



# Algospeak and Digital Culture: Navigating Social Media Challenges

Hishamudin Isam

Universiti Utara Malaysia, Kedah, Malaysia

din@uum.edu.my

**Abstract.** The phenomenon of algospeak exemplifies the dynamic adaptation of social media users to the stringent regulations of digital platforms. Algospeak refers to the use of codes and symbols to circumvent content-filtering algorithms. Initial observations indicate that its emergence is primarily driven by the rigorous censorship of various social media platforms, prompting users to communicate creatively without being blocked. A prominent example of algospeak was observed during the Palestine vs. Israel conflict, where users employed various codes and symbols to convey information and opinions without detection by censorship algorithms. While algospeak facilitates free and innovative communication, it also poses risks of misinformation and alienation of users who do not understand these codes. Thus, the proliferation of algospeak requires a balanced approach between online safety and freedom of speech. This necessitates cooperation between social media platforms and authorities, as well as education and awareness among users about the risks and responsibilities of using algospeak. Continuous research and the development of technology capable of detecting and understanding algospeak without stifling user creativity are crucial to overcoming these challenges. Awareness, education, cooperation, and research are key to ensuring the safe and responsible use of social media.

**Keywords:** algospeak, algorithms, social media.

## 1 Introduction

In an increasingly sophisticated digital era, social media has become a primary platform for communication and information dissemination. Platforms such as Facebook, Twitter, Instagram, and TikTok not only connect individuals from diverse backgrounds but also shape new cultures in how we interact and share information. One of the latest phenomena gaining attention is algospeak. Algospeak refers to the use of modified language or terms to avoid detection by social media platform algorithms [1].

The phenomenon of algospeak is intriguing as it reflects how social media users adapt to the rules and limitations set by digital platforms. According to Tufekci, savvy social media users employ their creativity to modify language and symbols, ensuring their messages can be conveyed without detection by stringent censorship algorithms [2]. This highlights the interplay between technology and users in a dynamic digital ecosystem.

Furthermore, van Dijck, Poell, and de Waal suggest that algospeak also illustrates innovation in language use to maintain freedom of expression [3]. Users create new language codes, use alternative spellings, and emojis to communicate their messages. This not only allows them to circumvent algorithmic restrictions but also fosters a new form of creative and effective communication. Therefore, this paper will delve deeply into the concept of algospeak, the factors behind its emergence, its impact, and the challenges faced in navigating the culture of algospeak. By understanding this phenomenon, we can see how social media users continually find ways to overcome technological limitations and maintain freedom of expression in the digital era [4].

## **2 The Concept of Algospeak**

Algospeak is a combination of the word "algorithm" and "speak," referring to a mode of communication designed to evade detection by content-filtering algorithms on social media platforms [1]. This concept refers to a set of coded words or phrases used by social media users to create a safe lexicon, aimed at preventing content moderation systems from blocking or downgrading their content. Algorithms, on the other hand, are typically used to detect and block content that violates certain policies, such as violence, hate speech, or inappropriate content. However, savvy social media users have found ways to circumvent these restrictions by modifying the language they use. For example, they might use different spellings, emojis, or specific codes understood only by certain groups.

The use of algospeak reflects how social media users understand and adapt to the technologies that monitor them. According to Tufekci, it is a form of communication that evolves to overcome the limitations imposed by technology [2]. In this context, algospeak involves not only altering words but also using symbols and signs to convey messages. This demonstrates the creativity of users in finding ways to communicate without breaching stringent rules. In the digital ecosystem, algospeak functions as a dynamic adaptation to existing rules and systems. Users modify language and symbols to ensure their messages are not filtered by algorithms. Discussing this, van Dijck, Poell, and de Waal state that this not only allows them to maintain freedom of speech but also enhances their ability to communicate effectively in an increasingly controlled environment [3]. This phenomenon illustrates the interaction between technology and human creativity in the modern digital world.

