

From Cognitive Dissonance to Cognitive Resonance: A Sociological Framework for Psychological Alignment in the Algorithmic Age

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Abstract

Leon Festinger's theory of cognitive dissonance (1957) has long served as a cornerstone in understanding psychological conflict arising from contradictory beliefs and behaviors. However, in the algorithmic era, where personalized content delivery reinforces pre-existing attitudes, the traditional dissonance framework no longer fully accounts for cognitive and behavioral processes in digital environments. This paper introduces *cognitive resonance* as a complementary and, in some aspects, a competing framework that explains how algorithmic content personalization fosters passive psychological alignment rather than internal conflict. This study systematically compares cognitive dissonance and cognitive resonance, examining their theoretical similarities and key differences in modern media environments, ranging from the analog information flow of the 1950s to today's algorithm-driven digital ecosystems. Through a qualitative analysis of military recruitment campaigns and strategic communication efforts, the research highlights how personalized content enhances psychological harmony, reinforcing attitudes and shaping behaviors in ways that dissonance theory fails to capture. The findings of this study provide valuable insights into the role of digital media in societal polarisation, the spread of misinformation, and strategic audience engagement. The proposed cognitive resonance framework contributes to a deeper understanding of how belief systems are shaped and sustained in the digital age, offering insights applicable beyond military marketing to broader strategic communication practices.

Keywords

Cognitive Resonance, Algorithmic Content Personalization, Echo Chambers, Strategic Communication, Emotional Engagement

1. Introduction

The rapid expansion of digital media and algorithmically driven content personalization has transformed how individuals consume, process, and internalize information. Traditional cognitive theories, such as cognitive dissonance (Festinger, 1957; Harmon-Jones & Mills, 1999), which suggest that individuals experience psychological discomfort when confronted with conflicting information, are increasingly challenged by the realities of modern media environments (Harmon-Jones & Mills, 1999; Jones & Gerard, 1967). Self-discrepancy theory highlights the psychological discomfort individuals experience when their actual self does not align with their ideal or ought self, influencing their affective states and motivation to resolve discrepancies (Higgins, 1987). In contrast to cognitive dissonance, which assumes an inherent conflict in belief adjustment, cognitive resonance offers a more suitable framework for understanding how individuals experience psychological alignment with the content they encounter in personalized digital ecosystems (Zuboff, 2019; Pariser, 2011). Motivated reasoning theory further supports this perspective by suggesting that individuals selectively process information to maintain cognitive consistency and avoid psychological discomfort (Kunda, 1990). Personalized content, driven by algorithmic reinforcement, promotes psychological alignment by strengthening pre-existing beliefs and fostering emotional engagement. Implicit social cognition plays a significant role in shaping attitudes and self-esteem, often outside conscious awareness, thus influencing individuals' responses to personalized digital content (Greenwald & Banaji, 1995; Couldry, 2012; Napoli, 2014). This process aligns with motivated reasoning, where individuals selectively process information to support their beliefs while avoiding cognitive discomfort (Kunda, 1990). Empirical studies indicate that while external rewards can reinforce engagement, they may also reduce intrinsic motivation, potentially affecting long-term interest in content (Lepper, Greene, & Nisbett, 1973).

Recent research underscores the role of asymmetrical frontal cortical activity in regulating approach and withdrawal motivation, offering insights into how personalized content may elicit varying emotional and behavioral responses in digital environments (Harmon-Jones & Gable, 2018). Social neuroscience provides valuable insights into how biological and psychological mechanisms shape social behavior and influence responses to personalized digital content (Harmon-Jones & Winkielman, 2007). This aligns with normative and informational social influence, where individuals adjust their attitudes based on perceived social expectations and informational cues (Deutsch & Gerard, 1955). Emotional reinforcement in personalized content consumption echoes findings in social psychology, which show that positive affect significantly influences an individual's willingness to engage with content (Isen & Levin, 1972; Harmon-Jones & Gable, 2009). Asymmetrical frontal cortical activity has been shown to play a crucial role in approach and withdrawal motivation, highlighting the neural basis of individuals' responses to emotionally charged digital content (Harmon-Jones & Gable, 2018). Research indicates that physiological states, such as body position, can influence emotional

and cognitive responses, suggesting that even subtle contextual factors may modulate how individuals process emotionally charged content in digital environments (Harmon-Jones & Peterson, 2009).

This paper introduces and further develops the emerging theory of cognitive resonance as a response to the evolving digital media landscape, providing a novel framework that builds upon and extends traditional communication theories. Theories of social influence, such as those introduced by Deutsch and Gerard (1955), highlight how individuals are shaped by normative and informational pressures within their social environments. These dynamics become even more complex in the digital age, where algorithmically personalized content reinforces existing biases rather than encouraging critical reflection. Unlike traditional models, cognitive resonance provides critical insights into the growing phenomenon of content personalization, wherein digital algorithms curate information that aligns seamlessly with users' preferences and behavioral patterns. The Elaboration Likelihood Model suggests that individuals process personalized content through central and peripheral routes, which impact their attitudes and decision-making differently (Petty & Cacioppo, 1986). This shift presents significant advantages for strategic communication, particularly in domains such as political campaigns, military recruitment, and crisis management (Helberger et al., 2018; Mayer-Schönberger & Cukier, 2013). By leveraging cognitive resonance, organizations can achieve more effective communication outcomes, fostering more profound engagement, enhancing message retention, and driving behavioral change. The emotional dimension of cognitive resonance aligns with research on motivated reasoning, which suggests that individuals actively seek information that reinforces their emotional states and pre-existing beliefs (Kunda, 1990). The strategic potential of cognitive resonance lies in its ability to create persuasive and emotionally resonant messages that reinforce the target audience's attitudes, thus enabling more precise and impactful interventions (Bucher, 2018; Shin, 2022).

