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Misinformation and Personality: Big-5 Trait Related to Misinformation Believing and Sharing

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Abstract: With the advancement of media and the proliferation of new digital platforms, the Internet has become the primary channel through which individuals access information. However, this shift has also heightened the likelihood of people believing and sharing misinformation. This article explores the relationship between personality traits and the propensity to believe and share misinformation. Through a comprehensive literature review, the associations between the Big Five personality traits and misinformation are analyzed and summarized. The findings suggest that extraversion is positively associated with the belief in and sharing of misinformation, whereas conscientiousness and agreeableness are negatively associated with these behaviors. In contrast, openness to experience and neuroticism do not show a significant relationship with misinformation, belief, or sharing. At the specific period, extroversion, openness to experience and neuroticism show the positive relationship with misinformation believing. Moreover, extroversion has positive relationship with misinformation sharing during epidemic period. Effective interventions to mitigate the belief in and sharing of misinformation can include strategies such as leveraging social norms, peer influence, and promoting critical thinking. However, these interventions should be tailored to align with different personality traits to maximize their effectiveness.

Keywords: Misinformation, Personality, Media psychology, Social media.

1. Introduction

In the digital age, social media platforms have become primary sources of information for millions worldwide. While they revolutionize communication and provide convenient access to information, they also foster the spread of misinformation--false or misleading content that rapidly circulates among users. Misinformation on social media ranges from harmless inaccuracies to dangerous falsehoods, particularly concerning public health, political and social issues. This is worrisome because algorithms prioritize user interest over the potential inclusion of sensationalized or emotionally charged misinformation. Once disseminated widely on social platforms, misinformation can shape public opinion, distort facts, and even trigger real-world consequences such as public panic or violence. There are several drivers for the spread of misinformation on social media, including easy content sharing, algorithmic echo chambers reinforcing pre-existing beliefs, and a low threshold for content creation and dissemination. In addition, cognitive biases like confirmation bias and the illusory truth effect contribute to people's belief in misinformation. These biases make individuals more likely to believe and share information that aligns with their existing beliefs or that they have

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encountered repeatedly, regardless of its accuracy. The rapid spread of misinformation is further amplified by popular algorithm-driven news aggregators and personalized content push services.

Addressing the problem of misinformation on social media requires a multifaceted approach. While numerous studies have investigated the characteristics of individuals susceptible to misinformation, there remains a significant research gap specifically examining the role of personality traits in this susceptibility. This article aims to focus on how the big five personality traits influence vulnerability to misinformation by drawing upon a comprehensive review of existing literature. By exploring the psychological mechanisms and characteristics associated with each of the big five personality traits, this review seeks to enhance our comprehension as to why certain individuals are more prone to believing and spreading false information. This knowledge can then be leveraged to design more targeted and effective interventions that consider individual differences, ultimately helping to mitigate the spread of misinformation in digital environments.

2. Misinformation

2.1. Occurrence of Misinformation

Algorithms prioritize content that is likely to generate clicks, shares, and comments, often amplifying sensationalized or emotionally charged posts, regardless of their veracity. Exposure to such content can lead users to unwittingly propagate misinformation by sharing it with their social networks, thereby perpetuating the cycle of misinformation. This process underscores the broader issue of how misinformation proliferates across digital platforms. As a result, misinformation can spread more rapidly and widely than verified information, reaching diverse audiences with varying levels of media literacy.

Misinformation is defined as false or misleading content shared by an individual who is unaware of its inaccuracy or misleading nature [1]. According to the Uses and Gratifications Theory, individuals engage with social media to fulfill various needs, including informational needs, personal identity needs, social integration and interaction needs, and entertainment needs [2]. These motivations can contribute to disregard for the veracity of the content being consumed. For instance, when individuals seek to fulfill personal identity needs, they are more likely to endorse and believe information that aligns with their pre-existing beliefs or viewpoints. This selective exposure to information often leads to a confirmation bias, where the accuracy or truthfulness of the content is overlooked in favor of content that supports their personal or social identity. Again, misinformation, in contrast to disinformation, is not defined by a deliberate intention to create or reinforce false beliefs about a particular topic or to inflict harm [3].

2.2. Misinformation in Specific Time

Misinformation is a pervasive issue that has been significantly amplified during the epidemic period, both in terms of the speed of its spread and the scope of its impact. The World Health Organization (WHO) has characterized this phenomenon as an “overabundance of information,” which encompasses not only unintentional inaccuracies but also deliberate efforts to spread false or misleading information to undermine public health responses and promote particular agendas [4]. This “infodemic,” as the WHO describes it, complicates the public’s ability to find reliable guidance and increases confusion and distrust.

During the pandemic, the rapid circulation of information about the virus, protective measures, and vaccines, facilitated by social media and other digital platforms, has led to a surge in both accurate and inaccurate information. Misinformation, in particular, has been widespread and has had significant consequences, often causing public panic and fostering skepticism towards health authorities and scientifically backed interventions [5]. For example, homemade remedies and

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preventative measures for epidemic period, which lacked scientific validation, were widely circulated on the internet, misleading the public about their efficacy and safety [6].

