RESEARCH ARTICLE

Automation of Political Propaganda in the Digital Sphere: The Role of Political and Social Bots in Shaping Public Opinion and Political Behaviour

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Abstract

The rapid expansion of social media platforms has fundamentally transformed the mechanisms of political communication and propaganda, introducing new automated actors capable of influencing public discourse at unprecedented scale and speed. Among these actors, political and social bots—automated or semi-automated software agents driven by artificial intelligence—have emerged as powerful instruments in the dissemination of political messages, misinformation, and strategic propaganda. These technologies blur the boundaries between authentic human interaction and algorithmically generated communication, thereby reshaping the dynamics of public opinion formation and political participation. This study examines the automation of political propaganda through the deployment of social and political bots on social media platforms. It seeks to analyse how these bots function as tools of persuasion, agenda-setting, and mobilisation, and to assess their capacity to influence political attitudes, electoral behaviour, and social orientations toward political issues. Drawing on interdisciplinary perspectives from political communication, propaganda studies, and internet research, the paper situates bots within the broader evolution of political propaganda techniques, highlighting their continuity with traditional practices while underscoring their distinctive technological characteristics. The research further explores the ethical and social implications of bot-driven political communication, particularly with respect to deception, manipulation, and the erosion of trust in digital public spheres. By examining notable empirical cases and theoretical contributions in the literature, the study argues that social bots have become a central component of contemporary political propaganda strategies, capable of amplifying narratives, simulating consensus, and exerting subtle yet effective influence on collective perceptions. Ultimately, the paper contributes to ongoing debates regarding the regulation, detection, and governance of automated political actors, emphasizing the need for greater transparency and critical awareness in digital political environments.

Introduction

Social ties are of great importance in people's lives, as they enable the dissemination of information, the exercise of pressure, and the promotion and creation of desirable behavioural patterns, particularly when the aim is to generate a specific form of political participation within a given social environment. Until recently, it was difficult for a minority member to express their political stance publicly and find social resonance or acceptance for that opinion, especially when that view conflicted with that of the majority. In this context, the role played by the structure and quality of social ties in achieving such influence cannot be overlooked. Moreover, the level of political participation depends on the nature and quality of the social network that connects the targeted individuals.

Accordingly, the role played by the internet and social media platforms in enhancing opportunities for participation and communication cannot be ignored, given their capacity to expand the scope of public debate and political participation across different regions and countries, regardless of the nature of their political systems and forms of governance. Early research examining the impact of these platforms demonstrated their capacity for mass mobilisation, as events in the Arab world were often described as "Facebook and Twitter uprisings" or "social media revolutions". This mobilisation capacity, associated with the ability of these platforms to encourage protest, can likewise be exploited by political regimes for mobilisation or countermobilisation, as well as for rallying supporters and securing electoral votes. This phenomenon has emerged as a prominent academic topic and a focus of scholarly research, particularly following the 2016 United States presidential election, during which these platforms were exploited to disseminate political propaganda aimed at mobilising voters and influencing their choices. The U.S. Congress subsequently opened an investigation into the vast volume of tweets supporting the Republican candidate at the time, Donald Trump, at the expense of the Democratic candidate, Hillary Clinton. These tweets appeared to originate from voters; however, subsequent investigations revealed that they were generated by bots using software designed to produce a massive volume of deceptive tweets that conveyed the impression of widespread popularity for the supported candidate and influenced voters' behaviour and inclinations. This case became known as the Cambridge Analytica scandal in 2018.

With the substantial increase in the use of these platforms, political regimes and parties have established dedicated digital platforms to promote partisan agendas on the basis of a range of dissemination tactics. As these platforms develop, the techniques of political communication continue to evolve and be updated to expand their influence and reach. Nevertheless, it should not be assumed that attempts to manipulate communication within these networks are confined to political regimes and major corporations. Instead, influence within these environments has developed with the emergence of what are known as robots or bots. This instrument has acquired political and social uses alongside the growing number of platform users and the diversity of their ages, social backgrounds, and political affiliations. Estimates indicate that Twitter contains approximately 48 million active accounts that are, in reality, social bots (Rodríguez-Ruiz, Mata-Sánchez, et al., 2020). With the increasing attention given to social media bots, their growing capacity for influence, and their frequent consideration as an effective tool that can be exploited for dissemination and expansion, the key question that must be addressed to understand this effectiveness is the extent to which social bots are capable of persuasion and how effective they are in political mobilisation, such that they may be regarded as a genuine alternative to traditional methods of political propaganda.

