DISINFORMATION RESEARCH IN POLITICAL CONTEXTS: METHODOLOGICAL CONSIDERATIONS FOR BEHAVIOURAL ANALYSIS

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Abstract

The Disinformation has emerged as a critical factor influencing democratic processes and voter behavior across both established and emerging democracies. Despite a growing body of literature, methodological approaches to studying disinformation remain fragmented and often lack comparability. This paper offers a comprehensive review of current methodological trends in interdisciplinary research on political disinformation, with an emphasis on cognitive, behavioural, and communicative dimensions. It provides a structured analysis of research methods employed in recent empirical studies, including experimental designs, eye-tracking technology, psychometric scales, qualitative and quantitative content analysis, and data-driven network approaches. The paper concludes with a discussion of methodological challenges, ethical considerations, and future directions in behavioural disinformation research. By integrating existing approaches with innovative analytical tools, this contribution aims to support the development of more robust, transparent, and policy-relevant studies on the impact of disinformation in political contexts.

Key words: disinformation, methodology, behavioural research, eye-tracking

JEL Codes: D72, C83, C93

Introduction

Disinformation poses a systemic challenge to democratic societies. It undermines the quality of public debate, distorts the conditions for electoral competition and undermines trust in institutions. The digital transformation of the media landscape has accelerated the spread of misinformation and increased its reach and intensity through algorithmic personalisation, low cost of dissemination, and viral spread through social media (Lazer et al., 2018; Wardle & Derakhshan, 2017). In the context of elections, misinformation is often used to manipulate voter perceptions, suppress voter turnout, or delegitimise political opponents, directly threatening the integrity of elections (Bjornsgaard & Dukić, 2023). Such mechanisms can directly undermine

the integrity of democratic elections and undermine trust in the basic norms of liberal democracy (Pennycook & Rand, 2021). Despite the growing interest in disinformation in the scientific and political spheres, methodological approaches to studying it remain highly inconsistent and difficult to compare (Broda & Strömbäck, 2024). Research is conducted across political science, media studies, psychology, and behavioural economics, with each discipline providing unique but often disconnected insights into how disinformation is created, disseminated, and received. This results in difficult comparability of studies, limited theoretical generalizability, and low transferability of empirical interventions (Guess et al., 2020). This paper aims to contribute to the integration of existing methodological approaches through a review of selected research strategies used in the previous research. Particular emphasis is placed on the interdisciplinary dimensions of research, specifically the integration of cognitive, behavioural and communication perspectives, which allow for a more comprehensive capture of the effects of misinformation on voter behaviour.

1 Theoretical and conceptual background

The study of political disinformation requires a theoretically anchored and interdisciplinary approach. A number of scholarly disciplines have contributed to understanding how individuals process, adopt and incorporate manipulative content into their interpretive frameworks. In this study, we draw on three analytical lines of inquiry that have been most emphasised in recent research and also appear to be complementary: cognitive psychology, behavioural economics, and political communication theory (Bjornsgaard & Dukić, 2023; Broda & Strömbäck, 2024).

From the cognitive psychology perspective, biased information processing mechanisms play a crucial role. A key concept is motivated reasoning, which is the tendency to process information in accordance with prior attitudes and identities (Kunda, 1990). Although this work is one of the older ones, its influence on the development of cognitive theories of bias remains crucial, developing reasoning in the context of political polarisation and resistance to misinformation corrections. Another important phenomenon is the illusory truth effect, where repeated exposure to information increases its subjective credibility even if it is objectively false. For example, this effect has been empirically confirmed in studies by Fazio et al. (2015). This cognitive effect seems particularly relevant in the digital environment, where users are repeatedly exposed to similar content.

Behavioural economics provides a framework for understanding an individual's decision-making processes in relation to risk, uncertainty and information. The original

prospect theory of Kahneman and Tversky (1979) plays a key role here, which shows that people make irrational decisions, perceiving losses more strongly than gains. This asymmetry is commonly exploited in misinformation messages that operate on fear, moral hazard, or loss of values (Pennycook & Rand, 2021). Moreover, Akerlof and Shiller (2015) highlight the importance of trust as a variable that influences whether people accept information as valid, and in an environment of low trust in institutions, openness to alternative, often manipulative, interpretations increases.