## **3 Factors Contributing to the Emergence of Algospeak**

Several factors drive the emergence of algospeak. These include:

### **3.1 Stringent Censorship Policies**

Many social media platforms enforce strict content censorship policies to ensure user safety and decency. These platforms utilize algorithms that can detect, and block words or phrases deemed inappropriate, including content related to violence, hate speech, or

indecenty [5]. While these policies aim to protect users from harmful or inappropriate content, they also drive users to seek alternative ways to communicate their messages. Roberts notes that savvy social media users began modifying their language to evade detection by algorithms [6]. Techniques such as using alternative spellings, emojis, or specific codes understood only by certain groups have become increasingly common. This is one way in which algospeak has evolved in response to stringent algorithmic censorship.

Cohen et al. observe that the use of algospeak reflects how social media users understand and adapt to the technologies that monitor them [7]. It involves not only the alteration of words but also the use of symbols and signs to convey messages. In this context, algospeak is a form of dynamic adaptation to the existing rules and systems within the digital ecosystem. The creativity of users in overcoming technological limitations underscores the importance of freedom of expression in the digital age [2]. This phenomenon illustrates that users are not only becoming more adept at protecting their privacy and freedom of speech but also increasingly creative in adapting to existing technologies. Algospeak, as a tool to circumvent censorship, demonstrates the evolution of communication methods in response to the challenges posed by modern technology. Ngai et al. suggest that this is an example of how technology and human creativity interact in the modern digital world [8].

### 3.2 User Creativity

Social media users often seek ways to overcome the limitations and restrictions imposed by digital platforms. Algospeak is one of the creative methods they use to ensure their messages reach their audience without being blocked. This creativity is reflected in how users modify language and symbols to avoid detection by censorship algorithms. Roberts adds that users employ techniques such as altering spellings, using emojis, or specific codes understood only by certain groups [6]. These actions demonstrate a high level of creativity and awareness among social media users in their efforts to protect their freedom of speech. Algospeak also involves the use of symbols and signs as part of their strategy to communicate more freely and effectively in an increasingly controlled digital environment.

Moreover, the creativity of users in creating algospeak reflects how they adapt to the technologies that monitor them. This not only shows language adaptation but also innovation in communication methods [9]. This phenomenon illustrates the collective wisdom of social media users in navigating the rules and limitations set by censorship algorithms. Gorwa and Guilbeault argue that, overall, algospeak as a tool to circumvent censorship demonstrates the evolution of communication methods in response to the challenges of modern technology [10]. It also exemplifies how technology and human creativity interact in the modern digital world, ensuring freedom of speech is preserved even in a restricted environment.

### 3.3 Awareness of Privacy

In the advancing digital era, awareness of online privacy has increased dramatically. Users are becoming more aware of the risks involved when sharing personal information openly on digital platforms. According to a study by Bucher, the use of algospeak is one way users protect their identities in the digital world [11]. Algospeak, which involves deliberately restructuring or modifying language to avoid detection by algorithms, is gaining traction among users concerned about privacy. Gehl states that such methods of disguising words enable users to communicate safely without revealing their true identities, thereby reducing the risk of detection by malicious parties [12].

Privacy has become a major issue in this digital age, with many entities attempting to obtain users' personal information for various purposes. In response to this threat, users are becoming more adept at finding ways to protect their personal information from detection and misuse. Marwick and Boyd note that this increased awareness has led to behavioral changes among internet users, including the use of techniques like algospeak [13]. Users are also becoming more skilled in using methods and techniques that help them avoid detection and misuse of their personal data. A study by Tufekci shows that privacy-conscious users tend to use various forms of technology to protect their data, including VPNs, end-to-end encryption, and word disguises like algospeak [14].

### 3.4 Technological Advancements

The advancement of increasingly sophisticated algorithmic technology has led to the increased use of algospeak among online users. The algorithms used to detect and filter content have become more complex and efficient. According to Gillespie, algorithmic technology is now capable of identifying and filtering content with high efficiency, forcing users to find new ways to circumvent these restrictions [15]. The technology used to detect and filter online content is constantly being updated. Filtering algorithms now employ various techniques such as machine learning and big data analysis to identify content that violates policies. As Noble explains, this technology not only focuses on textual content but also on images, videos, and audio, making it more challenging for users to evade detection [16].

