The Influence of Political Memes on Belief on Fake News: A Dual Process Theory Perspective

By

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Abstract

Against the backdrop of the digital revolution and the "memefication of politics" (Dean, 2019), so called political memes have become ubiquitous all-over social media. While political memes have allowed for increased political engagement, they have also become a part of political propaganda and misinformation. The paper addresses the following research question. Are people exposed to political memes more likely to believe in false information in political memes? Building upon the works of dual process theory and visual processing fluency, this thesis hypothesizes that political memes have the ability of producing a "truthiness effect" which activates heuristic thinking, resulting in individuals becoming more gullible and influenced by political memes. To tackle this hypothesis, a survey experiment was conducted online (n =134). The results showed that the null hypotheses cannot be rejected.

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1 Introduction

Internet memes are like Forest Gump. Ostensibly they are trivial pieces of popular culture; yet, a deeper look reveals that they play an integral part in some of the defining events of the twenty-first century

– Limor Shifman, *Memes in digital culture*

Ever since the acrimonious 2016 U.S. election, Internet political memes have become pervasive over various social media platforms. Having noticed the ubiquity of political memes online during the 2016 election, the Washington Post described the election as the "most-memed election in U.S. history" (Heiskanen, 2017, p.2). As the "memefication" (Dean, 2019) of politics continues, Internet political memes have provided one important function to ordinary citizens which is the participatory function of Internet memes (Lalancette & Small, 2020). "Fast-food media" as Denisova (2019) refers to Internet memes, Internet memes have made complicated political issues easier to digest for the audience and "allow people to participate in politics in easy, accessible and entertaining ways" (Lalancette & Small, 2020, p.308). Internet memes have thus allowed ordinary citizens to make their political views more clearly in the public sphere and have become an integral part of the youth's participation in politics (Penney, 2017). It has levelled the playing field so to speak. While Internet memes have been playing a political participatory function for ordinary citizens, they have become a tool for political propaganda and manipulation which raises grave concerns. The most notable example comes from Trump's 2016 presidential campaign when he deployed the Pepe the Frog meme which was the symbol of the "alt right" movement that maintained ideologies such as white nationalism and neo-nazim (Glitsos and Hall, 2019). Many of

the alt-right movement member claim to have memed Trump to the White House (Marwick & Lewis, 2017). Besides the alt-right movement's usage of Pepe the Frog meme, the Russia-based Internet Research Agency (IRA) was active in spreading Internet memes to sway the 2016 election in Trump's favor (Frenkel and Benner, 2018). Given that approximately 68% of Americans used social media to get news during the 2016 U.S. primary, it is highly palpable that a large portion Americans were exposed to such propagandistic content in the form of Internet memes.

Apart from Trump's campaign, different kinds of populist and extremist actors ranging from the American alt-right to the German PEGIDA movement have taken notice of the potency of Internet memes and have subsequently incorporated them into their digital arsenal (Lamerichs et al. 2018; Haller and Holt, 2019). *The Daily Stormer,* an alt-right neo-nazi group even has day called "Memetic Monday" where antisemitic Internet memes are shared extensively on Facebook and Twitter (Marwick & Lewis, 2017). Internet memes have also been co-opted by neo-authoritarian states such as China to counter protest activities and further control the public sphere (Repnikova and Fang, 2018). In some ways, political memes today are like leaflet propaganda dropped from aircraft a century ago. The difference is that today, they have appeared on social media platforms disguised in the form of political memes (Nieubuurt, 2021). As one political meme researcher succinctly puts it, "memes have become a means of spreading propaganda, and are bite sized nuggets of political ideologies" (DeCook, 2018, 485).