However, despite these benefits, the over-reliance on cognitive resonance introduces ethical concerns and potential risks, such as reinforcing biases, ideological polarisation, and misinformation (Beer, 2017; Vaidhyanathan, 2018). Unlike cognitive dissonance, which encourages critical reflection and potential belief revision, cognitive resonance may reduce exposure to diverse viewpoints, leading to echo chambers that diminish cognitive diversity (Pariser, 2011; Tufekci, 2015). Consequently, while cognitive resonance presents opportunities for more tailored and effective communication strategies, it also necessitates careful regulatory oversight and ethical considerations to ensure responsible use in democratic and security contexts (Helberger et al., 2018; Napoli, 2014). Through this research, the author aims to establish cognitive resonance as a new theoretical framework that addresses the limitations of existing media theories in the context of algorithmically driven information environments.

This study seeks to address the following research questions:

- In what ways does cognitive resonance provide a more effective framework for

understanding audience engagement compared to cognitive dissonance in the digital age?

- How can strategic communication practices harness cognitive resonance while mitigating the associated risks of echo chambers and misinformation?
- What role does emotional resonance play in enhancing the impact of personalized content within military, political, and crisis communication contexts?

Through a qualitative methodological approach, this research aims to establish a comprehensive theoretical framework that delineates the mechanisms through which cognitive resonance operates and its practical applications in contemporary digital communication strategies. By comparing traditional and algorithmically mediated communication strategies, the study contributes to a deeper understanding of how digital technologies influence public perception and strategic messaging (Couldry & Hepp, 2017; Mayer-Schönberger & Cukier, 2013). In conclusion, cognitive resonance provides a valuable and timely perspective on the dynamics of personalized communication in the digital era. While traditional theories such as cognitive dissonance offer insights into belief conflicts, they fail to address the realities of algorithmically reinforced media environments. As digital personalization continues to shape public discourse and engagement, the proposed framework of cognitive resonance—developed through this research—offers an essential tool for understanding and optimizing strategic communication practices across various domains (Zuboff, 2019; Shin, 2022; Pariser, 2011).

2. Theoretical Framework

As individuals engage with personalized content, self-knowledge serves as a regulatory function, guiding their behavior in alignment with their self-concept and shaping their responses to such tailored digital experiences (Higgins, 1996). The traditional theory of cognitive dissonance, first introduced by Festinger in 1957, has long been considered a foundational framework for understanding the psychological stress individuals experience when confronted with information that contradicts their beliefs. This theory has played a crucial role in explaining how individuals seek to resolve internal conflicts by adjusting their attitudes and behaviors to restore cognitive harmony (Festinger, 1957; Harmon-Jones & Mills, 1999). Experimental studies have shown that physiological responses, such as arousal, play a significant role in the experience of cognitive dissonance, influencing how individuals respond to conflicting information (Kiesler & Pallak, 1976). An action-based model of cognitive dissonance suggests that individuals are motivated to reduce dissonance to achieve psychological harmony and facilitate goal-directed behavior, which has significant implications for engagement with personalized digital content (Harmon-Jones & Levy, 2015). However, the digital age has introduced profound transformations in how individuals consume and process information, necessitating a critical reassessment of classical cognitive theories. As traditionally conceptualized, cognitive dissonance has been linked to psychological discomfort arising from conflicting beliefs and behaviors, which indi-

viduals seek to resolve to achieve cognitive harmony (Elliot & Devine, 1994).

The widespread proliferation of algorithmic content personalization has significantly altered the media landscape, minimizing exposure to conflicting viewpoints and reducing the potential for cognitive dissonance (Pariser, 2011; Zuboff, 2019). Public perceptions regarding societal racism often diverge from empirical evidence, with research indicating that implicit biases continue to shape social interactions and institutional policies (West, 2025). Instead, contemporary digital platforms increasingly foster cognitive resonance, in which individuals encounter information that aligns with their pre-existing beliefs, reinforcing their perspectives rather than challenging them (Couldry, 2012; Napoli, 2014). Motivated social cognition plays a crucial role in shaping ideological beliefs, with individuals often seeking information that aligns with their pre-existing worldviews to reduce psychological discomfort and maintain cognitive consistency (Kruglanski, 1996; Jost, et al., 2003). In this context, self-knowledge continues to serve as a regulatory mechanism, guiding individuals' behavior in alignment with their self-concept and influencing their responses to personalized digital content (Higgins, 1996).

In modern digital environments, advanced algorithms curate content based on users' established preferences and behavioral patterns, creating echo chambers that amplify cognitive resonance (Bakshy et al., 2015; Helberger et al., 2018). Unlike cognitive dissonance, which necessitates a resolution of conflicting cognitions, cognitive resonance strengthens individuals' attitudes and perceptions, leading to higher levels of engagement and belief reinforcement (Bucher, 2018; Tufekci, 2015). This phenomenon has substantial implications for strategic communication, particularly in political discourse, marketing, and military operations, where message reinforcement is critical to achieving desired outcomes (Diakopoulos, 2019; Vaidhyanathan, 2018). The advent of sophisticated digital platforms has facilitated the emergence of highly targeted communication strategies that exploit cognitive resonance to maximize user engagement and influence public perception (Beer, 2017; Mayer-Schönberger & Cukier, 2013).

The proposed theoretical framework of cognitive resonance encompasses several critical components that distinguish it from traditional cognitive theories. Algorithmic personalization, which tailors content to users based on their online behavior and preferences, is pivotal in shaping public opinion and reinforcing cognitive alignment (Shin, 2020; Helberger et al., 2018). Emotional resonance is another fundamental aspect, as personalized content elicits strong emotional responses that further entrench individuals' belief systems and foster long-term engagement with specific narratives (Ionescu, 2023; Bucher, 2018). Additionally, echo chambers contribute to the homogenization of viewpoints by limiting users' exposure to diverse perspectives, reinforcing pre-existing biases, and reducing cognitive diversity within digital spaces (Pariser, 2011; Couldry, 2012).