Users must constantly adapt to changes in filtering technology. With each advancement in detection algorithms, users find new ways to avoid detection. Crawford and Paglen state that users, especially the younger generation, are becoming increasingly creative in using algospeak and other techniques to protect their privacy and convey messages without being detected by algorithms [17]. The advancement of algorithmic technology affects not only individual users but also social media platforms and technology companies. They must continuously update their detection systems to address the new methods users employ to evade detection. Zuboff suggests that this dynamic creates an ongoing cat-and-mouse game between users and digital platforms, with both parties continually seeking ways to outmaneuver each other [18].

## 4 Examples of Algospeak Usage: The Palestine vs. Israel Conflict




The conflict between Palestine and Israel is a prime example of a situation that frequently incites controversy on social media. Open discussions about this issue can potentially lead to violations of social media communication rules, including the spread of hate speech and violence, breaches of laws and regulations concerning the dissemination of sensitive information, incitement related to political and ethnic conflicts, the spread of cultural tensions, and the risk of disseminating misinformation or propaganda. Consequently, social media platforms such as Facebook, Instagram, Twitter, and TikTok often restrict the use of sensitive terms related to the Palestine-Israel conflict, such as "Palestine" and "Israel," based on robust content policy reasons.

This situation compels users to find new ways to circumvent these restrictions, and one of the methods employed is the use of algospeak. This is due to the tendency of social media users to express global solidarity with oppressed communities, as Davis articulates [19]. He argues that international solidarity is crucial in the fight for social justice and human rights worldwide. Moreover, according to a report by Human Rights Watch, there is strong evidence that Israel's actions in Palestinian territories can be categorized as apartheid and systematic oppression against Palestinians [20].



As a workaround, social media users adopt algospeak methods, which are designed to create a safe lexicon that prevents content moderation systems from blocking or downgrading their posts. Although Gillespie points out that current algorithmic technology is highly efficient at identifying and filtering content, it is clear that this technology has not yet fully curbed the widespread use of algospeak by users [15]. Evidence from searches for algospeak techniques on various social media platforms reveals a wide array of disguised terms for "Palestine" and "Israel." Below are some examples of algospeak for these terms found on social media.

**Table 1.** Algospeak for Israel.

<b>Bil</b>	<b>Algospeak</b>	<b>Example from Social Media</b>
1.	israhell	Did she just call it israhell in the ICJ
2.	Israeli	"Look! Why Israeli kill innocent Palestinians"
3.	Israℓl	"Plis apa apa jangan asal nuduh atau ngecap kalau mereka pro Israℓl"
4.	Isra*li	Me when Isra*li forces stormed in Al-Aqsa compound
5.	Isra-hell	This fat ugly Kr**t bastard needs to shut the fuck up and tell his country to stop supporting war crimes by Isra-hell instead.
6.	Is@el	Y'all should be boycotting the Olympics btw since they're still letting Is@el compete

7.	Isr#el	Isr#el's lobby in the US complained demanding the Japanese government to denounce journalist Miki Otaka, who questioned Isr#el's rape claims that have no evidence
8.	Isr@eli	hi can you guys block this account. they're an isr@eli and a Zionist so please block them so their videos won't come on your fyp :)
9.	Isr*eli	The guy was trying to climb on the stage with an Isr*eli flag. Hope the lights are ok.
10.	Isra*1	Isra*1 bombed a WATER DISTRIBUTION point killing and wounding multiple Palestinian people near al-shemaa mosque in al-zaytun.
11.	Israèl	Pria ini di tanya surah Al-Fatihah sama polisi Israèl
12.	Isr4*1	"you know Isr4*1" "yes I know"
13.	Iar3w3l	"you iar3w3l citizen?"
14.	Isralol	"where you from?" "isralol"
15.	Israelis	Just thinking about how Israelis have been mocking the Palestinian genocide for 6 months
16.	Isr*.el	The real face of Isr*.el
17.	Isr**el	"Isr**el should be banned from the Olympics" Agree?
18.	Israel!	Enter... Israel! Hanna Minenko and Yakov Toumarkin carry the flag of Israel!
19.	Isr.aeli	Sadness and tears dominate the atmosphere during the funeral of the martyr Muhammad Maher Marei from Jenin refugee camp, who died after being shot by the Isr.aeli occupation.
20.		They were all eliminated  

