nussbaum, Martha: "The Capabilities Approach and the History of Philosophy". In: Chiappero-Martinetti, Osmani, and Qizilbash (eds.), *The Cambridge Handbook of the Capability Approach*. Cambridge University Press: Cambridge 2020, pp. 13–39.

Piazza, Mario: "Pesaro. La città partecipata e la grafica condivisa". In: Rauch Andrea / Sinni Gianni (eds.), *Disegnare le città: grafica per le pubbliche istituzioni in Italia*. Lcd Edizioni: Firenze 2009, pp. 36–44.

Rittel, Horst W.J. / Webber, Melvin M.: "Dilemmas in a General Theory of Planning". *Policy Sciences,* 4, 1973, pp. 155–169, retrieved 10.3.2022 from https://www.jstor.org/action/doBasicSearch?Query=Policy+Sciences&so=rel.

Sen, Amartya: "Capability and Well-being". In: Nussbaum and Sen (eds.), *The Quality of Life*. Clarendon Press: Oxford 1993, pp. 30–53.

Sen, Amartya: *Development as Freedom*. Knopf: New York 1999.

The authors

Massimiliano Aliverti
Massimiliano is an executive leader in growth and management of online products, platforms, and businesses across multiple industries. He is specialized in general management, operations management, product development, product strategy and product marketing. Massimiliano co-founded several companies in the UK and Italy: Blasting News, Direct Intelligence and Massima Energia. He holds an MS degree in Management & Business Administration from Università Commerciale Bocconi, Milan.

Simone Avolicino
Simone Avolicino is a scholarship researcher at the Department of Computer Science of the University of Salerno (Department of Excellence). He is a member of the Human-Computer Interaction and Usability Engineering Laboratory (HCI-UsE). His research interests fall mainly in the field of human-computer interaction, user-centred design (UCD), user experience design, and deceptive UX/UI interactions.

Francesco Biondo
Francesco Biondo is associate professor at the Dipartimento Studi su Politica, Diritto e Società,University of Palermo. Phd on Human rights. Evolution, guarentee and limits (1997–2000). Research Associate at the Balliol College, Oxford, 1998–1999, and 2000–2001; Post-doctoral fellowship at the University Suor Orsola Benincasa, Napoli (2003–2004) He has been Visiting Scholar at theBalliol College (Oxford University) (1999 and 2001) and Visiting Research Fellow at theUniversity of Valencia, Departament de Filosofia, Dret i Polìtica (2010). Currently is lecturer in "Diritti Umani" at the University of Palermo. His main interests are: theory of distributive justice, civil disobedience and the relation betweenmorality and law in contemporary legal philosophy (Dworkin, Habermas and Rawls, especially),the concept of Rule of Law in contemporary legal debate, European Citizenship and the issue of democratic legitimacy of the European Union, Civic virtues and liberal perfectionism

Anna Catania
Anna Catania is an architect, Ph.D., associate professor at the University of Palermo (Italy). She carriers out research mainly in the field of Design for environmental sustainability, in the field of materials for the design and on

the relationship between design, territory and environmental sustainability. Currently, she is committed on the following research themes: the role of design in craft and in food to promote local products and social innovation; design for circular economy; the role of design in the interpretation of the materials with particular attention to the secondary raw materials and materials renewable; multifunctional and sustainable packaging.

Marcello Costa

Architect, visual designer, Ph.D. in Industrial Design. From 2011 to 2022 AIAP professional member. He specializes in visual communication projects, web and mobile interface design and development. Since 2019, he is an adjunct lecturer at the University of Palermo.

Salvatore Di Dio

Salvatore Di Dio, is an Associate Professor of Design at the University of Palermo. He is co-founder of the independent not-for-profit Design Laboratory "PUSH," based in Palermo and working at the fringe of technology, urban sustainability, and social innovation.

Cinzia Ferrara

Architect and graphic designer, Ph.D. in Industrial Design, she is a senior researcher at the Department of Architecture, University of Palermo, where she works on visual communication design. AIAP national president from 2015 to 2018 and vice president from 2009 to 2015. Design Ambassador to the World for Italian Design Day in 2017. She conducts regular teaching activities in the field of visual communication design.

Mauro Filippi

Mauro Filippi, is Ph.D. student in Design at the University of Palermo. He is co-founder of the independent not-for-profit Design Laboratory "PUSH" and a Service Design expert for the Department of Digital Transformation of the Italian Government.