Moreover, the spread of misinformation was not limited to unverified grassroots sources. Prominent public figures, including former U.S. President Donald Trump, endorsed untested and unproven treatments, which further muddled public understanding and trust [7]. The influence of such high-profile endorsements can be substantial; research indicates that misinformation from influencer sources can undermine trust in official information disseminated by governments and health organizations [8]. This erosion of trust has far-reaching consequences, as it can reduce adherence to public health guidelines and lower the willingness to receive vaccinations, thereby hampering efforts to control the pandemic [9].

3. Personality

3.1. Personality Traits and Misinformation

Not everyone chooses to believe when confronted with unsubstantiated information [10]. Individual differences in people affect vulnerability to misinformation, such as cognitive ability, political ideology, motivation, gender, and age [11-12]. This article focuses on the relationship between personality and susceptibility to misinformation, with the personality research scale focusing on the Big Five personality.

Two meta-analyses have investigated the relationship between the Big Five personality traits and the spread of misinformation. In Study One, a total of 27 papers were included, and the DerSimonian-Laird model was employed to assess the effect of personality traits on misinformation sharing [13]. The findings indicated that extraversion had the strongest positive correlation with misinformation sharing behavior (β=0.05), while agreeableness demonstrated the strongest negative correlation with this behavior (β=-0.06). In Study Two, 60 articles were analyzed using a random-effects model to examine the relationship between personality traits and misinformation sharing [12]. This analysis also found a weak negative correlation between agreeableness and misinformation sharing ($r = -0.094$).

Extraversion is characterized by high levels of activity, sociability, enthusiasm, ambition, and talkativeness. Individuals with high extraversion are typically more inclined toward excitement-seeking and attention-seeking behaviors in social contexts. According to the Uses and Gratifications Theory, such individuals often use the internet to fulfill personal identity and social interaction needs. When they encounter information that aligns with their viewpoints or affirms their sense of identity, they are more likely to accept and share misinformation.

Conscientiousness is characterized by an individual's tendency to adhere to rules, fulfill responsibilities, and delay immediate gratification to achieve long-term goals. Individuals with high levels of conscientiousness are more likely to protect their long-term objectives from short-term temptations [14]. The negative correlation between conscientiousness and the belief in or sharing of misinformation can be explained through the lens of the Uses and Gratifications Theory. People with higher conscientiousness are more focused on achieving their long-term goals and fulfilling their needs through real-life accomplishments, which may reduce their likelihood of engaging with misinformation.

Similarly, agreeableness involves a tendency to be cooperative and maintain positive relationships with others. Individuals scoring high in agreeableness are typically more concerned with fostering harmonious social interactions and are less likely to engage in behaviors that could harm their social standing. The reluctance to believe in or share misinformation among these individuals can be attributed to the potential damage such actions could cause to their reputation and the embarrassment it might bring within their social circles [15,16]. Therefore, there is a negative relationship between

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agreeableness and misinformation sharing, as these individuals prioritize maintaining positive relationships during social interactions.

Openness to experience is characterized by a tendency and ability to seek, recognize, understand, and apply both abstract and sensory patterns of information. However, a study examining the role of intelligence, personality, interpersonal trust, ideological attitudes, and news consumption in evaluating fake and true news found no significant relationship between news discernment and openness to experience [17]. In this study, the researchers discovered that openness might be more accurately understood as comprising two distinct facets: openness to experience and intellect. These different facets could have varying associations with the classification of fake and true news. The findings indicated that the associations between both the openness and intellect facets and the misclassification of fake and true news were similar and non-significant, suggesting no strong link between these personality facets and the ability to discern between fake and true news. In other words, one part of people with high levels of openness is more likely to differentiate between true and false information before deciding to share it; another is not.

Neuroticism is characterized by traits such as anxiety, depressive mood, and emotional instability. A study examining the Big Five personality traits in relation to social media use, particularly on social networking sites, especially SNS, found that neuroticism has a weak correlation with some SNS activities [18]. This finding suggests that individuals with high levels of neuroticism may use social media as a way to alleviate their emotional distress by engaging in conversation or seeking social connection. Additionally, other research indicates that people with high neuroticism are more likely to blog and post their thoughts online [19]. In other words, individuals with higher levels of neuroticism tend to use social media to fulfill their emotional needs and focus on their own emotional states, which reduces the likelihood that they will casually skim through information on social media platforms. Consequently, this focus on emotional regulation may decrease the exposure to and sharing of misinformation among those with high levels of neuroticism.

4. Conclusion

Understanding the relationship between personality traits and the belief in and sharing of misinformation is crucial, particularly during critical periods such as epidemics. Investigating how individual differences contribute to susceptibility to misinformation enables the development of more targeted interventions for specific groups. Among the Big Five personality traits, extraversion is notably associated with a greater likelihood of believing and sharing misinformation. Conversely, individuals with high levels of conscientiousness and agreeableness are less likely to be influenced by misinformation and less inclined to share it. Several studies showed that during the epidemic period, it was observed that not only individuals with high levels of extraversion were susceptible to misinformation, but those with high levels of neuroticism and openness to experience were also more prone to believing false information. To effectively intervene in the spread of misinformation, several strategies can be employed that leverage psychological and social mechanisms. Future research could explore additional factors that interact with personality traits to influence the belief in and sharing of misinformation.

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