This theoretical approach provides a comprehensive understanding of how digital platforms influence cognitive processes, offering valuable insights for policymakers, media strategists, and security professionals. By recognizing the mecha-

nisms through which cognitive resonance operates, stakeholders can develop more effective strategies to counteract the potential risks associated with algorithmic personalization, such as ideological polarisation and misinformation (Zuboff, 2019; Napoli, 2014). Moreover, the framework underscores the necessity of implementing regulatory measures to ensure transparency and accountability in algorithmic decision-making processes (Mayer-Schönberger & Cukier, 2013; Helberger et al., 2018). In light of the evolving digital landscape, future research should focus on empirical investigations that measure the impact of cognitive resonance across various sociocultural contexts and explore technological solutions that promote a more balanced information ecosystem (Shin, 2020; Napoli, 2014).

3. Methodology

This study adopts a qualitative approach to analyze the development of the cognitive resonance theory within the digital era. The research is based on content analysis, secondary data sources, and a comparative examination of existing theoretical models. The methodological approach aims to identify key patterns within personalized media ecosystems and provide a framework for understanding their impact on public perception and strategic communication practices. By focusing on available scholarly sources, media reports, and official documentation, the study seeks to offer a comprehensive understanding of the phenomenon under investigation. The qualitative content analysis involved an extensive review of secondary sources, including academic publications in media sociology, communication psychology, and information science. While qualitative analysis provides valuable insights into the theoretical underpinnings of cognitive resonance, future research should adopt empirical approaches to quantify its effects across different contexts. Experimental studies could be designed to measure the impact of personalized content on audience perception and behavioral change. At the same time, longitudinal research would offer insights into the long-term effects of algorithmic reinforcement on cognitive consistency. Such empirical validation would enhance the generalisability and applicability of cognitive resonance theory, providing concrete data to inform strategic communication practices. The regulatory landscape surrounding personalized content delivery is continuously evolving. Ethical concerns regarding data privacy and the potential misuse of algorithmic targeting necessitate a more robust methodological framework that accounts for regulatory compliance with standards such as GDPR and OECD recommendations. However, it is important to acknowledge potential limitations related to the subjective nature of qualitative analysis and the inherent biases in secondary data sources. The reliance on existing literature and case studies may introduce interpretative biases, as these sources reflect the perspectives and methodologies employed by their respective authors. Additionally, algorithmic changes and evolving digital media environments present challenges in maintaining a consistent analytical framework over time. Future research could address these limi-

tations by incorporating longitudinal studies and mixed-method approaches to enhance the robustness and generalisability of findings. Incorporating perspectives from media infrastructure studies (Ananny, 2018) helps contextualize algorithmic curation's role in shaping public discourse and audience perception. Future studies could incorporate mixed-method approaches that combine qualitative insights with quantitative data, such as sentiment analysis, engagement metrics, and A/B testing in real-world digital environments, to further strengthen the validity of findings. These methods would allow researchers to measure how cognitive resonance influences user interactions over time and across different demographics. Analyses of media campaigns related to military recruitment and political mobilization were also considered, emphasizing algorithmic content personalization. The selection of military recruitment and strategic communication as case studies is based on their reliance on algorithmically personalized messaging to influence decision-making. These domains exemplify cognitive resonance due to their targeted digital campaigns that reinforce audience predispositions, enhancing engagement. For instance, military recruitment strategies leverage social media algorithms to micro-target potential candidates based on psychometric profiling, optimizing outreach effectiveness (Diakopoulos, 2019). Similarly, strategic communication in political contexts relies on resonance mechanisms to reinforce ideological alignment through tailored content (Vaidhyanathan, 2018). These cases provide an ideal empirical basis for analyzing how digital media fosters psychological alignment in high-impact scenarios.

Furthermore, official reports from organizations such as NATO and the European Union were examined, which address information and communication strategies in digital environments. This approach facilitated the identification of dominant themes and narratives that contribute to cognitive resonance, particularly within military and political communication contexts. A comparative analysis was conducted to identify communication patterns across different geopolitical contexts. This included a review of military campaigns conducted in the United States, the European Union, and Croatia, drawing upon available case studies. Political campaigns and crisis communication strategies were also examined, comparing traditional media strategies with algorithmically driven approaches. This comparative lens provided insights into the distinctions between classical and digitally mediated communication strategies in achieving cognitive resonance. Given the limitations of the current qualitative methodology, future research should incorporate quantitative analyses to provide more profound empirical validation of the cognitive resonance theory. Sentiment analysis using Natural Language Processing (NLP) algorithms could be employed to assess public attitudes on social media platforms such as Twitter, Facebook, and YouTube. These techniques would allow categorizing content into positive, negative, and neutral sentiments, offering valuable insights into public engagement with personalized messages. Machine learning techniques, including decision trees and neural networks, could further contribute to understanding behavioral patterns across diverse media environments.

Additionally, survey-based studies could be employed to examine the impact of personalized media strategies by identifying behavioral patterns and perceptions among different demographic groups. These methods would offer a more precise understanding of the influence of cognitive resonance on strategic communication. Several limitations of this study should be acknowledged. The reliance on secondary data sources may restrict insights into user perceptions, limiting the ability to capture individual cognitive processes in real time. The absence of primary quantitative data poses challenges in empirically validating the proposed theoretical framework. Furthermore, the rapid evolution of technology necessitates continuous adaptation of the methodological approach to accommodate emerging trends in algorithmic personalization. Despite these limitations, the qualitative insights derived from this study provide a valuable foundation for further research and practical applications in strategic communication.