Accordingly, this study lies at the intersection of propaganda studies and internet research. It seeks to examine the development of persuasive propaganda through social media platforms, specifically propaganda that employs artificial intelligence–based tools such as social and political bots to influence public opinion and reshape the general orientations of targeted audiences.

2. Political Propaganda

Communication constitutes the core of political interaction, as political life cannot exist without the communicative process. Political communication is the process of transmitting messages between political actors, individuals, and societies within specific contexts and across levels of targeting that range from local to national and international. Within this process, the actor representing the sender conveys a message intended to modify the behaviour of the recipient in a

manner consistent with the overall purpose of the communicative act. Historically, political communication has therefore been regarded as an ancient phenomenon, as old as social organisations and systems of governance themselves, owing to its close association with the formation of the individual within these sociosocial groupings and their interaction within such environments. The emergence of political communication as a field of study, however, dates back to the 1960s and the rise of behavioural thought, during which political communication theory developed. Serious attempts have been made to examine the relationships between political actors and groups within society, or more precisely, social elites, as well as to study the role of political leadership in influencing voters' behaviour. These efforts are the first genuine attempts to establish theoretical frameworks for political communication and to regard it as a fundamental variable in behavioural research (Al Saud, 2006, p. 43).

As the form of the state, its institutions, and its functions evolved, interest in public opinion, pressure groups, political parties, and political associations increased, as these represent important components of the political process within the state. With this expansion, attention to political participation, political behaviour, and numerous concepts related to the core of political communication also intensified. Political communication has been regarded as "a method of managing political systems and an effective tool for decision-makers in controlling orientations and managing mass public opinion" (Alawi, 2020). With each development witnessed in communication media, which has become a primary means of satisfying the need for information, the methods and forms of political communication have likewise evolved within a tripartite interactive framework consisting of media, audience, and political systems. This triad is the essence of political communication: the political system serves as the source of information or the message, whereas the media and communication channels generally assume the task of delivering the message to the audience, which constitutes the target of the message. Accordingly, the larger the mass media audience is, the greater the likelihood that the political message will reach a wider public.

The form and mechanism of political communication often lead to its association with propaganda and to its description as "political propaganda", given the numerous points of overlap between the two, which render the boundaries separating them increasingly indistinct. Prior to defining propaganda, it should be noted that the concept has consistently been the subject of controversy. This is articulated by the American writer Walter Lippmann, who defined propaganda as "an attempt to influence the minds and souls of the masses and to control their behaviour for questionable purposes within a specific society and at a particular time". This understanding echoes the definitions offered by Jacques Ellul, who argued that "what is propaganda cannot be truth", and by Leonard Doob, who defined it as "an attempt to influence individuals and masses and to control their behaviour for questionable purposes, within a specific time frame and towards a predetermined goal" (Nashat, 1999, p. 16).

This suspicion surrounding objectives has enveloped the concept of propaganda in an aura of negativity, as described by James Riss, who considered propaganda to be "essentially an unethical activity that derives its power from weaknesses within public opinion, carried out by skilled practitioners, and reliant on presenting one side of the truth in order to mislead those unable to seek out facts for themselves" (Alawi, 2020, p. 17). This view adds an explicitly unethical dimension to Lippmann's scepticism by linking propaganda to the selective presentation of truth and to the targeting of specific groups predisposed to accepting and internalising such representations. Accordingly, propaganda aims either to distance target audiences from specific ideas or to encourage their adoption of alternative ones. This is reflected in the definition provided by the Dictionary of Media Terminology, which describes propaganda as "the influencing of public opinions and beliefs to orient them in a particular direction towards a system or doctrine, either positively or negatively, while seeking to prepare individuals psychologically to accept and internalise the viewpoints it promotes; in doing so, it may resort to the distortion and manipulation of facts" (Zaki, 1985, p. 129).

