

# Cognitive Biases and Gender Opposition: Analysis from the Perspective of the Individual, Community, Society and Platforms

Hanxi Gao\*

Asheville School, 28806 Asheville, United States

**Abstract.** Social media makes it possible for the public to communicate and share conceptions. As a hot online topic, gender discourse has received huge attention and discussion from different users. Cognitive biases led to the polarisation of public opinion, and gender opposites seem to become mainstream on social media. Based on social identity theory, framing theory, and cognitive bias theory, this paper explores the role of cognitive bias in social media and explains whether it amplifies gender conflict. This study argues that the dissemination of gender related issues is influenced by preconceived cognitive frameworks, leading to biases in public interpretation. These individual cognitive biases exacerbate the opposite of gender discourse, and are amplified on social media. From an interdisciplinary perspective of psychology and gender studies, cognitive biases influence public conceptions and attitudes towards gender issues. This study not only provides a theoretical explanation for understanding gender opposites on social media but also offers insights for platform governance and public opinion guidance.

## 1 Introduction

Social media is an important part of daily life, providing a platform where people can interact with each other, share their interests, and find commonality with each other [1]. Its diversified functions shape the way people communicate and interact with one another. There are many functions and abilities that people use the internet for, but all these functions are based on the interactions between people. When people communicate, there will always be some consensus and disagreement regarding the different positions and opinions. Disagreements might cause conflicts that, if not correctly solved, will exacerbate the contradiction. One typical example is gender opposition. Social media is a crucial place where gender discourse is spread; as it helps to promote interpretations on gender discourse, it also amplifies the controversy of this topic. As gender opposition has been brought up constantly on social media these days, the discussion online grows very intense and polarised for this discourse. Under the stereotypical definition of sex in society, men are classified as more dominant and competitive, while women are more caring and obedient. Importantly, whether traditional gendered discourse patterns persist in online social network environments is central, because

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\* Corresponding author: [gaom27@ashevilleschool.org](mailto:gaom27@ashevilleschool.org)

this question is crucial not only for information research but also for gender studies, which widely examine whether the web and social networks serve as social equalisers [2]. Though social media promotes gender equality, the stereotypical views on men and women are still there. These stereotypical thoughts are a main reason that gender opposition is intensified. Another cause is cognitive bias. Humans are prone to making biased judgments and inconsistent decisions [3]. On the internet, all kinds of people are allowed to interact with each other, so the barrier to communication is low, which accelerates conflicts caused by cognitive bias. This research will analyse the effect of cognitive bias on gender opposition on social media, and look into which cognitive bias affects gender opposition and how much it aggravates gender opposition. This article combines a psychological perspective with gender research to explore how social media influences the public's gender cognition and social attitudes through cognitive bias mechanisms.

## **2 Literature review**

Many cognitive biases have been studied by previous research; among them, the ones that impact people online the most are confirmation bias, fundamental attribution error, and bandwagon effect. Confirmation bias is a cognitive phenomenon which has been ingrained in the patterns of an individual's conception, influencing the view of reality. People tend to accept and receive content and information that aligns with their existing beliefs, and ignore or undervalue evidence that contradicts them [3]. Barfuss indicated a similar argument that humans show a preference for information that connects with confirmed beliefs rather than those contents they disagree with [4]. People have thoughts or beliefs that are manipulated by the internet, and those beliefs and thoughts can highly impact someone or society. When people use the internet to search for information about polarised or debatable topics, the outcomes they encounter may affect the formation of viewpoints and final actual decisions, thus causing adverse consequences for individuals and society. Attribution error refers to the bias that arises when the public incorrectly accepts information that influences individual behaviour, and it plays an important role in conflict management. People tend to overestimate the role of personal characteristics and underestimate the role of external environments when evaluating their own or others' behaviour, thus blocking collaborative learning and knowledge sharing [5]. For example, when talking about specific topics, the public often follows the crowd and assumes that the opinions that the majority agrees on must be correct. This can result in the "bandwagon effect", where people adapt to the majority opinion, which then leads to a refusal to express a minority view. The research by Nadroo explained the interactions between parasocial interaction, the bandwagon effect and substitution expression, holding a view that all these elements influence people's willingness to make online purchases [6].