**Table 2.** Algospeak for Palestine.

Bil	Algospeak	Contoh Ayat Dari Media Sosial
1.	P@lestine	This 4th of July, advocate for P@lestine.
2.	PΔLST1N3	If you mute PΔlst1n3, you are a coward.
3.		I stand with H u m a n i t y 
4.	P@l3st1n3	From the river to the sea P@l3st1n3 will be free!!!

5. P4l3st1n3 Please don't stay silent about **P4l3st1n3!!!**
  6. P@lest1n3 I stand with **P@lest1n3**.
  7. P@l3stin3 I'm posting support for **P@l3stin3**
  8. P@1eŠtiÑe The work was created using obscure Mac software/hardware and proceeds from the sale will go to aid charities in **P@1eŠtiÑe**.
  9. Pal3st1n3 I'm doing my best to support **Pal3st1n3** and spread the words but I'm not sure what's happening anymore.
  10. P@1estine I wear the keffiyeh in memory of my great-grandfather, who was killed in the first Naqba, and in solidarity with the people of **P@1estine**.
  11. P@l3stine Kamil was a Sunni Muslim religious leader in **P@l3stine** and member of the al-Husayni family.
  12. P4lestine Don't be cowards and suppress posts about **P4lestine**.
  13. P@l3st1n3 Barbed wires, huge empires — all shall witness their demise, from Balochistan to **P@l3st1n3!**
  14. P4l3stine Remember to continue supporting **P4l3stine** even after the strike!
  15. Pal€stin€ From todays all out for **Pal€stin€** protest.
  16. P4l3st1ne Do not stop talking about **P4l3st1ne**.
  17. P@l3st!ne Keep screaming for a fr'33 **P@l3st!ne!!!!**
  18. P@l3st1n3! Scream 4 **P@l3st1n3**.
  19. P.a.l.e.s.t.i.n.e Send help and free **P.a.l.e.s.t.i.n.e**.
  20. Filistin **Filistin** will be free.
- 

## 5. Effects of the Spread of Algospeak

The proliferation of algospeak has various implications for social media users and the broader society. These include:

### 5.1 Challenges in Monitoring

The use of algospeak presents significant challenges for authorities and social media platforms in their efforts to monitor and control potentially harmful content. Algospeak, which involves the use of modified language or codes to evade detection by algorithms,

complicates the monitoring process. One major consequence is the increased dissemination of false or harmful information. By utilizing algospeak, users can spread misinformation or propaganda more easily, as such content often bypasses standard filtering systems. Noble asserts that algospeak can be used to conceal malicious information, facilitating the spread of conspiracy theories and misleading content [16].

The primary challenge for social media platforms is to continuously update their monitoring algorithms to identify and filter algospeak. Crawford and Paglen emphasize that despite advancements in machine learning and artificial intelligence (AI), users are becoming more inventive in evading detection, making online content monitoring an ongoing challenge [17]. The inability to effectively monitor content has serious implications, as it can lead to an increase in the dissemination of harmful and dangerous material. Zuboff suggests that the failure to control the spread of false or harmful information can undermine online safety and exacerbate social issues such as violence and public distrust in the media [18].

## 5.2 Security Issues

While algospeak can be used for legitimate purposes such as protecting privacy, it also opens the door to misuse by malicious actors. Algospeak refers to the deliberate modification of language or codes to avoid detection by content-filtering algorithms. Citron notes that the use of algospeak complicates efforts by authorities and social media platforms to control the spread of potentially harmful content [21]. One key challenge is the increased dissemination of false information, hate speech, or inappropriate content. Malicious users can employ algospeak to disguise content that violates platform rules. Marwick and Lewis highlight that algospeak can be used to promote extremist ideologies, spread fake news, and incite hatred among users [22].

