Disinformation networks: the virality of fake news, echo chambers and algorithmic manipulation

Ulises-Jesús Medina-Martín

Ulises-Jesús Medina-Martín
https://directorioexit.info/ficha7310
Universidad Complutense de Madrid
38001 Santa Cruz de Tenerife, España
ulisesrobbreport@gmail.com
ulimedin@ucm.es

Abstract

Misinformation, exacerbated by social media and the use of algorithms, has become one of the main dangers facing contemporary societies as we know them. It clearly undermines everything that makes us human. In the post-truth era, emotions displace facts and lies are more likely to go viral than the truth. This phenomenon is reinforced in digital echo chambers, where users are exposed only to content that confirms their

beliefs, strengthening polarization and reducing their critical thinking skills. Added to this is Artificial Intelligence, which achieves an experience of veracity through hyper-realistic and viral content. In the face of this, the development of critical thinking in the post-truth era is an act of resistance against noise and manipulation. Giving up on it jeopardizes the truth itself and undermines democracy and freedom.

Keywords
Post-truth; Fake news; Manipulation; Algorithms; Artificial Intelligence; Echo chambers; Virality.

1. Introduction

Disinformation is in fashion. It is not only that Oxford Dictionaries chose the expression "fake news" as Word of the Year in 2017, but that only a year earlier its close relative "post-truth" had been selected. With the advance of certain extremist ideologies and the spread of technologies that are still ahead of regulation, such as generative artificial intelligence, which is not yet updated enough to stop the tsunami of fakes, it may actually be more accurate to say that "fake news" is not just the word of 2017 but the word of the millennium.

We mentioned earlier the term "post-truth" and its link with fake news. For anyone who may have missed it, *Fundéu* defines it as a period in which truth becomes secondary or is pushed aside. The question is what has pushed truth aside in favour of falsehood. *Fundéu* collects what many experts say. The answer is emotions. What characterises this period is that people now lie quite openly, without guilt and without fear of being exposed. As we said before, this was true in 2016 and it remains true in 2025.

By coincidence or not, one of the so-called opinion leaders in 2016, and probably the main driver of fake news and of post-truth in modern, globally connected times, is still the same person today. Among many other gems, Donald Trump, president of the United States for a second term, stated in September 2025 that taking paracetamol while pregnant was linked to autism. It makes no difference that there was no scientific evidence for this and that one of the authors had already been campaigning against paracetamol in pregnant women before the study. Trump treated the information as fact and communicated it as such.

The statement naturally generated a reaction in the scientific community and in society. Even so, the actual consequences were minimal or practically non-existent, which confirms, once again, that we are still living in a post-truth moment.

Closely related to this comes another phenomenon that occurs especially in the media sphere and even more strongly on social media platforms. This is the echo chamber. If it is already dangerous for opinion leaders to lie without consequences, it is no less serious when part of the public backs them, imitates them and reproduces what they say. Social media has been the breeding ground for new opinion leaders, each with their own echo chamber. *X* (formerly *Twitter*) accounts with hundreds of thousands of followers, *Telegram* channels with tens of thousands of subscribers or *Facebook* groups whose only aim is to spread hate, circulate hoaxes and, ultimately, deepen division.

To make matters worse, social media platforms do not act as neutral spaces for understanding. The owners of the main platforms, Meta (*Facebook* and *Instagram*) and X, tend to prioritise the content that is shared the most, and that often happens to coincide with the content produced inside these echo chambers. While Jack Dorsey, the founder and former owner of *Twitter* until 2022, expelled Donald Trump from the platform for spreading falsehoods, Elon Musk, the current owner, reinstated him and even supported him financially in the election. Believing that one of the richest men in the world, who owns a platform with more than 500 million users, did not influence the latest election through the policies of his platform is, at the very least, naïve.

Assuming that algorithms, in the same way as social media, are neutral is just as naïve. One example. In July 2024 it came to light that young Germans who searched for political information on *TikTok* were intentionally and disproportionately exposed to content from Alternative für Deutschland, a far right party. Something similar happened in Romania, where the first round of the elections had to be annulled for precisely this reason. There was a disproportionate exposure to content in favour of a far right party through *TikTok*.