Heated discussions on gender equality are crucial for promoting an equitable society. An increasing number of research focuses on the current status of women in modern life. One study of the usage and influence of the internet on Pakistani women shows the result that their usage is extensive but highly impacted by their culture [7]. Their finding points out that the purpose of women using social media is to get information, rather than expressing their personality and emotions. Women's distrust of online social media confirms the current social bias on gender issues, and intimate relationships are crucial for improving women's equality, mental health and wellbeing. Although online platforms provide women opportunities to pursue equal rights, enabling them to socialise and express themselves via social media, the content can bring a more severe psychological harm to women, especially those content with aggressive words. Everyone indeed has the chance to discuss various themes and topics, such as personal stories, political issues, and scientific information. Some of them were created by feminist actors, while the others may be standing from a different

perspective than those who support women. Despite increasing attention being paid to social equality, not only is the issue of gender opposite highly controversial, but transgender people and other gender diversity communities still face discrimination. Gender-diverse groups lack basic protection both online and in daily life, leading to them being deeply affected by stereotypes and distress.

Research reveals that social media can be a source of support and connection, but it can also cause negative harms such as sleep deprivation and precocious puberty. With the advancement of the digital world, more and more young people are starting to use social media for self-expression and social interactions. Many people have expressed their opinion, believing that the usage of the internet among young people can not only affect society but also every individual themselves. This is similar to previous public concerns about the impact of emerging media forms such as video games, rock music and television on young people. Unlike these media forms, social media is highly interactive and personalised, creating a diverse and complex environment that young people accept. More importantly, the potential negative impacts of social media make research on mental health issues among young people essential [8]. If they are not taught the correct way to use the internet, it can be really dangerous for young people. These studies made in the past few years mainly base their research on the analysis of gender discourse, but have a lack of interpretation of psychology in the analysis. Therefore, with the combination of psychological theories, the understanding of gender discourse can be more precise and comprehensive.

### **3 Theoretical framework**

Social Identity Theory, as an important theory in psychology, mainly highlights the combination of personal identity and social identity. Tajfel and Turner came up with this theme in 1979 and assert that an individual's behaviour can be explained based on the groups to which he belongs or the communities to which he does not belong [9]. Social identification, social categorisation and social comparison are three major components of mental processes in social identity theory. Therefore, discovering positive connections between individuals and specific groups can help build up an individual's self-esteem [10]. Individuals are highly impacted by others, and in communications and interactions with society, can influence one's thoughts on how they choose to act or say. Social identity theory emphasises that a person's self-concept can be manipulated or derived from their membership in a social group and how people establish their opinion on society's connection with themselves. Social media is a place where individuals can interact with each other, and people find a sense of belonging when similarities are found in a group, which can trigger them to categorise themselves in this group. Under the society's definition of gender, people will be separated into two groups, and as this separation deepens, the opposition between females and males will become more extreme.

Another theory that also plays a role in gender opposition is the Framing theory. The issue addressed herein is the sociological theory of the presentation of self in everyday life, or the presentation of performance and social interaction rituals [11]. Framing theory focuses on the essence of content dissemination rather than specific topics, presenting how sources were defined and constructed. It points out that the way news and content are presented constructs a frame for the information, influencing how people process it. Goffman argues that both natural and social framing help individuals interpret data, allowing them to understand their experiences within a broader social context [11]. Whether people realise it or not, everyone brings their own frame to daily life, and it is an unavoidable part of human communication. Moreover, framing theory emphasises how media outlets attract public attention to specific topics, often through deliberate choices by content creators. It examines how media outlets, as gatekeepers, organise and present the viewpoints, events, and topics they report. Therefore,

social interaction rituals are always associated with the class of events which occur during co-presence and by virtue of co-presence. The ultimate behavioural materials are the glances, gestures, positionings, and verbal statements that people continuously feed into the situation, whether intended or not. These are the external signs of orientation and involvement, states of mind and body not or binarily examined with respect to their social organisation. This theory posits that people use “frame” to organise their experience and social interactions. These frames are a socially defined definition of reality, which acts like a framework that points out some aspects of situations while also excluding other parts [12]. This way of thinking plays an important role in people’s opinions on the world. It emphasises the way that people think by some key parts, creating these frames in their life, analysing these frames, putting this frame into society and how it aligns with social beliefs and values, and highlighting certain parts of the frame which impact them to lean toward one aspect more. This theory can be seen in gender oppositions when people are reinforced by some point of view several times on social media, which can lead to more attention being put on this thought. These involuntary reinforcements can completely change a person’s perspective on something.