Political memes have thus evolved into modern day propaganda in the 21st century and their ability to evoke strong emotions through their visual attractiveness raises questions such as its influence on political attitudes (Shiffman, 2013). Originally, the term *meme* derives from Richard Dawkins (1989) and referred to a cultural unit that gets passed down through person to person through imitation. The term has then been appropriated by the Internet sphere to refer to a

widely propagated unit of ideas or information. While there are various forms of Internet memes out there, Internet memes are commonly characterized as an image macro consisting of a "text script superimposed over an image" (Huntington, 2015, p.79). Zooming in on this visuality of Internet memes, it is critical to point out that the visuality of Internet memes could play into the hands of misinformation operations. In general, research shows that visuals are more impactful than text in that they are more understandable, memorable and emotion evoking (Entman, 2004; Joffe, 2008; Gross, 2008). What is more, people tend to process visuals with less skepticism (Messaris and Abraham, 2001). "Seeing is believing" as the saying goes, captures the essence of the "truthiness effect" engendered by photos, whereby individuals tend to nod along with minimal skepticism due to the relative cognitive ease at processing them (Newman et al. 2012; Newman and Zhang, 2020). This "truthiness effect" produced by photos can be taken advantage by various actors with malicious intentions as evidenced by the American alt right movement and its utilization of Internet memes (DeCook, 2018). Similarly, since the 2016 U.S. election, the Russia based Internet Research Agency has consistently employed political memes in their disinformation campaign to exacerbate political divisions in U.S. society (DiResta et al. 2019). In recent years, visuals, combined with political memes, have emerged as essential tools for shaping the thoughts and beliefs of individuals, aiming to sway their hearts and minds.

Despite the powerful impact that visuals have on cognition and its danger in altering our beliefs and attitudes, there is a death of studies done on measuring the actual impact on our political attitudes, not to mention the impact of political memes. In general, research on visuals has lagged the text only aspects of social media research, mainly focusing on Tweets (Highfield & Leaver, 2016). Even when research is carried out on the Tweets' impact on political behavior, as pointed out by (Bastick, 2021), it has mainly focused on not political attitude itself but the propensity of

individuals to reshare misinformation tweets (Guess et al. 2019). Therefore, the jury is still out in understanding the impact of political memes on our belief and attitudes.

My thesis thus aims to address a significant gap in social media research, specifically the impact that political memes have on our beliefs. Despite their increasing prevalence on online political discourse, they have been long dismissed as lacking any real public significance (Katz and Shiffman, 2017; Nissenbaum & Shiffman, 2018). Political memes are not just simply "cat pictures with words" but could distort our truth perceptions through their visuality. Therefore, through my research, I aim to shed light on this crucial area of study and provide insights that can inform our understanding of the role that political memes play in altering our truth perceptions (Galipeau, 2022; Huntington, 2019; Klein, 2019).

The thesis aims to ascertain political memes "truthiness effect" on individuals. In other words, whether political memes impact our assessment of truth. To that, a survey experiment leveraging Qualtrics will carry out to measure the impact of Internet political memes in the context of the United States. Participants will be collected from the Facebook platform using a monetary incentive. The structure of the thesis will be as follows. First the literature review will cover fake news, conceptualization of Internet memes followed by the truthiness effect of political memes. Based on the literature review, the expectations of the political memes "truthiness effect" will be outlined. The theoretical section will be then succeeded by the methodological section where the dual process theory will be covered.

2. Literature Review

2.1 The Social Media Paradigm and Fake News

The digitization of news and social media has rapidly transformed the media environment from a vertical paradigm to a horizontal paradigm thereby allowing Internet users to become the main disseminators of news in the new digital era. As Greifeneder et al. (2020) note, we have entered a new era where "news dissemination is no longer an access restricted privilege but available to all (internet users)" (Greifender et al., 2020, 4). Social media has thus completely transformed the media environment, ushering in an abundance of information. News today hardly goes through a rigid filtering process that traditional media gatekeepers once had control over in the past. Before the digitalization of news, traditional information intermediaries such as experts and journalists kept tabs on the information flow to prevent inaccurate information from disseminating (Metzger & Flanagin, 2013). The advent of the Internet has removed such intermediaries, lowering the cost of production and dissemination of news altogether. The advent of the Internet has allowed news and content to be created among ordinary citizens and relayed among users without going through significant third-party filtering nor fact checking. Today, there is no guarantee that all information online is true or trustworthy. The digitization of news has thus challenged the traditional definition of news, as social media platforms have enabled lay people and non-journalists to reach a mass audience which has subsequently raised concerns about the quality of news (Tandoc Jr et al., 2018). Indeed, in a media environment where there are few standards for quality control and evaluation online, in which virtually anyone can post, "digital information may be easily altered, misrepresented, or created anonymously under false pretenses" (Metzger & Flanagin, 2013, 212). This type of false or misleading information is commonly