4. Findings and Discussion

The evolution of media environments, from traditional analog channels to highly personalized digital ecosystems, has significantly transformed how individuals engage with information (Albarracín & Wyer, 2000; Gillespie, 2014; Mayer-Schönberger & Cukier, 2013). While cognitive dissonance theory (Festinger, 1957; Festinger & Carlsmith, 1959) has long provided a robust framework for understanding psychological discomfort in the face of conflicting beliefs, contemporary digital platforms introduce new dynamics that necessitate a broader perspective (Brehm, 1956; Cooper & Fazio, 1984; Harmon-Jones & Harmon-Jones, 2007; Harmon-Jones & Levy, 2015). Theories of cognitive consistency (Abelson et al., 1968; Gawronski & Strack, 2012) have been foundational in social psychology, yet the emergence of algorithmically driven content personalization calls for a reassessment of these frameworks in the digital age (Andrejevic, 2013; O'Neil, 2016; Tufekci, 2015). This study's findings illustrate how cognitive resonance—whereby individuals experience psychological alignment with algorithmically curated content—offers a compelling alternative to dissonance, reshaping attitudes and behaviors in a seamless, reinforcing manner (Zuboff, 2019; Pariser, 2011; Couldry & Hepp, 2017). Digital algorithms now enable unprecedented levels of personalization, fostering a state of ideological comfort and reinforcing existing beliefs rather than challenging them (Helberger et al., 2018; Iyengar & Kinder, 1987; Napoli, 2014). This shift has been noted across multiple domains, from consumer behavior (Cummings & Venkatesan, 1976; Eagly & Chaiken, 1993) to strategic military communication (Gombar, *in Press*). By analyzing the interplay between cognitive dissonance and resonance within digital environments, this section delves into key aspects of the transition from conflict to alignment, examining the implications for strategic communication, public perception, and societal polarisation (Beer, 2017; Vaidhyathan, 2018; Shin, 2020). The visual representations provided in this study serve as a foundation for understanding the comparative aspects of both concepts and their practical applications across various fields, such

as military recruitment (Deci & Ryan, 1985; Ryan & Deci, 2000), political campaigns (Iyengar et al., 2009), and crisis communication (Bucher, 2018; Humphreys, 2018).

Furthermore, the digital ecosystem's reliance on algorithms for content delivery raises ethical and regulatory challenges. The reinforcement of biases and the creation of echo chambers (Putnam, 2000; Leurs, 2017) pose significant threats to cognitive diversity and open discourse (Diakopoulos, 2019; Kushnirovich, 2019). Studies show that exposure to algorithmically selected content can alter perceptions of reality, making individuals more susceptible to misinformation and manipulation (Kahneman & Tversky, 1979; Markus & Zajonc, 1985). In particular, emotional AI technologies are increasingly employed to enhance engagement by leveraging users' psychological profiles (McStay, 2018; Mogi, 2024). Ultimately, the transition from dissonance to resonance offers opportunities and risks, demanding a nuanced understanding of how digital media shapes cognitive processes and influences behavior. The insights gained from this study provide valuable contributions to contemporary discussions surrounding media effects and strategic communication (Tajfel & Turner, 1986; Moscovici, 1981), offering new perspectives on the evolving relationship between technology, cognition, and society.

4.1. From Dissonance to Resonance: An Evolutionary Shift in the Digital Age

The transition from cognitive dissonance to cognitive resonance represents a significant paradigm shift in understanding how individuals process and internalize information in the digital era. Traditionally, Festinger's (1957) cognitive dissonance theory posited that individuals experience psychological discomfort when confronted with contradictory information, leading them to adjust their beliefs or behaviors to restore cognitive harmony (Festinger & Carlsmith, 1959; Cooper & Fazio, 1984). However, algorithm-driven digital environments have altered this dynamic, fostering cognitive resonance—where individuals are exposed predominantly to information that aligns with their pre-existing beliefs, reinforcing rather than challenging their viewpoints (Pariser, 2011; Napoli, 2014; Couldry & Hepp, 2017).

Figure 1 below illustrates this evolutionary shift, depicting how media environments have evolved from cognitive dissonance, characterized by conflicting information and the need for resolution, to cognitive resonance, where personalized content fosters a sense of psychological alignment and ideological consistency. Isen and Levin (1972) demonstrate that positive emotional states can significantly enhance users' willingness to engage with content, suggesting that cognitive resonance mechanisms rely heavily on emotional appeal to sustain user attention.

Figure 1 highlights key differences between the two cognitive states. In the era of mass media, audiences were exposed to a broad spectrum of viewpoints, which often resulted in cognitive dissonance and subsequent belief adjustments (Brown,

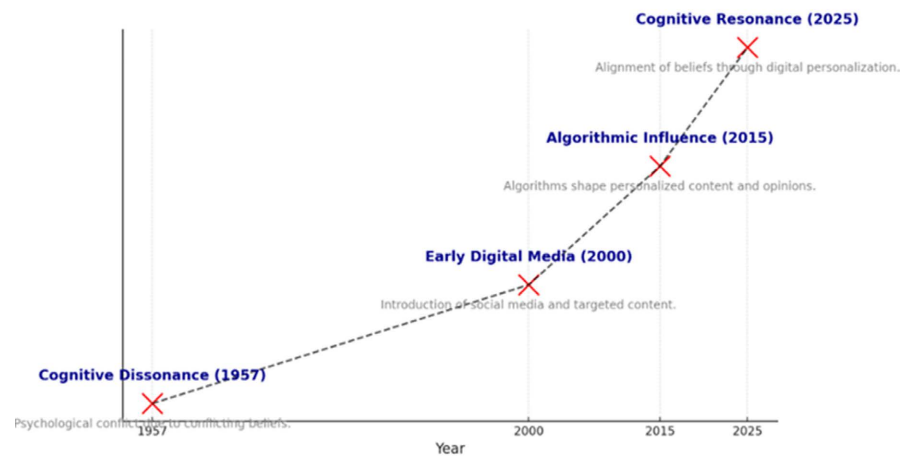


Figure 1. Evolution from cognitive dissonance to cognitive resonance.