Cognitive bias theory also explains the possible causes of the emergence and exacerbation of gender antagonism in the media, focusing on how people choose to think, behave, and make decisions [13]. This theory believes that individuals make decisions based on two types of thinking. First, intuitive thinking, which involves a lack of deep thought. Second, deliberative thinking, in which people slow down and consider a comprehensive approach before deciding. Driven by profit, many techniques in social media could manipulate public perception and behaviours, ultimately persuading audiences to agree with what they desire. However, when most people browse and consume information online, they do not verify the accuracy of the content, comments, opinions, or positions they receive. This is where cognitive biases arise. When a new concept is combined with other concepts they already identify with, people tend to accept it more quickly and place greater trust in it.

## **4 The impact of cognitive biases on individuals, communities, society, and platforms**

From the perspective of the individual level, cognitive bias could manipulate one’s thoughts and form opinions that are too extreme. When people browse the Internet, a huge amount of information and messages are presented to them at high speed. Online users choose to accept some of it, mainly the information they are familiar with. First of all, they can quickly find connections of this information to one that they already have in their brain. Secondly, they do not have to think that much about their opinion on this information since they already have it categorised as either false or true in their brain, so they are dealing with things that are well known. On the other hand, new information is unfamiliar to people, and they might not be interested in this information, which makes them less patient in receiving it. When people receive this new concept, they are forced to start their deliberate thinking strategy, which takes more time and effort. Through this process of going online can create some bias in their mind. For example, a woman wants to search about feminism, but the videos or answers she receives are mainly focused on patriarchy, which might cause her to approach gender equality with less accuracy due to the reinforcement of negative thoughts on patriarchy. Confirmation bias leads people, especially social media users, to seek out, browse, and interpret information that aligns with their existing perspectives, limiting their understanding of gender conflict. Ignoring contradictory information reinforces self-perception biases and exacerbates gender conflict. This cognitive bias causes users to unconsciously cling to preconceived notions when evaluating information and making

decisions, impairing objective judgment. The accelerated spread of gender issues online has led to a blurring of gender equality content and, conversely, amplified conflict.

From the perspective of the group level, the polarisation of gender opposition aggravates as people find belonging in parts or all the aspects of the difference between the two genders. As small conflicts online are magnified, the opinions of both genders about each other are harder to change. Without accurate and comprehensive information given to people, their biased comments will affect others who are clueless about this discourse. Then, as the internet presents more of this topic to someone, they will be manipulated by these inaccurate comments, and that just makes the polarisation worse. For example, on many different apps, discussions on gender start normally and are mostly accurate, but then people start to have bigger conflicts and post stereotypical comments. Males' thoughts might be that feminism is nonsense, and it makes women mad. Females might think that males are so selfish and arrogant. But both of these extreme thoughts can be diluted by understanding more about others and receiving various information online. The reason why people are not that willing to do so is that it activates their deliberate thinking, and the experience on the internet will be less interesting and attractive, which cannot benefit the media companies. Online, the social identities of different groups are reinforced, particularly between men and women, who form opposing camps based on their own interests and perceptions. Driven by impulsive comments and radical rhetoric, gender issues often devolve into verbal abuse and attacks between different gender groups, leading to group polarisation. Previously moderate views become radicalised in the group atmosphere, leading to more intense online male-female confrontations. Gender tensions are further expanded in this situation.