Social media platforms and authorities face significant challenges in controlling the spread of algospeak content. Existing filtering technologies are often insufficiently sophisticated to detect the disguised language used in algospeak, allowing harmful content to slip through. Although machine learning algorithms are advancing, users are becoming increasingly creative in modifying their language to evade detection [15]. The misuse of algospeak has serious implications, as it can threaten online security and exacerbate social issues such as violence and instability. Controlling the use of algospeak for disseminating illegal or harmful content requires proactive measures from social media platforms, including continuous updates to their monitoring systems. Zuboff recommends a comprehensive approach to controlling algospeak, including user education and enhancements in monitoring technology [23].

## 5.3 Changes in Communication Dynamics

The use of codes and symbols to convey messages, as seen in algospeak, is increasingly influencing online communication. This shift introduces new dynamics in digital communication, where messages are conveyed covertly through codes and symbols understood only by specific groups. According to Gillespie, this creates a unique form of communication in which only those who understand algospeak can participate [24]. A



primary consequence of the spread of algospeak is the creation of exclusivity in online communication. Previously open communication channels are now becoming hidden and secretive, with only those proficient in algospeak able to understand the messages. This can cause users who do not understand these codes to feel isolated and less engaged in online conversations [25].

Furthermore, algospeak can affect the authenticity and legitimacy of information shared online. The use of complex codes and symbols makes it difficult to distinguish between authentic and false information [1]. This can lead to the spread of inaccurate information or misunderstandings among users. In the long term, the spread of algospeak can impact how we perceive and understand online communication. Marwick and Boyd argue that this new dynamic requires adjustments in how we interact and interpret conveyed messages [13]. It also necessitates greater awareness among users about how their communication may be interpreted by others.

#### **5.4 Challenges in Education and Awareness**

The spread of algospeak presents significant challenges in educating users about the risks and responsibilities associated with using such language. Education on algospeak needs to emphasize ethics and the potential negative impacts of using language that is not easily understood by the general public [26]. The primary challenge is increasing user awareness about the ethics of using algospeak. Floridi et al. argue that this awareness is crucial to ensure responsible use of coded language, avoiding misuse and the spread of misinformation [27]. Social media algorithms are often not fully understood by users, leading to confusion and potential misinterpretations [28].

Moreover, educators need to emphasize the importance of distinguishing between authentic and false information. The complex use of algospeak can blur the line between fact and fiction, posing challenges in evaluating the credibility of received information. Buhmann, Paßmann, and Fieseler contend that effective education on algorithms and digital ethics can help users make better and more responsible decisions when using digital platforms [29].

### **6. Challenges in Addressing the Culture of Algospeak**

Confronting the culture of algospeak presents several challenges that need to be addressed by social media platforms, authorities, and users themselves. These challenges include:

#### **6.1 Algorithm Capabilities**

Algorithms must be continuously enhanced to understand and identify algospeak without stifling user creativity. It is crucial for algorithms to recognize and interpret the use of modified codes and symbols without disrupting the flow of creative communication [30]. Algorithms that can understand this context will enable more effective control of content without compromising creativity and freedom of expression. According to Gligorea et al., advancements in natural language processing (NLP) technology should

play a significant role in understanding algospeak [31]. This technology must be constantly updated to keep up with the evolving language and symbols. Advanced NLP algorithms can more accurately identify the meaning behind modified language use, helping maintain the integrity of online communication.

Furthermore, Mittelstadt et al. argue that algorithms must be equipped with the ability to understand context when algospeak is used [26]. Understanding context is key to ensuring that the use of coded language is not misinterpreted or misused. This includes the ability to identify the intent and meaning behind the use of codes, ensuring that communication is lawful and ethical. The primary challenge in addressing the culture of algospeak is ensuring that algorithms can understand and identify the use of codes and symbols without stifling user creativity. This requires more advanced and continually updated technology to ensure responsible and ethical use of this language.