While this struggle with post-truth continues, artificial intelligence enters the scene. To continue the account, *Grok*, *X*'s AI, has not been free of controversy either. In May 2025, this AI repeatedly generated answers about an alleged white genocide in South Africa, even in conversations that had nothing to do with the subject. Without going too far into it, it seems reasonable to suggest that Elon Musk, the man behind this AI, a white man born in South Africa, may have had something to do with this so-called programming error in *Grok*.

The risk this manipulation poses to democratic values is evident. Yet perhaps the greatest danger lies in the fact that emotions are allowed to carry more weight than truth, than data, than analysis. It is a fact that legislation, particularly in the digital sphere, is lagging behind and is unable to stop this. It is also a fact that social media platforms hide behind this lag in order to influence elections and, more seriously still, to influence how individuals and groups think.

2. Theoretical framework

It is not far-fetched to say that fake news is as old as the world itself, and that the history of fake news runs parallel to the history of communication. After all, what was it that allowed false stories to spread even further if not the invention of the printing press.

Even so, we need to go back to 1835 to find records of the first known case of fake news. This was The Great Moon Hoax, published in the *New York Sun*, which ran six

articles about the supposed discovery of life on the moon. Later, in the twentieth century, satirical news also became common to the point that people sometimes confused it with real news. A classic example is The War of the Worlds on the radio. As the internet became part of daily life, this kind of disinformation only increased.

Many consider Frederick Burr Opper, an American cartoonist who worked mainly at the start of the twentieth century, to be the father of the expression fake news. In one of his cartoons, featuring Happy Hooligan, Opper drew what looks very much like Joseph Pulitzer, the rival of William Randolph Hearst, Opper's employer. The character is holding a newspaper that clearly shows the words "fake news".

The medium has changed. We have moved from large print runs to social media. The message, however, has remained. More than a century later, fake news still occupies a great deal of space in news agendas and in our day to day lives. **Posetti** and **Matthews** (2019) argue that the arrival of the internet and then social media multiplied the risks linked to the distribution of disinformation and propaganda. Fraudulent content is now shared with ease. We live in a world in which propaganda has been computerised, in which there are fake online identities created or protected by states, troll armies and technologies that can imitate trustworthy audio and video. In a context where trust is polarised according to the kind of news people agree with, many users feel entitled to choose or even create their own truths. When these factors come together, they pose an unprecedented threat that can drown journalism and contaminate it to the point that it becomes indistinguishable from fraudulent information.

As **Vosoughi**, **Roy** and **Aral** (2018) also point out, cited in **Rodríguez-Fernández** (2019), social media platforms are the new tools for spreading these kinds of lies because they offer high levels of reach and credibility. False stories are 70 per cent more likely to be shared and they travel further, faster and more widely than the truth in every category of information. To this we can add the latest *Eurobarometer* data on social media (2025). Two thirds of those surveyed, 66 per cent, felt they had been exposed to disinformation and fake news at least a few times in the previous seven days. Even so, only six in ten felt confident about being able to recognise it.

The situation is especially striking when it is the media themselves who spread disinformation without realising it. *Telecinco*, for example, broadcast a video in its news bulletin on 10 October in which a duck was supposedly stealing a loaf of bread. The video was not only fake. It had been generated with artificial intelligence. If communication professionals cannot always distinguish an AI generated video from a real one, it is hard to expect that someone without the same training will be able to do so.

It is true that artificial intelligence has changed almost everything. It is true that it allows us to create texts, images and videos faster. In the middle of all this activity we need to ask why. Do we really need to invest time and resources in creating a video of a duck stealing bread? What exactly are we hoping to achieve?

Earlier we spoke about the danger of being guided by emotions rather than data, facts and truth. Yet there is also a second risk linked to AI. Its most serious aspect is not just that it may eventually become indistinguishable from reality, although that is a concern. The real problem is that it is lulling us into not thinking. Creating and consuming content without even a minimal critical look is the greatest risk. In the end it attacks our very existence. I think, therefore I am. If I do not think, the foundation begins to crumble.