In contrast, the Nazi Minister of Propaganda, Joseph Goebbels, maintained that any means serving the objectives of propaganda were acceptable, regardless of form or ethical considerations: "Propaganda has only one objective, which is to subjugate the public, and all means that serve this objective are considered good, since propaganda in itself has no fixed method" (Adly, 2007, p. 20). Although Goebbels's definition legitimised all methods and instruments, these definitions generally failed to address the mechanisms or tools through which propaganda is disseminated. This limitation was subsequently addressed by later conceptualisations, most notably that of Harold Lasswell, who defined propaganda as "an attempt to control group orientations or influence them through the use of significant symbols", later redefining it as "the calculated selection and promotion of symbols to influence mass behaviour" (Adli, 2007, p. 19).

Abd al-Wahhab al-Kayyali, in the *Encyclopaedia of Politics*, offers a definition that attempts to encompass the various dimensions of propaganda, describing it as "the dissemination of ideas and viewpoints that others should adopt, employing the most advanced media and communication technologies ... as well as techniques of self-suggestion on the basis of the discoveries of individual and social psychology. Propaganda tends to simplify matters and to highlight advantages, disadvantages, and errors in ways that may suppress any capacity for criticism and for objective, rational judgement" (al-Kayyali, 1997, p. 681). He emphasised that propaganda has benefited from developments in the humanities and psychology, in particular, to persuade individuals and lead them to adopt specific positions through the use of diverse methods and psychological principles such as persuasion and suggestion, as well as by exploiting tendencies towards imitation and emulation under the pressure of repetition and continuity in propaganda programmes. These propaganda mechanisms have, in turn, benefited from technological and media developments.

Accordingly, propaganda exerts influence that does not leave the individual free to choose the outcomes of their analysis of a given position. This is because propaganda does not present an issue along with all its alternatives; where it does so, it would allow the recipient the opportunity for comprehension, evaluation, and autonomous choice. Instead, propaganda does not seek to awaken the masses. Instead, it works to numb them, paralyse their capacity for thought, and stimulate their instincts, subsequently directing these instincts in the manner desired by the sender of the propagandistic message. This implies that those engaged in propaganda must appeal to people's emotions before their intellects. Moreover, there exists a cognitive phenomenon that facilitates the sender's task in this endeavour: the public's insufficient preparation in logical reasoning, as well as their lack of adequate time to undertake analytical processes (Dorandan, 2002, p. 25).

2. Political and Social Bots

At the outset, it should be noted that social bots (SocialBot) differ from the more widespread and general web robot programmes (Web Robots). Conventional web robots collect information from selected websites according to their underlying algorithms. These are commonly referred to as "spiders" or "scrapers", which function across publicly accessible areas of the internet. These spiders or scrapers assist in generating news and advertising preferences; facilitate the speed, movement, and accuracy of searches; and store web pages for later retrieval, which is technically known as "cookies". These general-purpose bots, however, may also be employed for political or intelligence purposes, as actors rely on them for surveillance, intelligence gathering, and scanning activities to detect potential violations.

It is also necessary to distinguish between the terms *SocialBot* and *Social Bot*, noting whether a space separates the two, as each is functionally associated with a distinct domain. The former is used in information security. It refers to an actor classified as a digital threat that involves the falsification of communication links for criminal or quasicriminal purposes. The latter, by contrast, is a more general concept employed in internet research, aimed at developing automated efforts across social media platforms and exploring mechanisms for applying artificial intelligence.