## **6.2 Balancing Security with Freedom**

Striking a balance between ensuring online safety and preserving freedom of speech is a significant challenge in the digital era. Social media platforms need to find effective ways to identify harmful content without blocking legitimate content. This requires a balanced approach where the technology used can distinguish between lawful and unlawful content [32]. Social media platforms like Facebook, Twitter, and YouTube are often under pressure to regulate potentially harmful content such as misinformation and hate speech. However, the Cambridge Law Journal emphasizes that content moderation must be carried out carefully to avoid infringing on users' freedom of speech [33]. According to human rights principles, the right to freedom of expression must be protected, but with equal consideration for protection against harmful content.

This balanced approach also requires more advanced algorithms and technology to assess the context and intent behind posted content. Algorithms that rely solely on keyword recognition may be insufficient as they cannot understand the broader context and nuances of language [30]. Instead, algorithms need to be equipped with deeper contextual learning capabilities to make accurate decisions about which content to block. Therefore, another challenge in dealing with the culture of algospeak is ensuring online safety while preserving freedom of speech. UNESCO shares this view, stating that this requires advanced technology and a balanced approach to distinguish between harmful and legitimate content, ensuring that freedom of speech is not compromised in efforts to maintain online safety [32].

## **6.3 Collaboration Between Platforms and Authorities**

Collaboration between social media platforms and authorities is crucial to overcoming the challenges posed by algospeak. This collaboration involves sharing information and technology to identify and filter inappropriate content. Through such cooperation, both parties can work together to create more effective mechanisms for handling harmful content without suppressing freedom of speech [34]. For example, during the COVID-19 pandemic, social media platforms like Facebook, YouTube, and Twitter collaborated with health authorities to reduce the spread of misinformation and disinformation.

Warnke et al. highlight how this strategic collaboration can help in more effectively regulating content [35]. Through these efforts, both parties can share technology and data to detect and eliminate harmful information.

Additionally, this collaboration should encompass education and awareness among users about the risks and responsibilities associated with using algospeak. Educating users on how to responsibly use algospeak can reduce the risk of misuse. This also helps ensure that users understand the ethical and social implications of using coded language in online communication [32]. This cooperation is essential not only for identifying and filtering inappropriate content but also for educating users about responsible and safe use of algospeak [32] [34] [35].

## 6.4 Research and Development

Continuous research on algospeak and its effects is essential to gain a deeper understanding of this phenomenon. Algospeak, with all its complexities, is becoming a major concern among researchers and policymakers. Floridi et al. assert that understanding how algospeak functions and its impact on communication is a critical first step in addressing the challenges it presents [36]. Important areas of research include studies on how algospeak is used by various online communities and how it can influence social dynamics and the spread of misinformation.

Additionally, developing technology that can detect and understand algospeak without hindering user creativity is crucial. Technologies such as natural language processing (NLP) and machine learning (ML) can be employed to identify and analyze the use of algospeak in real-time. Gligorea et al. suggest that current technologies should be designed to understand the context and meaning behind the use of codes and symbols, ensuring that users can continue to communicate freely without the risk of misinterpretation or censorship [31].

However, technology alone is not sufficient. Research must also focus on the ethical and social aspects of using algospeak. This includes studies on how algospeak can be used responsibly and what measures can be taken to reduce the risk of misuse. Gillespie argues that a deep understanding of the ethical and social implications of algospeak is essential to ensure that users can use this technology safely and ethically [1]. By combining efforts in technological, ethical, and social research, we can ensure that algospeak is used responsibly and creatively without compromising safety or freedom of speech.

## 7. Conclusion

The phenomenon of algospeak exemplifies the dynamic nature of digital culture and the ways in which social media users continually adapt to regulatory frameworks. While algospeak highlights creativity in language use, it also introduces significant challenges that must be addressed to ensure online safety and accountability. With a balanced approach and advanced technology, these challenges can be managed to foster a safer and more productive digital environment.