1986; Eagly & Chaiken, 1993). In contrast, today's personalized digital ecosystems, driven by sophisticated algorithms, selectively curate content based on user preferences and past behaviors, thereby minimizing exposure to contradictory perspectives and reinforcing existing attitudes (Bucher, 2018; Helberger et al., 2018; Shin, 2022). This transition carries profound implications. While cognitive resonance facilitates deeper engagement and more effective strategic communication (Andrejevic, 2013; Diakopoulos, 2019), it also raises ethical concerns regarding the creation of echo chambers and the potential reinforcement of biases (Tufekci, 2015; Vaidhyanathan, 2018). The reinforcement of familiar narratives, without the counterbalance of diverse viewpoints, may hinder critical thinking and contribute to ideological polarisation (Iyengar et al., 2009; O'Neil, 2016). Ananny (2018) argues that digital infrastructures play a crucial role in shaping public access to information, creating a controlled ecosystem where the right to hear is increasingly determined by algorithmic gatekeeping. As illustrated in **Figure 1**, the transition from cognitive dissonance to cognitive resonance is marked by a shift in information exposure, where algorithmic reinforcement minimizes conflicting perspectives, thus enhancing psychological comfort.

Furthermore, empirical research suggests that cognitive resonance may contribute to the persistence of misinformation as individuals become increasingly resistant to information that challenges their worldview (Gawronski & Strack, 2012; Kahneman, Slovic, & Tversky, 1982). This phenomenon underscores the importance of regulatory measures and ethical guidelines to ensure that algorithmic content delivery promotes informational diversity and cognitive flexibility (Leurs, 2017; McStay, 2018). In conclusion, the shift from dissonance to resonance reflects a fundamental change in the media landscape, with opportunities and challenges for communication professionals. Strategic applications of cognitive resonance in areas such as military recruitment, political campaigns, and crisis communication must balance the benefits of engagement with the risks of over-personalization and ideological entrenchment (Gobar, in Press; Shin, 2020).

4.2. Two Sides of the Same Coin: A Comparative Analysis of Cognitive Dissonance and Cognitive Resonance

The juxtaposition of cognitive dissonance and cognitive resonance reveals critical differences in how individuals interact with information in contemporary media environments. While dissonance theory posits that individuals experience psychological discomfort when confronted with conflicting information, cognitive resonance suggests that digital environments foster psychological alignment through algorithmic reinforcement (Festinger, 1957; Eagly & Chaiken, 1993; Zub-off, 2019). **Table 1** highlights key differences between cognitive dissonance and resonance in media environments.

Table 1. Comparative analysis of cognitive dissonance and cognitive resonance in media environments.

Dimension	Cognitive Dissonance (Festinger, 1957)	Cognitive Resonance (Gombar, in Press)
Psychological Conflict	High conflict due to conflicting beliefs	Low conflict, alignment of beliefs
Behavioral Adjustment	Requires effort to resolve conflicts	Passive consumption of aligned content
Media Environment	Analog media (1950s-1990s)	Algorithm-driven media (2000s-present)
Role of Algorithms	Minimal or indirect role	Central role in content personalization
Outcome	Adaptation or change in beliefs	Amplification of existing beliefs
Historical Context	Post-WWII: Social psychology and mass communication (1950s-1970s)	Algorithmic Age: Rise of social media, polarization, and misinformation (2010s-2020s)

As shown in **Table 1**, cognitive dissonance typically arises in traditional media environments where individuals encounter diverse perspectives that challenge their beliefs, prompting reflection and potential attitude change (Albarracín & Wyer, 2000; Harmon-Jones & Levy, 2015). In contrast, cognitive resonance thrives in personalized digital ecosystems, where algorithms curate content tailored to users' existing preferences, reinforcing their attitudes and reducing exposure to opposing viewpoints (Pariser, 2011; Helberger et al., 2018). From a strategic communication perspective, cognitive dissonance encourages critical thinking and potential behavioral adjustments, making it a valuable tool for campaigns to challenge existing beliefs (Brehm, 1956; Cooper & Fazio, 1984). However, cognitive resonance offers a more efficient pathway to message retention and audience engagement, as content is aligned with users' cognitive frameworks, making persuasion more seamless and effective (Couldry, 2012; Shin, 2020).

Despite resonance's advantages in driving engagement, it raises concerns regarding echo chambers and the reinforcement of biases (Vaidhyanathan, 2018; Napoli, 2014). On the other hand, dissonance promotes cognitive diversity but may also lead to resistance and disengagement if the perceived conflict becomes too overwhelming (Iyengar et al., 2009; O'Neil, 2016). Understanding the nuanced interplay between dissonance and resonance is crucial for developing balanced communication strategies that leverage the strengths of both cognitive processes while mitigating their limitations.

4.3. The Resonance Cycle: How Algorithms Shape Perception

The cognitive resonance cycle is a self-reinforcing process in which algorithmic content personalization continuously aligns information with an individual's beliefs and preferences. This cycle, illustrated in **Figure 2**, showcases how personalized digital ecosystems foster engagement and long-term behavioral reinforcement.