With the ongoing development of social media systems, which have come to host dynamic interactions among millions of users, these platforms now offer genuine economic, political, and social incentives for the design of algorithms that seek to mimic human behaviour and introduce new dimensions of behavioural simulation or even to generate content that closely resembles human-produced material. Political and social bots provide such capabilities. They are algorithms that automate the production of content on social media networks and interact with humans in ways that are often difficult to distinguish from genuine human behaviour. However, within academic discussions, there remains considerable ambiguity and divergent interpretations regarding the nature of these bots and their capabilities. Research into social bots inevitably extends to broader domains of communication, information management, and data governance. Their field of application spans journalism, media studies, political communication, service marketing, and advertising, as well as the technical aspects of communication systems and linguistics. In short, this is an inherently interdisciplinary field.

Nevertheless, the majority of studies conducted on this topic have focused primarily on political communication in general and on political propaganda and its influence on public opinion orientations in particular. In a study by the Oxford internet Institute, the "Computational Propaganda Research Project" focused chiefly on "how tools such as bots are used to manipulate public opinion by amplifying or suppressing political content and disseminating misinformation and hate speech" (Woolley & Howard, 2017, pp. 5–8). Accordingly, research has concentrated on network analysis, with particular emphasis on Twitter and Facebook, examining how such bots can threaten political discourse by creating new meanings of social acceptance, influencing and manipulating public opinion orientations, and generating disorienting political debate

by increasing the volume of news presented to target audiences, or, in other words, by enhancing the effectiveness of exposure effects.

Consequently, these bots may construct their audiences by amplifying their networks of followers and coordinating among themselves to operate as multiple publishers of specific content, thereby creating the impression of its popularity and widespread acceptance, which in turn encourages its redistribution.

For example, in the period preceding the 2020 United States presidential election, an accelerated dissemination of political posts was observed across a series of social media accounts. These posts were considered incisive because the content of those accounts focused on contentious issues related to race, identity, ethnic groups, and gender movements. Notably, an examination of accounts seeking to disseminate this incisive content revealed that their primary objective was to expand their reach by invoking minorities, groups, and other actors through hashtags.

Although the initial assumption was that these accounts were local accounts managed by individuals residing in the United States, a CNN study conducted in cooperation with Clemson University and social media platforms revealed that the accounts originated in Nigeria and were operated by troll farms in Ghana. The case subsequently became known as the "troll farms case" (Ward et al., 2020). At the time, Russia was accused of providing support through the Russian internet Research Agency to African propaganda companies to influence voters' opinions and interfere in the electoral process in a manner that served Russian interests.

This was similar to what was alleged in relation to the previous United States presidential election in 2016, when it was claimed that Donald Trump's victory resulted from Russian interference, with accusations extending to claims that Trump had received Russian technical assistance. Some of these allegations were later substantiated by subsequent investigations, which confirmed that certain actors had received external support aimed at altering voters' course and orientations. This episode became known as the Cambridge Analytica scandal. The designation derives from the company that managed Donald Trump's electoral campaign. Although the company described itself as "an organisation concerned with measuring public opinion orientations and seeking to study voter behaviour" through the analysis of information flows across social media platforms, which was ostensibly limited to the collection and analysis of public opinion data, subsequent investigations demonstrated that it benefited from automated tools (bots) and social media algorithms to modify, shape, and direct the flow of information, employing deceptive tactics to manipulate public opinion orientations, namely, voters. In other words, it sought to "engineer audiences and influence them through the use of sophisticated techniques for producing fake news and carefully selected propaganda content that responds to the needs of the targeted user" (Al-Tamimi, 2018). This was achieved through social propaganda aimed at influencing voter behaviour and expanding the voter base of one candidate at the expense of another, whether by enhancing a candidate's image, undermining rivals through leaked scandals, or widely disseminating these scandals. This was exemplified in the case of Trump's opponent at the time, the Democratic candidate Hillary Clinton, through the hacking and leaking of the contents of her email correspondence.