In conclusion, algospeak demonstrates how social media users adapt to the technologies and regulations that govern their interactions. It represents a form of dynamic and innovative communication, but it also carries risks and challenges that require careful management. Awareness, education, collaboration, and research are essential to addressing the issues posed by algospeak and ensuring the safe and responsible use of social media.

**Disclosure of Interests.** The authors have no competing interests to declare that are relevant to the content of this article.

## References

1. Gillespie, T.: *Custodians of the Internet: Platforms, content moderation, and the hidden decisions that shape social media*. Yale University Press, Yale (2018)
2. Tufekci, Z.: *Twitter and tear gas: The power and fragility of networked protest*. Yale University Press. (2017).
3. van Dijck, J., Poell, T., de Waal, M.: *The platform society: Public values in a connective world*. Oxford University Press, Oxford (2018)
4. Kaye, B. K.: Fake Out: How algorithms shape news and our views of the world. *Journal of Media Ethics*, 34(2), 115-127 (2019) <https://doi.org/10.1080/23736992.2019.1584653>
5. Colomina, C., Hernández, E., Rebolledo, M.: *The impact of disinformation on democratic processes and human rights in the world*. European Parliament, Brussels (2021)
6. Roberts, S. T.: *Behind the screen: Content moderation in the shadows of social media*. Yale University Press, Yale (2019).
7. Cohen, J., Collins, B., Hoang, D. T., Nguyen, N. T., Hwang, D. Trends in combating fake news on social media – a survey. *Journal of Information and Telecommunication*, 5(2), 247–266, (2021) <https://doi.org/10.1080/24751839.2020.1800583>
8. Ngai, E. W. T., Tao, S. S. C., Moon, K. K. L.: Social media research: Theories, constructs, and conceptual frameworks. *International Journal of Information Management*, 35(1), 33-44 (2015) <https://doi.org/10.1016/j.ijinfomgt.2014.09.005>
9. Andreassen, C. S., Pallesen, S.: Social network site addiction - An overview. *Current Pharmaceutical Design*, 20(25), 4053-4061 (2014) <https://doi.org/10.2174/1381612820666140218091401>
10. Gorwa, R., Guilbeault, D.: Unpacking the social media bot: A typology to guide research and policy. *Policy & Internet*, 12(2), 225–248, (2020) <https://doi.org/10.1002/poi3.212>
11. Bucher, T.: If...then: Algorithmic power and politics. *New Media & Society*, 20(1), 31-48 (2018) <https://doi.org/10.1177/2053951717738108>
12. Gehl, R. W.: Power/freedom on the dark web: A digital ethnography of the Dark Web Social Network. *New Media & Society*, 16(8), 1241-1253 (2014) <https://doi.org/10.1080/01972243.2014.896687>
13. Marwick, A. E., & Boyd, D.: Networked privacy: How teenagers negotiate context in social media. *New Media & Society*, 16(7), 1051-1067 (2014) <https://doi.org/10.1177/1461444814543995>
14. Tufekci, Z.: Big data: Pitfalls, methods, and concepts for an emergent field. *New Media & Society*, 16(8), 199-212 (2014) <https://doi.org/10.1080/1369118X.2014.889878>
15. Gillespie, T.: The relevance of algorithms. In: T. Gillespie, P. J. Boczkowski, K. A. Foot (eds.), *Media technologies: Essays on communication, materiality, and society* (pp. 167-194). MIT Press, Massachusetts (2018)