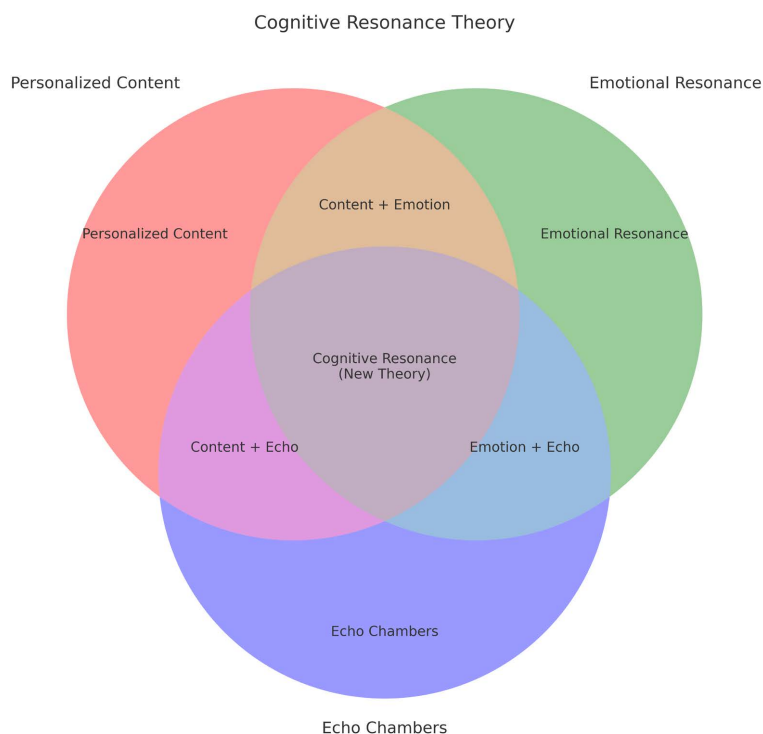


Figure 2. Cognitive resonance cycle (Source: The author developed based on ongoing research).

Figure 2 depicts the step-by-step process of cognitive resonance, beginning with initial exposure to curated content, which leads to emotional engagement and cognitive alignment (Bucher, 2018; Ryan & Deci, 2000). As users interact with such content, algorithms refine their recommendations, creating a feedback loop that strengthens existing attitudes over time (Kahneman & Tversky, 1979; Diakopoulos, 2019).

Key stages in the resonance cycle include:

- Personalised Exposure—Digital platforms analyze user behavior to present content that aligns with their prior interactions and expressed interests (Helberger et al., 2018; Shin, 2022).
- Emotional Connection—Personalised content elicits strong emotional responses, increasing user engagement and attachment to specific narratives (McStay, 2018; Ionescu, 2023).
- Reinforcement—Repeated exposure to similar viewpoints solidifies attitudes

and minimizes cognitive dissonance, leading to ideological comfort (Pariser, 2011; Gombar, in Press).

- Behavioural Influence—Reinforced exposure can shape decision-making and long-term behavior patterns (Putnam, 2000; Andrejevic, 2013).

While this cycle enhances engagement and message retention, it raises concerns about the potential for ideological polarisation and reduced exposure to diverse viewpoints (Tufekci, 2015; Leurs, 2017). Strategic communication professionals must balance leveraging resonance with ethical considerations to prevent over-personalization and misinformation.

4.4. Applications in Strategic Communication

The advent of algorithmically driven digital environments has revolutionized strategic communication by enabling highly personalized content delivery that fosters cognitive resonance. This transformation has significantly influenced sectors such as military recruitment, political campaigns, and crisis management, where the ability to tailor messages to specific audience segments enhances engagement and shapes public perception (Mayer-Schönberger & Cukier, 2013; Helberger et al., 2018; Shin, 2022). Personalized communication strategies, powered by big data analytics and artificial intelligence, provide opportunities to align messages with pre-existing beliefs, thereby reinforcing desired attitudes and behaviors (Ryan & Deci, 2000; Bucher, 2018). However, this raises concerns regarding ethical implications, such as ideological polarization, reinforcement of biases, and the potential suppression of dissenting viewpoints (Vaidhyathan, 2018; Tufekci, 2015; O'Neil, 2016). However, cognitive resonance has broader implications beyond strategic communication. In education, personalized learning platforms leverage cognitive resonance to adapt content to individual learning styles and preferences, enhancing engagement and retention. In healthcare, tailored digital interventions are increasingly used to reinforce health-related behaviors and encourage long-term adherence to treatment plans. Similarly, cognitive resonance is harnessed in business marketing to create highly targeted advertising campaigns that align with consumer preferences, fostering brand loyalty and influencing purchasing decisions. These applications highlight the versatility of cognitive resonance across diverse sectors, demonstrating its potential to enhance personalized experiences and drive meaningful behavioral outcomes.

Military organizations have increasingly employed personalized digital strategies to enhance recruitment efforts by leveraging cognitive resonance to align their messaging with the values and aspirations of potential recruits (Deci & Ryan, 1985; Diakopoulos, 2019). Military recruitment campaigns have emphasized patriotism, adventure, and career opportunities through algorithmic targeting and data-driven segmentation, fostering a sense of belonging and commitment without triggering cognitive dissonance (Brehm, 1956; Eagly & Chaiken, 1993). Case studies from NATO and the United States Armed Forces illustrate the effectiveness of such strategies in identifying and engaging suitable candidates through

social media analytics and personalized messaging (Putnam, 2000; Helberger et al., 2018). However, the ethical implications of these methods remain contentious, with concerns regarding the potential manipulation of vulnerable demographics and the ethical boundaries of persuasive communication (Gawronski & Strack, 2012; McStay, 2018). Empirical studies confirm that cognitive resonance enhances engagement and retention in strategic communication. Research on algorithm-driven military recruitment (Helberger et al., 2018) demonstrates that tailored messaging significantly increases enlistment rates by reinforcing pre-existing values. Political microtargeting further substantiates this effect; for instance, studies on the 2016 U.S. elections reveal how Facebook's algorithm amplified ideological alignment through resonance-driven content delivery, influencing voter behavior (Tufekci, 2015). These cases illustrate how resonance mechanisms optimize strategic communication by fostering long-term psychological alignment.