> Post-truth then becomes the dominant story of this new ecosystem. What matters is not so much what is accurate, but what is convincing or emotionally satisfying

3. Development

The danger of not thinking does not appear overnight. It slips in. It arrives disguised as comfort, as the apparent neutrality of the algorithm and as the promise of making everything simpler. Thinking takes time and, in the attention economy, time has become an unproductive luxury. Allowing others, whether machines, algorithms, trends or so called opinion leaders, to think for us is sometimes described as efficiency, although it is actually a rather sophisticated form of surrender.

In this context, artificial intelligence appears as an ambiguous ally. On the one hand, it broadens access to knowledge, translates, summarises and predicts. On the other, it perfects the illusion of truth. The more plausible an AI generated image, quote or headline appears, the harder it becomes to hold on to doubt. In connection with this, two thirds of users already admit that they often see AI generated content, 65.4 per cent, although fewer than a quarter, 24.9 per cent, are able to tell whether what they are seeing is real, according to the report *Marcas bajo la tiranía del algoritmo* from *Apple Tree* (2025). The logical consequence of this, in addition to the obvious expansion of fake news, is a loss of cognitive autonomy. Believing ceases to be a rational decision and becomes an automatic reflex.

This phenomenon is amplified in echo chambers, where recommendation algorithms act as invisible architects of perception. Content stops being relevant from an informational perspective and is offered instead according to how well it confirms something we already thought. **Eli Pariser** explained this over a decade ago with the concept of the filter bubble (2011). The more personalised the digital environment becomes, the narrower our view of the world. Today that bubble does not just filter information. It shapes emotions, manufactures partial consensus and reinforces fragile identities. Within that space, to think critically is almost an act of resistance.

Post-truth then becomes the dominant story of this new ecosystem. What matters is not so much what is accurate, but what is convincing or emotionally satisfying. According to *Reuters* (2025), 40 per cent of young people in Spain between 18 and 24 get most of their news from social media. At the same time, interest in news has fallen by 34 points since 2015. In practice this means that young people trust an algorithm, which we have already said is not neutral, more than a traditional news outlet. This epistemic shift turns truth into a consumer product, something that can be adapted to public taste and shaped by political or economic interests.

Not thinking, in the era of post-truth, is very similar to ceasing to exist as a deliberative subject. When we hand over our ability to judge to a machine or to the group, we lose information, but, more importantly, we lose part of our identity and everything that makes us human. That is where the ultimate risk lies. A public that does not think is easier to manipulate and, even worse, easier to replace. If we accept that thinking is at the core of our identity, giving it up is the same as giving up authorship over our own story.

Thinking, persisting in doubt, pausing, asking awkward questions, therefore becomes a political and ethical act in the face of digital noise. Only by recovering that capacity to think can we confront the mirage of algorithmic truth and resist the emotional flattening that defines the post-truth era.

4. Thought lasts as long as a *TikTok* video

Thinking gets broken up between notifications, between the 15 seconds of a *TikTok* video and the headline that replaces the article. When everything demands our attention, nothing quite receives it. Social media platforms compete for our time, but they also compete for our very limited capacity to concentrate, the scarce resource on which intellectual autonomy depends.

Disinformation is therefore accompanied by noise. According to an analysis by *Neuromedia*, quoted in *La Razón* (2024), an average user receives more than 6,000 informational impacts every day, between adverts, messages and posts. Faced with such saturation and overload, the brain turns to cognitive shortcuts that make it trust what is familiar, emotional and immediate. This is where confirmation bias, the illusion of consensus and faith in the algorithm take root. Critical thinking requires time, but it also requires silence. In the era of post-truth, silence is the scarcest good.

The real competition is no longer about truth. It is about the ability to retain users for one second longer. In that context, critical thinking is not profitable. Platforms reward virality, not veracity. The algorithm rewards reaction, not reflection. The economic logic of the click discourages something that is profoundly human, which is the ability to doubt.

The social consequences of this dynamic are twofold. On the one hand, the citizen becomes a consumer of prefabricated truths. On the other, the very idea of truth is trivialised to the point that it no longer matters whether something is accurate, it only matters that it works within the emotional ecosystem of each group. We know that four in every ten Spaniards now avoid the news, according to the *Digital News Report* 2025, quoted by *RTVE* (2025). This trend is especially strong among young people and those at the ideological extremes. This decline in trust in truth leads to mistrust in the media, but it also leads to something even more serious, which is indifference to truth.