16. Noble, S. U.: *Algorithms of oppression: How search engines reinforce racism*. NYU Press, New York (2018)
17. Crawford, K., Paglen, T.: *Excavating AI: The politics of images in machine learning training sets*. The MIT Press, Massachusetts (2019)
18. Zuboff, S.: *The age of surveillance capitalism: The fight for a human future at the new frontier of power*. In: Editor, W. Longhofer, D. Winchester (eds.), *Social Theory Re-Wired: New Connections to Classical and Contemporary Perspectives*, 3rd ed., pp. 11-26, Routledge, New York (2023)
19. Davis, A. Y.: *Freedom is a Constant Struggle: Ferguson, Palestine, and the Foundations of a Movement*. Haymarket Books, Illinois (2016)
20. Human Rights Watch.: *A threshold crossed: Israeli authorities and the crimes of apartheid and persecution* (2021) <https://www.hrw.org/report/2021/04/27/threshold-crossed/israeli-authorities-and-crimes-apartheid-and-persecution>
21. Citron, D. K.: *Hate crimes in cyberspace*. Harvard University Press, Harvard (2014)
22. Marwick, A., Lewis, R.: *Media manipulation and disinformation online*. Data & Society Research Institute (2017) <https://www.posiel.com/wp-content/uploads/2016/08/Media-Manipulation-and-Disinformation-Online-1.pdf>
23. Zuboff, S.: *The age of surveillance capitalism: The fight for a human future at the new frontier of power*. Profile Books. (2019)
24. Gillespie, T.: *The relevance of algorithms*. In T. Gillespie, P. Boczkowski, & K. Foot (Eds.), *Media Technologies: Essays on Communication, Materiality, and Society* (pp. 185-193). MIT Press, Cambridge, MA. (2014)
25. Crawford, K., Gillespie, T.: *What is a flag for? Social media reporting tools and the vocabulary of complaint*. *New Media & Society*, 18(3), 410-428 (2016) <https://doi.org/10.1177/1461444816661653>
26. Mittelstadt, B. D., Allo, P., Taddeo, M., Wachter, S., Floridi, L.: *The ethics of algorithms: Mapping the debate*. *Big Data & Society*, 3(2), 1-21 (2016) <https://doi.org/10.1177/2053951716679679>
27. Floridi, L., Cowls, J., King, T. C., Taddeo, M.: *How to design AI for social good: Seven essential factors*. *Science and Engineering Ethics*, 26, 1771-1793 (2020) <https://doi.org/10.1007/s11948-020-00213-5>
28. Diakopoulos, N., Koliska, M.: *Algorithmic transparency in the news media*. *Digital Journalism*, 5(7), 809-828 (2017) <https://doi.org/10.1080/21670811.2016.1208053>
29. Buhmann, A., Paßmann, J., Fieseler, C.: *Managing algorithmic accountability: Balancing governance with agency*. *Big Data & Society*, 6(2), 1-12 (2019) <https://doi.org/10.1177/2053951719858745>
30. Zhu, Y., Moniz, J., Bhargava, S., Lu, J., Piraviperumal, D., Li, S., Zhang, Y., Yu, H.: *Can large language models understand context? Findings of the Association for Computational Linguistics: EACL 2024* (2024) <https://clanthology.org/2024.findings-eacl.135.pdf>
31. Gligorea, I., Cioca, M., Oancea, R., Gorski, A.-T., Gorski, H., Tudorache, P.: *Adaptive learning using artificial intelligence in e-learning: A literature review*. *Education Sciences*, 13(12), 1216, 1-27 (2023) <https://doi.org/10.3390/educsci13121216>
32. UNESCO.: *Freedom of expression online* (2022) <https://www.unesco.org>
33. *Cambridge Law Journal*.: *Private censorship and structural dominance: Why social media platforms should have obligations to their users under freedom of expression* (2021) <https://www.cambridge.org>
34. Cusumano, M. A., Gawer, A., Yoffie, D. B.: *The business of platforms: Strategy in the age of digital competition, innovation, and power*. Harper Business, e-book (2021) <https://doi.org/10.1080/20421338.2021.1273>
35. Warnke, L., Maier, AL. Gilbert, D.U.: *Social media platforms' responses to COVID-19-related mis- and disinformation: The insufficiency of self-governance*. *Journal of Management and Governance*, 27, 1-37 (2023) <https://doi.org/10.1007/s10997-023-09694-5>

36. Floridi, L., Taddeo, M., Turilli, M.: The ethics of algorithms: Mapping the debate. *Big Data & Society*, 3(2), 1-21 (2016) <https://doi.org/10.1177/2053951716679679>

**Open Access** This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