Political campaigns have also capitalized on cognitive resonance to micro-target voters based on their online behavior and ideological inclinations (Iyengar & Hahn, 2009; Pariser, 2011). Social media platforms such as Facebook and Twitter utilize sophisticated algorithms to present content that aligns with voters' pre-existing views, reinforcing their ideological commitments and increasing mobilization (Kahneman & Tversky, 1979; O'Neil, 2016). Cognitive resonance operates through three primary mechanisms in digital environments: 1) Algorithmic personalization, which selectively curates content aligning with users' pre-existing beliefs, minimizing cognitive effort (Pariser, 2011). 2) Emotional reinforcement, where AI-driven recommendation systems optimize content that evokes positive affective responses, reinforcing psychological stability (Harmon-Jones & Gable, 2018). 3) Predictive modeling, enabling platforms to anticipate user preferences and proactively adjust information flows to maintain cognitive alignment (Bucher, 2018). This structured reinforcement cycle reduces exposure to conflicting viewpoints, fostering sustained psychological harmony. The Cambridge Analytica scandal is a notable example of how data-driven personalization can be exploited to influence electoral outcomes through hyper-personalized content strategies (Andrejevic, 2013; Napoli, 2014). While such methods can enhance voter engagement and turnout, they simultaneously contribute to political polarisation and diminish the diversity of viewpoints individuals encounter (Beer, 2017; Vaidhyathan, 2018; Gillespie, 2014). There are well-documented cases where cognitive resonance has exacerbated ideological polarization and misinformation. The Facebook-Cambridge Analytica scandal demonstrated how microtargeted political ads reinforced ideological silos, limiting voters' exposure to alternative viewpoints (Vaidhyathan, 2018). Similarly, YouTube's recommendation algorithm has been linked to radicalization pathways, wherein users engaging with mildly controversial content are steered toward increasingly extreme material due to resonance-driven content curation (Tufekci, 2015). COVID-19 misinformation also thrived through resonance mechanisms, as AI-driven news feeds selectively promoted anti-vaccine content to skeptical users, reinforcing pre-existing fears (Zub-

off, 2019). These cases highlight the double-edged nature of cognitive resonance in digital media environments.

Furthermore, the ethical concerns surrounding the transparency of algorithmic decision-making in political messaging call for regulatory measures to ensure fairness and accountability (Kitchin, 2017; Mittelstadt et al., 2016). A broader theoretical perspective, such as those found in Van Lange et al. (2012), suggests that social psychology frameworks can provide insights into how personalized content influences long-term social cohesion and public opinion formation.

In crisis communication, cognitive resonance is pivotal in fostering trust and encouraging public compliance with safety measures (Humphreys, 2018; Shin, 2020). During public health emergencies such as the COVID-19 pandemic, governments and organizations leveraged algorithmic tools to disseminate targeted messages that reinforced health-conscious behaviors and countered misinformation (Tajfel & Turner, 1986; Markus & Zajonc, 1985). Personalized crisis communication strategies enable authorities to address the unique concerns of diverse demographic groups, ensuring that messages are culturally relevant and resonate with their intended audiences (Greenwald & Ronis, 1978; Cummings & Venkatesan, 1976). The conflict in Ukraine further illustrates how cognitive resonance has been employed to strengthen national unity and counter adversarial disinformation efforts through social media channels (Zuboff, 2019; Ionescu, 2023). However, the selective nature of algorithmically personalized content raises concerns about information bias, selective exposure, and the exclusion of critical perspectives that might challenge prevailing narratives (Leurs, 2017; Helberger et al., 2018). These challenges have prompted calls for more substantial regulatory interventions, such as the European Union's General Data Protection Regulation (GDPR), which aims to ensure transparency and accountability in algorithmic decision-making processes. Furthermore, organizations like the OECD have outlined ethical guidelines that promote fairness and non-discrimination in content personalization, emphasizing the need for algorithmic transparency and user empowerment. Ensuring adherence to such regulatory frameworks is crucial in mitigating the risks of exploiting cognitive resonance for ideological manipulation and reinforcing societal divisions.

Future directions in strategic communication should focus on mitigating the unintended consequences of cognitive resonance, such as filter bubbles and echo chambers, by incorporating mechanisms that foster cognitive diversity and critical thinking (Tufekci, 2015; Pariser, 2011). Policymakers and communication professionals must balance leveraging resonance for strategic gains and ensuring that communication remains ethical, transparent, and inclusive (Thaler & Sunstein, 2008; Shin, 2022). Further research should explore how AI-driven sentiment analysis and emotion detection can shape public perception and optimize personalized messaging strategies while maintaining ethical safeguards (Bucher, 2018; Mogi, 2024). Developing interdisciplinary approaches integrating insights from psychology, communication science, and artificial intelligence can provide more

responsible and practical resonance applications in the digital age (Couldry, 2012; McStay, 2018). Encouraging regulatory frameworks that promote transparency and accountability in content personalization practices will be essential to prevent the adverse societal effects of algorithmic-driven strategic communication (Napoli, 2014; Vaidhyanathan, 2018). The following regulatory interventions are essential to mitigate the risks associated with cognitive resonance:

1) Algorithmic transparency mandates—Platforms should disclose the logic behind content recommendation systems, ensuring users understand how their information environment is shaped (Helberger et al., 2018).

2) Diversity-by-design frameworks—AI-driven content curation should be designed to introduce a balanced mix of perspectives, reducing ideological silos (Napoli, 2014).

3) Regulatory oversight for political advertising—Given the impact of cognitive resonance on electoral processes, strict disclosure requirements should be enforced for microtargeted political campaigns (O’Neil, 2016).