These elections were among the most significant factors in intensifying the debate over this form of information operation conducted on social media platforms. They demonstrated to public opinion the effectiveness of employing social and political bots, as well as their capacity to operate and imitate human users to amplify specific political content for dissemination or to increase the number of individuals adopting it. This was achieved through the application of personal profiling or psychographics, which constitute a branch of psychological operations concerned with understanding the cognitive factors that drive individuals' behaviours. This includes emotional responses and motivations; ethical, moral, and political values; and entrenched attitudes, biases, and prejudices (CB Insights Research, 2020). The collection and analysis of such data enable the creation of detailed "psychological profiles" of audience segments, which are subsequently used to design tailored messages for those segments, enabling the precise targeting of narrow electoral constituencies. Cambridge Analytica reportedly collected data from more than 70 million individuals in the United States, subjected these data to psychographic techniques, and subsequently created bots to manipulate their political orientations and convictions, thereby incorporating them into the voter base supporting the desired candidate. This was accomplished by amplifying information supportive of Donald Trump.

This development led some analysts to regard political and social bots as among the most potent weapons of social media, describing them as a contemporary form of information warfare (Hwang et al., 2012, p. 176). This is attributable to the fact that governments are not the sole beneficiaries of information warfare and that bots influence public opinion by

increasing polarisation or sowing confusion among opponents and rivals. Political bots may also be exploited for media and investigative purposes, as investigative journalists can use them to automate aspects of their work or to monitor changes in politicians' posts and statuses on social media platforms (Lokot & Diakopoulos, 2015). Political bots may function as instruments of political surveillance.

Within the context of this development, the ethical dilemmas it raises have been projected onto the production of these bots: are they benign or harmful, or, instead, what are their intentions? This dilemma is driven primarily by the categories into which bots are classified. Bots described as benign or beneficial are those that automatically aggregate content from various sources, such as simple news feeds, or those programmed to provide basic responses to frequently asked customer queries, which brands and customer service companies commonly use. In contrast, categories classified as harmful, or more precisely misleading, include bots that proliferate on social media networks and, for example, automatically retweet content on Twitter without verifying the credibility of the source or the accuracy of the information in general (Gupta et al., 2013).

Moreover, any new technology, regardless of its form or purpose, is invariably accompanied by misuse. Social media networks are no exception to this inevitability, and it is in this domain that the second category of bots, namely, deceptive or misleading bots, operates. These bots distort the discourse of such networks and exploit it to manipulate public opinion through rumours, spam, malware, false information, incitement, or even the mere fabrication of trends. This ultimately results in multiple levels of societal harm. For instance, such bots may artificially inflate support for one political candidate at the expense of another, potentially influencing electoral outcomes (Wenzke, 2016) and consequently affecting the democratic process as a whole, along with the diverse ramifications that ensue at various levels and dimensions. Such practices did indeed occur during the United States presidential elections, as previously noted, where bots were extensively used to support candidates, discredit their opponents, and disseminate thousands of tweets containing fabricated news.

Discussion of bots also necessitates an examination of their historical impact and an assessment of their extent, as their proliferation is not limited to political contexts but may also be economic and financial through targeting and influencing financial markets. Some bots collect and analyse Twitter hashtags to predict financial market trends (Boukherouaa & Shabsigh, 2021). This is attributable to numerous incidents that unequivocally demonstrate the powerful effect of such hashtags on financial market stability. Another type of bot specialises in collecting trading-related information and data, and many of these bots contribute to the amplification of misleading information. Earlier, some bots promoted a digital company called Cynk by generating continuous discussion about it, which led to increased electronic trading in its shares and raised its market valuation to USD 5 billion. Ultimately, however, the company was revealed to be fictitious, and the phenomenon proved to be a mere bubble, although the resulting losses were very real (Hwang et al., 2012).