The third pillar of the framework is political communication, which focuses on the dynamics of the information environment. Benkler et al. (2018) analyse how algorithmic amplification and the structure of digital networks promote the emergence of echo chambers and increase the risk of information bias. Furthermore, digital platforms enable the targeted spread of misinformation within homogeneous communities, accumulating identitarian narratives and weakening the deliberative character of the public sphere (Guess et al., 2020). In this context, the framework of 'information disorder', as defined by Wardle and Derakhshan (2017), is often used. This concept includes not only intentionally misleading content (misinformation) but also unintentional errors (misinformation) and the purposeful misuse of truthful information (malinformation).

Combining these three theoretical approaches provides the basis for an interdisciplinary analytical framework that allows for both descriptive and explanatory research on the impact of misinformation on political decision-making.

2 Methodology

The research strategy focused on studies published between 2010 and 2024, with key search terms including combinations of terms such as disinformation, misinformation, fake news, experimental design, behavioural measurement, eye-tracking, survey, fact-checking and cognitive bias. The search was conducted in the Web of Science, Scopus and PsycINFO databases, and only peer-reviewed literature in English was included. From a total of 253 identified studies, 47 publications were selected for in-depth content analysis based on predefined criteria of relevance, quality and research design. The selection and analysis process was inspired by the principles of the PRISMA protocol (Preferred Reporting Items for Systematic Reviews and Meta-Analyses), including the transparent application of inclusion and exclusion criteria. The analysed studies were then classified according to research design, variables examined, methods used (laboratory experiments, eye-tracking, quantitative and

qualitative content analysis, network analysis) and thematic focus. The following sections present the key findings from the most relevant prior research.

3 Main findings from previous research: methodological diversity

The scholarly grasp of misinformation has significantly transformed in the last decade, reflecting changes in media ecology and the nature of democratic deliberation in the digital era. While early research focused mainly on descriptive and content analysis of fake news, current research is moving towards more analytically sophisticated approaches that combine insights from cognitive psychology, behavioural sciences, data analytics, and digital media studies (Bjornsgaard & Dukić, 2023). As Bjornsgaard & Dukić (2023) note, an empirical approach dominates current research, but with significant variation in research designs, sampling, operationalisation of key concepts, and measurement tools used. This methodological heterogeneity leads to low comparability of results and limits the possibility of cumulative scientific knowledge. This development results in a dynamic but structurally heterogeneous research space in which different theoretical frameworks, research objectives and methodological norms coexist. Broda and Strömbäck's (2024) systematic review study supports this statement, pointing out the need to clarify the terminology and operationalisations. The diversity of research designs - from controlled exposure experiments, through the analyses of social media dissemination, to case studies of media reception - complicates the synthesis of findings and limits the ability to generalise findings across contexts (Benkler et al., 2018).

Prior studies also conflate terms such as fake news, hoaxes, propaganda or misinformation without consistent distinction, further complicating the standardisation of research approaches. This state of affairs has led some authors to call for the development of a unified conceptual apparatus and methodological framework that would enable research across contexts and time and platforms (Cook et al., 2022; Bjornsgaard & Dukić, 2023).

The problem of fragmentation is also evident in the different epistemological approaches, while some of the research is based on quantitative experiments and measurement of beliefs, others work with qualitative analyses of discourse or case studies of the dissemination of specific narratives. Specific challenges are also posed by research in digital space, where it is not always possible to verify exposure to misinformation or its effects in the natural environment (Guess et al., 2020; Wilson et al., 2023).

One of the consequences of this methodological inconsistency is the difficulty of designing evidence-based intervention strategies. Although concepts such as prebunking or

accuracy nudges (Pennycook et al., 2020) are being developed, their testing relies on heterogeneous experimental designs and undefined levels of ecological validity. In view of the above, it can be concluded that the field of disinformation research faces not only the challenge of content but also the challenge of methodological consolidation. The latter is essential for generating comparable findings, designing interventions and developing public policy recommendations. Therefore, the following chapter focuses on the systematisation of the methods used so far to identify their application potential and limitations.