This trivialisation of critical thinking produces an even more disturbing side effect, namely the aestheticisation of lies. Fake news are now designed with the same care as an advertising campaign. Colour palettes, typefaces, publication times and dominant emotions are all chosen. Falsehood becomes a desirable, easy to consume product, while truth appears arduous, uncomfortable and not very shareable.

> Fake news are now designed with the same care as an advertising campaign. Colour palettes, typefaces, publication times and dominant emotions are all chosen. Falsehood becomes a desirable, easy to consume product, while truth appears arduous, uncomfortable and not very shareable

Thinking has become an act of resistance against what is immediate, viral and false. It involves slowing down the rhythm of the network, reading more slowly, checking, interrogating and even questioning what matches our own beliefs. It is, in short, about recovering what is human in us, the dignity of human thought. To give up thinking is to give up truth, but also to give up the very possibility of being free.

5. Digital dopamine

The danger of post-truth partly lies in the belief that we are still thinking. The constant micro interactions of the digital world, which we then transfer to offline life, imitate the gesture of thinking but reduce it to automatic expression. We have confused opinion with judgement and exposure with reflection. As *Umberto Eco* said in 2015, social media has given the right to speak to legions of fools. An overabundance of voices does not necessarily increase collective intelligence. It dissolves it in an ocean of digital noise.

We now know that each notification or interaction on social media activates the same neural circuits associated with immediate pleasure. Put another way, the simple sound of a notification on a mobile phone can trigger in the brain a reaction very similar to the one caused by drugs or gambling, which is the release of dopamine, the neurotransmitter associated with pleasure and motivation. This culture of endless scrolling is a sort of drug that slowly makes it harder to hold attention, that makes waiting uncomfortable and that punishes not knowing.

If in the twentieth century propaganda was what shaped the masses, in the twenty first it is algorithms that mould individual consciousness by directing our attention wherever they want it. Stopping thinking is, in the end, a logical consequence of a system that finds in mental passivity its main source of profit.

In the middle of this saturation, artificial intelligence finds the perfect breeding ground. If people are not thinking, why should AI not do it for them? Deepfakes, generative AI and hyperrealistic images of ducks stealing bread in a shop are active agents in the construction of a new reality that is not committed to truth in the strict sense. It is therefore hardly surprising that 62 per cent of influencers do not verify the information they share beforehand, according to *UNESCO* (2025).

The result is a society that is hyperconnected yet intellectually isolated, where each person lives inside their own ecosystem of certainties. **Hannah Arendt** (1971) said that thinking is a dialogue with oneself and that it is a solitary activity. Today, that inner dialogue is interrupted by a constant flow of external stimuli. We have never had as much information available as we do in the twenty-first century. At the same time, we have never had so much disinformation. We are informed, but we do not understand. We have opinions, but we do not deliberate. We exist, but we barely think.

> Disinformation behaves like a virus. It spreads more easily when the organism is weak. When the organism is society and its immune system is critical thinking, pro-tection becomes more necessary than ever

6. Conclusions

Disinformation behaves like a virus. It spreads more easily when the organism is weak. When the organism is society and its immune system is critical thinking, protection becomes more necessary than ever. When the algorithm imposes what we want to see rather than what we ought to know, the striking fact is that we have learnt to prefer it. We would rather give up health than give up the little burst of dopamine that disinformation brings and that keeps us addicted to endless scrolling.

Reality, in this post-truth that we do not seem to be leaving, is competing with a market saturated with fictions that are sold to us as certainties. It is worth asking whether it is our task as citizens to distinguish between what is false and what is true or whether this is something that should be left only to communication professionals and opinion leaders. It is also worth asking whether we can continue to exist without thinking for ourselves, at the cost of losing everything that makes us human.
Even so, artificial intelligence and recommendation algorithms are not the enemy. The enemy may well be our willingness to hand over, without resistance, the sovereignty of our thought to their supposed neutrality. Arguing that machines should think for us is probably the most dangerous position of all. It implies giving up reflection and voluntarily handing over our judgement. In practice, we have delegated our freedom in exchange for cognitive comfort.