These campaigns are commonly referred to as *astroturfing* or Twitter bombs. The rationale for this designation is that, prior to the emergence of social bots, the issue of information validity was linked primarily to the credibility and reliability of the source. With the proliferation of these bots, however, measures of credibility have come to be associated with their dissemination and prevalence. The difficulty of identifying the source of news or information, known as the "ground zero" state, makes such campaigns difficult to trace and verify in terms of the flow of information they generate. The greater challenge, however, lies in attempting to counter these campaigns, which exposes specific vulnerabilities in confronting them. This, in turn, enhances the influence and impact of these bots. The most significant problem in the contemporary era is the advanced capabilities these bots now possess, enabling them to create personas that appear to be credible followers. As a result, it becomes virtually impossible for most individuals and filtering algorithms to detect them. A primary reason for the spread of such bots is the flourishing of their markets within social media environments, where the credibility and popularity of real individuals, particularly political figures, are closely linked to the visibility and popularity of their accounts on these platforms. Popularity, in turn, is associated with the number of followers through the

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* Astroturfing, imitation, the fabrication of opinion dynamics, planned popular deception, or orchestrated popular disinformation refers to manual or algorithmic propaganda techniques employed for advertising, political, or public relations campaigns, which aim to create a misleading impression of spontaneous behaviour or public opinion on the internet.

"expansion of social circles". Consequently, such individuals may seek to acquire fake followers or exploit bots to disseminate links to their accounts.

4. Artificial Intelligence and the Pursuit of the Humanisation of Bots

Many scholars attribute the idea of humanising bot design to the economic dimension of brands' marketing efforts. Numerous brands have recognised the importance of social media platforms in facilitating customer service. Instead of communicating with human agents who respond to consumers' and customers' inquiries by phone, it is sufficient to post tweets or updates on social media platforms, which are less costly and more efficient. Thus, brand-supportive blogging has become more beneficial and cost-effective in terms of expenditure and revenue. Within the cost–revenue equation, rather than relying on human administrators to manage their social media pages, brands with limited budgets increasingly resort to bot programmes to manage their online communities, employing copy-and-paste responses and disseminating content aimed at promoting products. The more widely a product name circulates, the greater its social acceptance becomes, as dissemination is equated with quality within the social imagination.

Marketing experts traced this approach back to the 1970s to a concept developed by George Silverman: word-of-mouth marketing (WOMM). The core assumption of this type of marketing is that a satisfied customer will inform their social circle about the product's quality and recommend it (Koeneke, 2018). That circle, in turn, will inform its own network, and so on. Oral communication thus represents the simplest and least costly form of marketing and advertising while also being highly credible, as it is perceived as unbiased. Consequently, it produces a domino effect, whether positive or negative. In the contemporary era, word-of-mouth marketing has shifted from directly informing a friend or communicating by telephone to social posting and sharing experiences on social media platforms. This is the concept adopted by bot developers to emulate human behaviour in dissemination and marketing practices, a process commonly referred to as "humanisation".

From a theoretical perspective, the automation associated with social and political bots is linked to their function, as they operate to create the "mediation" necessary for human interaction and for fulfilling our needs and objectives through the internet and social media in particular, given that these platforms constitute among our most important sources of information. Since these media are now highly interconnected and encompass all forms of social ties, they significantly influence the formation of our awareness and the structure of the surrounding social reality. The concept of mediation embodied by bots may thus be described through the extensive reliance on digital media and data across various social domains, whether material or immaterial. In this sense, they "redefine the concept of social experience, which has come to depend on technologically mediated processes" (Hepp et al., 2018). Accordingly, the relationship with digital media represented by social media platforms reshapes our understanding of the content of the social environment. Any development affecting this digital environment will therefore inevitably influence our comprehension of it, as well as of the social environment it represents, as a consequence of the formation of this relationship.

Accordingly, although, until recently, it was possible to distinguish between certain types of bots, robots, and honest individuals on the basis of human behavioural patterns, the technology underpinning these bots has improved and evolved rapidly, exceeding existing capacities for tracking and detection. In this context, it may no longer be possible to identify them with the same ease in the future. Some bots that employ artificial intelligence can infiltrate human social groups more effectively and generate tweets and posts that are directly relevant to these groups. Their reliance on artificial intelligence, which aggregates data from millions of sources at high speed, enables them to produce sophisticated and persuasive propaganda. By consolidating these trends, such bots may acquire the capacity to overshadow authentic political discourse.