4) Public digital literacy initiatives—Educational programs must empower users to engage critically with personalized content, reducing their susceptibility to algorithmic manipulation (Shin, 2022).

By combining legal, technological, and educational measures, policymakers can ensure that cognitive resonance serves democratic values rather than undermining them.

5. Conclusion and Implications

In the digital era, where algorithmically personalized content shapes public perception and social interactions, cognitive resonance emerges as a crucial framework for understanding how information is consumed, processed, and internalized. Traditional models, such as cognitive dissonance, no longer fully capture the complexity of contemporary information ecosystems, where users are increasingly exposed to content that reinforces their existing beliefs rather than challenging them. This transformation has profound implications for strategic communication, particularly in military recruitment, political campaigns, and crisis management, where aligning messages with audience predispositions offers significant strategic advantages. Cognitive resonance offers a novel perspective on how personalized digital content fosters psychological alignment, reinforces existing attitudes, and enhances user engagement. The ability to tailor content to the specific needs and preferences of the target audience provides substantial advantages for organizations aiming to communicate their messages more effectively. However, these benefits come with ethical and practical challenges, including the reinforcement of echo chambers, manipulation of public opinion, and risks to democratic processes. Furthermore, the over-reliance on algorithmic personalization may lead to a homogenization of perspectives, reducing cognitive diversity and critical engagement among audiences.

Therefore, communication professionals and policymakers must develop strat-

egies that balance leveraging the advantages of cognitive resonance and mitigating its potential risks. This balance requires adherence to regulatory frameworks, such as GDPR, which provides a legal basis for ethical content personalization, ensuring that user data is processed transparently and fairly. Furthermore, international bodies such as the OECD recommend best practices to foster algorithmic accountability and protect the pluralism of information sources. Organizations can incorporate such frameworks to align their strategies with ethical standards while enhancing public trust and engagement. This requires establishing robust regulatory frameworks that promote transparency in algorithmic decision-making, developing ethical guidelines for content personalization, and implementing tools to identify and counteract misinformation. Organizations should proactively monitor and evaluate personalized communication strategies' effectiveness while educating users on how algorithms influence their perception of reality. Moreover, ensuring ethical data practices and fostering algorithmic accountability will be critical in maintaining public trust and preventing misuse. Future research should focus on developing empirical models to measure the long-term impact of cognitive resonance across various contexts. Key factors to consider include audience engagement, behavioral change, and ethical boundaries. A promising avenue for future exploration involves the application of cognitive resonance in sectors, such as education and healthcare, where personalized content can play a crucial role in improving learning outcomes and patient compliance. However, the implementation of cognitive resonance in these fields presents significant challenges. In education, the over-reliance on algorithmic personalization may lead to a narrowing of pedagogical approaches, potentially sidelining critical thinking and reducing exposure to diverse perspectives. Teachers and educational institutions must balance leveraging personalized learning and ensuring students are exposed to various viewpoints and learning methodologies. Similarly, in healthcare, while personalized interventions can enhance patient adherence to treatment plans, there is a risk of algorithmic biases influencing medical advice, potentially leading to ethical and medical dilemmas regarding autonomy and informed consent. In business, excessive reliance on cognitive resonance-driven marketing strategies might contribute to consumer over-saturation and reduced trust in personalized advertising. Addressing these challenges requires a careful, multi-stakeholder approach to ensure that the benefits of cognitive resonance do not come at the cost of essential human factors in decision-making.

Additionally, understanding how cognitive resonance shapes consumer behavior in the business sector could provide valuable insights for developing more ethical and effective marketing strategies. In this regard, policymakers should explore the integration of regulatory frameworks, such as GDPR to establish more apparent accountability measures and ensure ethical algorithmic governance. By aligning with existing international guidelines, strategic communicators can proactively mitigate the risks associated with algorithmic personalization. [Van Lange, Kruglanski and Higgins \(2012\)](#) highlight the importance of understanding social

psychological theories to address the broader implications of cognitive resonance in shaping group norms and societal cohesion. Additionally, technological innovations—such as AI-driven sentiment analysis and personalized content moderation—could provide a more balanced approach to content personalization while preserving the pluralism of opinions and fostering a diverse information landscape. Future studies can pave the way for more responsible and effective resonance-based communication strategies by integrating insights from psychology, communication science, and artificial intelligence. Achieving this goal will require close collaboration between academia, industry, and policymakers to ensure a balanced approach that aligns technological advancements with societal values. By fostering interdisciplinary partnerships, stakeholders can develop evidence-based frameworks that promote ethical content personalization while safeguarding the public interest. This cooperation should focus on creating adaptive strategies that respond to the evolving digital landscape, addressing the complexities of algorithmic transparency, data privacy, and cognitive diversity. Only through such collaborative efforts can cognitive resonance be effectively harnessed to serve both commercial objectives and the broader needs of society.

In conclusion, cognitive resonance presents an innovative framework for understanding how algorithmically driven communication strategies can shape public opinion on an unprecedented scale. To maximize its positive effects and mitigate potential risks, an interdisciplinary approach—encompassing sociology, communication sciences, and information technology—will be essential for developing sustainable and ethically sound strategies in the digital age. As society grapples with the challenges of digital personalization, it is crucial to ask: Are we ready to balance engagement with responsibility, ensuring that technology serves the collective good rather than amplifying division? Key questions remain: How can the theoretical framework of cognitive resonance be extended beyond strategic communication to areas such as education and healthcare? What role does emotional resonance play in long-term audience engagement, and how can regulatory frameworks adapt to ensure a balanced information environment? Addressing these questions through empirical research and cross-disciplinary collaboration will ensure that cognitive resonance is harnessed responsibly and effectively in an increasingly complex digital landscape.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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