4 Research methods overview and implications for future research

The choice of methods is usually conditioned by the epistemological anchorage of the researchers, as well as the target level of analysis - whether it is individual perception, interpersonal sharing or systemic dissemination of content across digital networks. Despite the considerable diversity, several dominant methodological strategies can be identified.

First, laboratory and quasi-experimental approaches are widely used to measure the impact of misinformation on attitudes, perceptions of credibility or electoral decision-making. A typical research design involves exposing a respondent to a controlled informational stimulus (true or misleading), followed by measurement of attitude change or behavioural intention (Pennycook et al., 2020). Experiments allow for testing causal hypotheses, but at the cost of limited validity (Lazer et al., 2018).

Second, eye-tracking methods represent an innovative tool for the analysis of visual attention and cognitive processing of information stimuli. They allow us to determine how users interact with misinformation content, how long they attend to certain message elements, and which parts of a text or image are attractive or conflicting to them. The advantage of these methods is the ability to non-invasively and objectively measure real-world behaviour, thus complementing subjective accounts (Cook et al., 2022).

Third, questionnaire surveys and standardised psychometric scales measure attitudinal variables such as trust in the media, cognitive openness, political orientation or susceptibility to misinformation. Validated instruments such as the *Misinformation Susceptibility Scale* or the *Cognitive Reflection Test* are widely used in behavioural research (Frederick, 2005; Wilson et al., 2023). Combining these tools with experimental or observational methods provides a basis for data triangulation.

Qualitative and quantitative content analysis is an important tool for classifying types of misinformation, including narrative structures, linguistic strategies, and visual stylisation. In

this way, the importance of categories such as *fabricated content*, *manipulated content*, and *satirical misinformation* is highlighted, which allows for finer analytical distinctions. Discursive analysis then examines the ideological frameworks, symbolic constructions, and legitimising strategies used in misinformation texts (Bjornsgaard & Dukić, 2023).

Social network analysis (SNA) allows for tracking the trajectory of disinformation dissemination and identifying key actors, influential nodes, and information flows. These methods are often combined with machine learning tools to detect anomalous behaviour, automatically categorise content or detect bots. Data-driven research enables the analysis of large datasets from platforms such as Twitter, Facebook or Telegram, thus expanding the possibilities for quantitative mapping of disinformation campaigns (Wilson et al., 2023).

The proposed research framework should be based on a mix of several approaches, including experimental exposure, eye-tracking, and standardised attitudinal measurement. The conceptual foundation of the framework reflects the need to triangulate data sources while integrating insights from cognitive, behavioural, and communication theories.

For the experimental exposure and stimulus structure, the core of the research design is the controlled exposure of participants to a realistically stylised information stimulus that mimics the format of a common political message on social media. The stimuli could be created based on pre-validated templates with content classified as misinformation or truthful, and using existing databases of verified cases (e.g., International Fact-Checking Network - IFCN). The experiment will have a parallel group design, where different groups of respondents will receive other types of messages (misinformation, correction, truth-checking stimuli).

This approach corresponds to the methodology of *exposure-based designs* as applied, for example, in the experiments of Pennycook et al. (2020) or the "inoculation theory" approach. The advantage of this design is the ability to test the effects of specific types of misinformation on targeted cognitive or behavioural variables. In order to capture unconscious cognitive responses, eye-tracking will be used to analyse gaze trajectory, fixation and visual attention span. This approach has been successfully applied in media perception research, e.g., by Cook et al. (2022), who investigated the interaction between visuals and perceived credibility of climate news.

Eye-tracking will provide data on which parts of the stimulus respondents paid attention to (e.g., title, logo, visual frame, authority citation) and in what order. This data can be correlated with subsequent attitudinal output, thereby making an empirical link between attention and content reception. The exposure phase is followed by a questionnaire part that includes validated scales measuring trust in the media, openness to correction, perceptions of

the credibility of the stimulus and cognitive reflection. The choice of these scales is conditional on their replicated validity in the context of misinformation research. The questionnaire also measures attitudinal shifts, including changes in trust in the information source, willingness to share content, or identification with the opinion presented. These variables serve as dependent variables in relation to the type of stimulus and visual interaction Bjornsgaard & Dukić, 2023; Broda & Strömbäck, 2024).