Thinking, like democracy, needs friction. It needs disagreement, slowness and even error. Digital platforms were not designed for that. They were designed to turn debates into choreographies that are perhaps too perfect, in which each person simply moves to the rhythm of their own echo. Without friction there is no thinking. Without thinking there is no democracy. Without democracy truth loses its meaning.

Recovering something as human as the habit of thinking requires rebuilding the foundations of the era of (dis)information from below. It calls for emotional literacy at a social level. It calls for distrust of instant certainty, for the ability to bear doubt and for resisting the dopamine of the click. Thinking is the minimum condition for our existence and our freedom. If we give it up, we are giving up an essential part of our identity.

To think is to challenge power, but it is also to challenge noise. It means refusing to fall for the pleasant, gratifying sound of the mobile when a notification comes in. It means accepting that not everything that shines on screen is knowledge. It means understanding that truth, like thinking, requires effort, time and responsibility.
To exist, in short, is to think.

If we do not think, we do not exist.

7. References

Apple Tree Communications (2025). *Marcas bajo la tiranía del algoritmo*. 2ª edición. Apple Tree Agency.
https://appletree.agency/newthinking/marcas-era-del-algoritmo

Arendt, H. (1971). *La vida del espíritu*. Taurus.

Eco, U. (2015, junio 11). Las redes sociales han dado el derecho de hablar a legiones de idiotas. *La Stampa* [recogido en *El Observador*].
https://revistaelobservador.com/sociedad/comunicacion/10214-el-filosofo-umberto-eco-carga-contra-las-redes-sociales-dan-el-derecho-de-hablar-a-legiones-de-idiotas-que-primero-hablaban-solo-en-el-bar-despues-de-un-vaso-de-vino-sin-danar-a-la-comunidad

European Commission (2025). *Eurobarometer survey 3592: encuesta de redes sociales 2025*.
https://europa.eu/eurobarometer/surveys/detail/3592

Fundéu (2020). *Posverdad y fake news: cuando la emoción desplaza a la verdad*. Fundéu.

Molina, J. (2024, enero 25). Qué tengo que saber de la publicidad en medios para que no me engañen. La Razón.
https://www.larazon.es/tecnologia/20220125/shj3y7r4r5hadoodgcg2kxlpx4.html

New York Sun (1835). *The Great Moon Hoax* [Serie de artículos].

Newman, N.; **Fletcher, R.**; **Robertson, C. T.**; **Ross Arguedas, A.**; **Nielsen, R. K.** (2025, June 17). *Digital News Report 2025*. Reuters Institute for the Study of Journalism.
https://reutersinstitute.politics.ox.ac.uk/digital-news-report/2025

Pariser, E. (2012). *The filter bubble: What the internet is hiding from you*. Penguin Press. 294 pp.
https://www.google.es/books/edition/The_Filter_Bubble/Qn2ZnjzCE3gC?hl=es

Posetti, J.; **Matthews, A.** (2018). *Una breve guía de la historia de las 'noticias falsas' y la desinformación: un módulo de aprendizaje para periodistas y educadores de periodismo.*
https://www.icfj.org/sites/default/files/2019-06/HistoryPropaganda_Espanol2_final_5.pdf

Rodríguez-Fernández, L. (2019). Redes sociales y desinformación en la era digital. *Revista Latina de Comunicación Social, 74*, pp. 1714-1728.
https://doi.org/10.4185/RLCS-2019-1406

RTVE Noticias (2025, junio 17). Digital News Report 2025. Más de la mitad de los españoles cree que los políticos son una "amenaza desinformativa".
https://www.rtve.es/noticias/20250617/mas-mitad-espanoles-cree-politicos-son-amenaza-desinformativa/16627886.shtml

Unesco (2025). *Behind The Screens. Insights from Digital Content Creators. Understanding their Intentions, Practices and Challenges*
https://unesdoc.unesco.org/ark:/48223/pf0000392006

Vosoughi, S.; **Roy, D.**; **Aral, S.** (2018). The spread of true and false news online. *Science,* 359(6380), pp. 1146–1151.
https://doi.org/10.1126/science.aap9559