From a societal perspective, the extremism of gender tensions impacts the social atmosphere and political decision-making. First, gender conflict discourse shapes public opinion. As a significant social issue in the media and online landscape, gender tensions are closely linked to every social media user, garnering widespread public attention. Through media and online dissemination, conflicts and antagonisms between men and women are amplified, with representatives of different gender groups identifying based on their own positions and social identities. Conflicting content and stereotyped narratives reinforce a single narrative for a particular group. As gender conflict discourse is constantly exposed, social media users form emotionally charged opinions and exacerbate group polarisation. Public opinion struggles to maintain rational discussion and instead becomes a channel for emotional venting, undermining the balance of the online ecosystem and harmonious social discourse. In this context, social policymaking is also influenced by public opinion. Driven by public opinion, some policies may deviate from objective rationality and fail to achieve substantive improvements in gender equality. Furthermore, differences in gender equality perceptions arising from intergenerational communication warrant attention. Different ages and generations have different understandings of equality issues, leading to communication barriers within families and education. Some viewpoints, such as the conservatism of older people and the radicalism of younger people, are further stereotyped. In general, any discussion of gender that may appear in the media affects the functioning of society.

From a platform perspective, big data algorithms and platform recommendation mechanisms amplify cognitive biases and oppositional discourse, potentially leading to more serious cognitive biases. If a platform fails to capture public attention and cannot allow everyone to satisfy their emotions, the users will then lose interest in using the application. To keep the platform working and maximise the benefit, they will choose to show people what they want to see to make people secrete dopamine that will make them have the urge to open the app. As an increasing number of people learn more about what they want to learn, their bias will increase, causing the gender opposition to gradually be polarised. For the platform, all they have to do is let everyone receive the posts that are most controversial and emotional, so people can pay more attention when they see their perspective being in the fight

with another. Then, more comments will be posted about this topic, and the platform can profit from it.

## **5 Implications**

The implication of these psychological theories in the analysis of gender opposition is significant in finding the real cause of the increase in excrement in these conflicts. Gender opposition is based on interactions between people, and when people interact, the intervention of psychology becomes helpful. The usage of the combination of psychology and analysis of gender opposition also helps in the advancement of interdisciplinary research. This article offers practical implications for gender equality education, social media governance, and public discourse development. Schools and educational institutions can play a guiding role by enhancing students' understanding of gender equality through curriculum and campus culture, thereby reducing stereotypes. This can foster a more inclusive attitude among students and help them rationally consider gender differences and social controversies. This article also offers recommendations for policymakers. For example, improving mechanisms for regulating gender discourse on social media and online platforms can help foster a harmonious and equal online environment and prevent the excessive spread of gender-biased rhetoric. Moreover, the media plays a crucial role in addressing gender-biased issues. It is recommended that they exercise a responsible attitude and avoid polarising and emotionally charged expressions when reporting on gender issues.

Some actions that can be taken are to teach students to think before they believe in the things they see online and to educate them to have a positive attitude toward gender discourse. That way, it is possible to stop the increase of gender composition at the start; this is the time when it is not that hard to ease one's extreme thoughts. Changes on the internet can also be adopted to stop the widespread spread of this topic online. The government can force some extreme posts to be deleted; that way, fewer people will be harmed by these comments. Then, with the combination of social media controlling the spread of people's thoughts will be comforting and the whole society can lead to a better development.

## **6 Conclusion**

Cognitive bias is an important mechanism in gender composition. This research explained how social identity theory, framing theory and cognitive bias theory were employed in this topic, discussing their influence on gender composition online. Next, it analyses the role it plays in gender composition from four different levels. Lastly, it presents some improvements the society can make using the analysis to help moderate the negative effects of gender compositions. This study provides some possible strategies that can be applicable in real life, such as lowering the frequency of contact with posts containing extremely aggressive content. By doing these actions, research can be done on the data comparison of different countries and focus on the specific parts that need to change for different countries. These small changes are significant since different countries' cultures or levels of education are not the same, so the level of change differs to match the country. These actions can be the key to a better society everywhere. Furthermore, future research is encouraged to use an interdisciplinary approach to find a more comprehensive result. This can also decrease the error and lack of evidence in research, providing an accurate report. Different methods can be used to reduce bias in research, because the less bias there is, the more accurate and significant the results will be.

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