Santo Giunta

Santo Giunta, architect, Ph.D., researcher in Architectural and urban composition the Department of Architecture of the University of Studies in Palermo. Regional Coordinator of New Generations IN/Arch Sicily from 2001 to 2003. In 2006 he was invited to exhibit at the 10th International Architecture Exhibition, Biennale di Venice. In 2008 he was awarded the Giovanni Battista Vaccarini Prize, by the Association of Architecture Quadrants. In 2009 it received the first prize dedicated to Emanuele Rimini from Ance Catania and is a finalist in the Gold Medal of Architecture of the Milan Triennial. In 2010 he was invited to exhibit at the 12th Exhibition International Architecture Exhibition, Biennale di Venice. She is a member of ProArch (National Scientific Society of Architectural Design) and has participated in several national and international conferences. Winner of numerous awards, he was a finalist for the Compasso d'Oro Award – ADI 2020 (category "Theoretical research, historical, critical and editorial projects") with the studio Carlo Scarpa. A [curious] shaft of light, a golden Gonfalon, the hands and a face of a woman, published by Marsilio.

Marianna Di Gregorio
Marianna Di Gregorio received a master's degree in computer science with a specialization in computational intelligence (September 2018) and a Ph.D. in computer science at the University of Salerno. Presently, she is a research fellow in the Department of Computer Science (Department of Excellence) at the University of Salerno. She is a member of the HCI- UsE (Human-Computer Interaction and Usability Engineering Lab). Her research interests fall mainly in the fields of human-computer interaction, usability engineering, accessibility and design for inclusion.

Benedetto Inzerillo
Benedetto is an architect and researcher in Industrial Design at the Department of Architecture, University of Palermo. In 1998 he gained first place in the International Competition "A Sail for Europe" with the design of a ten-metre sailing boat. From 1998 to 2003 he taught Industrial Design for the Nautical Sector in the School of Specialisation in Industrial Design at the Faculty of Architecture in Palermo. Since 2005 he has taught Production Methods and Systems in Sicily, Design for the Boating Industry, Industrial Design Laboratory, in the Degree Course in Industrial Design, Department of Architecture, University of Palermo. In 2018, he was awarded the National qualification of Associate Professor.

Laura Lorello
Full professor of Constitutional Law, University of Palermo, Ph.D. in Constitutional and European Law (1997) (Phd thesis on "The principle of legitimate expectation in European and Italian law"); Barrister since 1997 in the Palermo Bar association. Her main research interests are: Secular state and religious pluralism in multicultural societies; right to health and self-ownership; right to strike and regulation policies; constitutional guarantees of homosexual couples; parliamentarian groups and forms of government; budgetary law and forms of government.

Francesco Monterosso
Francesco is an architect, visual designer, Ph.D. and researcher in Industrial Design, he teaches at the University of Palermo. His fields of interest are new basic design, visual communications and digital technologies for cultural heritage. Owner of a visual design studio, he has worked on online and offline communication projects for public and private companies and institutions.

Guido Nicolosi
Guido is Associate professor in Sociology of culture and communication at the Department of Political and Social Sciences, University of Catania (I), where he is Chair of the MA Program in Sociology of networks, information and innovation. He teaches sociology of culture and media studies. He got his Ph.D. at the Wageningen University (NL) and is member of several research teams in national and international research programs. He has been working for the last fifteen years on the issue of "Body, Technology and Society". He is member of the scientific board of the Groupe de Travail (GT) 41 of the French Sociological Association (AFS) on "Corps, Technique et Société"; Membre Associé at the Centre d'Étude des Techniques, des Connaissances et des Pratiques (CETCOPRA). Currently he is Deputy Rector for Communication at the University of Catania.

Angelo Paura
Angelo is the global head of content for Blasting News. Angelo is also a consultant for NewsGuard and the producer of the AI and Local News newsletter with NYC Media Lab. He focuses mostly on digital cultures, new media, technology, and politics. His work has been published in Italian and international media including Politico Europe, BBC World Service, MediaShift, ProPublica, Motherboard, International Center for Journalists, The Tow-Knight Center, BuzzFeed, Il Sole 24 Ore, Il Corriere della Sera and Il Messaggero. He earned a master's degree in social journalism from Craig Newmark Graduate School of Journalism at CUNY, New York. His one-year study of ethics in VR journalism has been published in English, Chinese, Dutch, and Spanish. He lives and works between New York and Rome.

Stefano Pietropaoli
Stefano Pietropaoli is an associate professor at the University of Florence. In 2020 he obtained the national scientific entitlement as full professor of philosophy of law. He has held the position of Vocal for the Comisión General de Doctorado of the Universidad de Murcia. He is a participant of the Hans Kelsen Laboratory at the University of Salerno. He is a member of the editorial staff and web-editor

of “Jura Gentium. Journal of philosophy of international law and global politics”, and founding member of the homonymous centre. Member of the Steering Committee of the Rivista italiana di informatica e diritto, of the Scientific Committee of the Archivio storico-giuridico “Anselmo Cassani”, of the IT Lab on “Diritto, Etica, Tecnologie” of CRID – Centro di Ricerca Interdipartimentale su Discriminazioni e vulnerabilità (UNIMORE). Member of the Carl-Schmitt-Gesellschaft. He joins the Cybersecurity National Lab of CINI (National Interuniversity Consortium for Informatics).