This is not a matter of science fiction. Observers of the development of artificial intelligence–based conversational bots capable of composing personal messages and providing commentary note that such bots may, in the very near future, intervene in decision-making processes. Given the central role of social media in contemporary political processes, these bots can perform a form of "mediation" by posting comments, engaging in discussions of political issues, or even commenting on and resharing political content. This can lead to the creation of digital entities that appear authentic, even to specialists tasked with detecting them. In other words, they may achieve a comprehensive form of "humanisation", as they will appear indistinguishable from real individuals. This, in turn, has the potential to obscure or overshadow genuine online debate.

For some time, social media platforms have attempted to eliminate such bots by tightening account restrictions to detect fake accounts used by bots for dissemination. However, bots have increasingly impersonated real individuals and adopted techniques of "anonymous discourse", which are essential for identifying and understanding general trends in public opinion (Habermas, 2006). This development renders detection techniques rudimentary compared with the obfuscation strategies bots employ to pursue humanisation.

Conclusion

The increasing forms of interconnectedness created by social media platforms highlight the severity of the consequences that may arise from manipulating these networks. In addition to violating numerous political values, such manipulation can provoke panic during disasters or crises and influence financial markets and the prices of goods and services. Accordingly, social bots can harm societies and political systems in more sophisticated and subtle ways. While this vulnerability can be exploited for financial cybercrime, it can be leveraged more profoundly to generate crises of trust. In this sense, specific bots may impede the progress of public policies and governmental programmes by creating the impression of strong opposition and widespread popular movements against such policies or by contributing to the polarisation and controversy surrounding them (Hong & Kim, 2016).

The growing influence of these bots is attributable primarily to structural problems within the social media environment. These platforms suffer from a significant issue in source identification, whereas the more critical dilemma concerns what is termed "emotional contagion". Some published studies indicate that bots can easily infiltrate discussion groups and manipulate participants to influence their perceptions of reality or to alter analyses and statistics that are important for evaluating and measuring impact or public opinion (Hajli et al., 2022).

The extent of influence that these bots now exert on public opinion orientations constitutes one of the most significant challenges to digital security in the contemporary era. Consequently, concerted efforts are underway to develop methods for distinguishing between human interaction and bot activity in digital spaces. However, this is far from straightforward, owing to the difficulty of understanding the full range of actions bots can perform. Early forms of bots were assigned a single, simple task: the automated dissemination of content, which could therefore be described as rudimentary. As such, they can be detected through a simple method known as a "honeypot", which involves publishing content that is of no interest to humans and with which real individuals would not engage, thereby revealing the presence of such bots. The evolution of artificial intelligence tools and bot technologies in particular, however, now poses an existential threat to political discourse and to the democratic process as a whole.

This threat is closely linked to reach, dissemination capacity, and affordability. Until recently, political propaganda required media networks with large audiences and substantial financial resources, which many states lacked. Today, by contrast, one of the most significant advantages offered by social media platforms is the vast scale of their audience, in addition to the low costs of software development, which may be accessible to small organisations or even ordinary individuals.

Given that disinformation efforts have become the most prevalent component of political propaganda, whether conducted by states, by political and electoral campaign managers, or in relation to specific causes, political bots are likely to constitute the future of propaganda. Although they do not yet possess the absolute capacity to direct debate as desired, they can overwhelm discourse entirely, in the sense that the content they generate can dominate the overall communicative landscape. While their ultimate impact on the political process cannot yet be definitively determined, they nevertheless possess the potential to exert a harmful influence upon it.

Ethical Considerations

This study is based exclusively on secondary data, publicly available academic literature, and documented case analyses related to political communication and social media platforms. No human participants, personal data, or confidential information were involved in the research process. Consequently, ethical approval from an institutional review board was not required. The authors have adhered to internationally recognized standards of academic integrity, objectivity, and

transparency, ensuring that all sources are appropriately cited and that the analysis avoids harm, misrepresentation, or partisan bias.

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Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this article. The research was conducted independently and without any financial, institutional, or personal relationships that could be perceived as influencing the content or conclusions of the study.

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