To sum up, the proposed framework is based on mixed research design principles and allows triangulation between perceptual (eye-tracking), attitudinal (questionnaire) and experimental (random exposure) data. This strategy enhances the internal and ecological validity of the research, allowing for the testing of hypotheses about the effect of misinformation in the context of digital media communication, while providing tools for quantitative and qualitative analysis. In terms of applicability, the framework is suitable for comparative analyses across platforms, topics and demographic groups. At the same time, it respects the ethical rules of working with manipulative content, particularly the principle of information transparency, back-correction and participant debriefing.

Conclusion

The proposed research framework attempts to bridge the current methodological disparities that characterise the current study of political disinformation. As Broda and Strömbäck (2024) show, existing research strategies often operate in isolation within their disciplinary traditions, which limits the possibility of comparing results and formulates an obstacle to the formulation of integral theories of the effects of disinformation on democratic processes. Therefore, this study offered an analytical model combining experimental, behavioural, and perceptual measurement components to capture the complex effects of misinformation in digital environments.

One of the main benefits of the framework is its ability to track attention, interpretation and attitudinal response simultaneously. This multilevel structure of the research design allows us to go beyond the limitations of traditional questionnaire studies that rely on introspective accounts and provides a richer database for investigating the cognitive mechanisms of misinformation reception (Cook et al., 2022). Crucially, triangulation also increases the robustness of inferences and enables their verifiability across contexts and research populations. Given that the behavioural effects of misinformation are not only a function of content, but also of presentation, visual stylisation, and context of dissemination (Benkler et al., 2015). In this

way, we find the integration of eye-tracking particularly relevant. This approach has so far been applied mainly in neuropsychological research and marketing, but its transfer to the field of political communication allows for analysing, for example, attentional differences towards emotionally charged or ideologically close messages.

Despite these advantages, several limitations must be noted. The research framework requires a technically demanding environment (eye-tracking laboratory), time-consuming data collection and careful ethical preparation, especially concerning debriefing. Another limitation is that experimental exposure is always artificial to some extent, and although the framework is designed with ecological validity in mind, it cannot fully replicate the complex information dynamics of social networks.

The proposed approach is designed to be modular, which allows it to be adapted to different thematic areas (e.g. healthcare, election campaigns, geopolitics) and media formats (images, videos, memes). The combination of quantitative and behavioural data also makes it suitable for longitudinal tracking of changes over time, addressing the need to track variability in the reception of misinformation in relation to media exposure and changes in trust in authority (Bjornsgaard & Dukić, 2023; Guess et al., 2020).

This study responds to the growing socio-political significance of disinformation and the persistent methodological challenges associated with its investigation. Based on a critical analysis of the current state of research and relevant theoretical approaches, a comprehensive research framework was proposed that combines experimental exposure, visual attention monitoring, and attitudinal measurement. This framework aims to strengthen the validity of research on the effects of misinformation in political contexts and to contribute to methodological convergence within an interdisciplinary discourse.

The contribution of the framework lies in its ability to triangulate perceptual, behavioural and attitudinal data, thus overcoming the limitations of single-oriented approaches and creating room for more robust and generalisable findings. In doing so, it responds to the need to more accurately capture how misinformation influences voter decision-making, trust in the media, and polarising tendencies in society.

The proposed model is flexible and adaptable for various research and practical applications, from comparative studies to evaluation of intervention strategies to development of media literacy tools. At the same time, it reflects the ethical aspects of working with misinformation content and emphasises the importance of transparent debriefing as part of responsible research design.

Lastly, we note that additional future research considerations could include a longitudinal component that would allow tracking the stability of attitudinal changes over time, and linking to large datasets (e.g. from online platforms) could be recommended to increase the external validity of the findings. Given the dynamic nature of the digital information environment, misinformation research remains an open and strategically important field that requires methodological innovation as well as interdisciplinary collaboration.

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