Francesco Pira
Francesco Pira is associate professor in the sociology of cultural and communication processes at Messina University. He has written over seventy works including monographs, contributions to essay collections and academic articles. His main area of research is social network dynamics and the new social relationship models bound up with these.

Serena Del Puglia
Architect, Ph.D. in Industrial Design. Her academic interests range from lighting design to exhibition design, with special reference to the field of cultural heritage. Her teaching activities are currently centred on the design of object systems with strong narrative value. She is an adjunct lecturer and researcher at the University of Palermo.

Gevisa La Rocca
Gevisa La Rocca (Ph.D.), is associate professor of Sociology of Communication and Cultural Process at the Kore University of Enna. Her research interests cover communication research, hashtags studies, textual data analysis. On these topics, she has written several articles for national and international journals and co-edited the book *Merged Method. A Rationale for Full Integration* (with Gobo G., Fielding N., and van der Vaart W., Sage, 2021).

Marco Romano
Marco Romano is an assistant professor at the University of Salerno. Member of the HCI-UsE Lab and GIS Lab at the Department of Computer Science. He is also a senior member of the Apple Foundation Program. From 2012 to 2019, he was an assistant professor at University of Carlos III de Madrid. His research interests include HCI with a focus on the role it plays in the context of smart communities, new learning ecosystems, and ubiquitous computing. His teaching courses are about research methods for interactive product design and robotics.

He has been an invited teacher in many editions of international masters on new digital business models, augmented reality, and educational innovation.

Caterina Scaccianoce
Caterina is associate professor of Criminal Procedural Law at the University of Palermo. Qualified to hold the position of Associate Professor, she currently teaches "Criminal Execution and Penitentiary Law" and "Criminal System and Protection of Vulnerability" at the Trapani campus.
She is the author of numerous scientific publications and has participated as a speaker at various conferences. She is a member of the Italian Association of Criminal Trials Scholars. Her research interests include: the prosecutor and the principle of mandatory prosecution, the renewal of evidence on appeal, the retroactivity of the lex mitior, scientific evidence in the criminal trial.

Domenico Schillaci
Domenico Schillaci, is Ph.D. student in Engineering at the University of Palermo. He is co-founder of the independent not-for-profit Design Laboratory "PUSH" and of the start-up MUV B Corp; he is a Service Design expert for the Department of Digital Transformation of the Italian Government.

Monica Sebillo
Monica Sebillo received a B.S. degree in computer science from the University of Salerno, Italy in 1992 and the Ph.D. in Applied Math and Computer Science from the University of Naples, Federico II in 1998. From 2002 to 2016, she was an assistant professor. Currently, she is an associate professor with the Department of Computer Science at the University of Salerno. Her research interests include geographic databases and information systems, human-GIS interaction, and geographic information engineering. She is an ACM Senior Member and a Eurogi Executive Committee member. Principal investigators of research projects and agreements. Program chair of several international conferences.

Ferdinando Trapani
Ferdinando is an architect, Ph.D., associate professor in Urban Planning, Department of Architecture, University of Palermo' (Italy). Coming from professional experiences in urban planning & design, he collaborates to several EU international projects and regarding scientific cooperation co-financed by the Structural Funds of EU in the place-based policies mainly into Living Labs models for social innovation, urban regeneration, participatory spatial planning practices. He was member of the landscape quality observatory of Regional Authority and currently member of national steering committee of

SIEP-IALE, Italian Society of Landscape Ecology. From 2016 he is member of IEREK Scientific Committee organizing scientific international conferences and referred publications.

Viviana Trapani
Viviana Trapani is associate professor of Industrial Design at the University of Palermo, where she coordinates the Master's Degree Course in Design and culture of the territory. He deals with research on design for sustainable development and strategic planning for territorial contexts, based on the enhancement of cultural heritage and social innovation.

Giuliana Vitiello
Giuliana Vitiello, Ph.D., is Full Professor of Computer Science at the Department of Computer Science, University of Salerno. Since October 2021 she is President of the Study Program Board of the Bachelor's degree and of the Master's degree in Computer Science. Her research interests fall mainly in the field of human-computer interaction, including participatory design, user centred design (UCD) and their applications in software development processes, multimodal interaction, mobile health, usability evaluation, ICT for emerging regions, human-geographic information systems interaction, geovisualization, and visual query languages for geographic information systems. On those topics she has published several scientific papers in international journals, contributed volumes, and conference proceedings.