referred to as “fake news”, “misinformation” and “disinformation”. While the three terms are used interchangeably in contemporary discourse, they have overlapping and shifting definitions. The terms are primarily distinguished by the question of “intent”. If the information has an intent to deceive, then it is called “disinformation” whereas misinformation may be inadvertent and unintentional (Tucker et al. 2018). “Fake news” which entered the common vernacular since the 2016 U.S. election is often put under the category of disinformation as they mimic the look of real articles with an intent to deceive (Tucker et al. 2018). Regardless of the distinctions between the three terms, they are all rooted in the same concept of false information spread in the guise of accurate information (Lyons & Guess, 2020).

The ramifications of fake news have become apparent with the overflow of fake news during the recent Coronavirus pandemic. For instance, fake “cures” of the virus which involves gargling of lemon or salt water or injecting yourself with bleach proliferated on various social media platforms (World Health Organization, 2020a). Some other popular fake news sources about the pandemic claimed that the virus was deliberately created in a lab in Wuhan (Andersen et al., 2020). The danger is that people fall for these types of false news as one report demonstrates that 31% of U.S. population in March 2020 agreed that the Coronavirus was deliberately created and spread (Uscinski et al., 2020). The proliferation of this type of false information regarding Coronavirus consequently led the Director General of the World Health Organization to call the situation as an “infodemic” (United Nations, 2020). The so called “infodemic” has had serious societal consequences as it has disrupted people's risk perception of the virus (Krause et al., 2020). For example, research suggests that misinformation of the Coronavirus may have reduced mask wearing and social distancing (Ioannidis, 2020). In some cases, the propagation of misinformation related Coronavirus has contributed to mob attacks (Depoux et al., 2020) and acts of vandalism

(Spring, 2020). In an extreme case, fake news on curing the virus led many civilians in Iran to drink counterfeit alcohol containing toxic methanol, causing more than 300 deaths and 1000 hospitalizations (Love et al., 2020). The influence that fake news has on altering people's beliefs and attitudes has come to light especially with the recent Coronavirus pandemic.

Regarding the political spectrum, misinformation spread in a large-scale during election times has raised serious concerns over the impact of misinformation on influencing one's political beliefs and therefore, swaying important political elections and referendums. The most exemplary example comes from the 2016 US presidential election when fake news proliferated on various social media platforms. During the year 2016, approximately 62% of the U.S. adults got their news from social media (Gottfried and Shearer, 2016). Among those who used social media to obtain news, one research estimates that approximately 1 in 4 Americans visited a fake news website one month prior to the election (Guess et al, 2018). Allcot and Gentzkow (2017) estimate that a specific set of fake news was shared 38 million times 3 months leading up to the U.S. election with around 30 million of those fake news stories favoring Trump. In a similar study, Guess, Nyhan and Reifler (2018) estimates that 93.5% of fake news shared online during the 2016 election campaign were pro-Trump in orientation. Due to the prevalence of pro Trump fake news during the 2016 US presidential election race, it was alleged that fake news helped Trump win the election (Allcot and Gentzkow, 2017). What is more concerning, fake news during this election propelled some individuals to take extreme action like that of the cases of vandalism due to coronavirus misinformation. To mention one example, just one month before the U.S 2016 election, an armed man walked into a pizza restaurant and opened fire. While no one was hurt in the event, his intention was motivated by a fake news propagated on social media platforms which claimed that

presidential candidate Hilary Clinton's headquarters of an underground child sex rig was located at the pizza restaurant (Tandoc Jr et al., 2018).

As the examples from the Coronavirus and U.S. presidential elections illustrate, the threat of fake news in persuading and altering people's beliefs and attitude in today's media environment has become a real threat. It is important to note that the threat of fake news is nothing new and is as old as humankind with the famous examples of the propaganda campaign waged by Octavian during Roman times (Kaminska, 2017), and the "The Great Moon Hoax" which led many to believe so called "lunar man-bats" to be living on the moon (Vida, 2012). What changed since then is the fake news's speed and efficiency to reach a wider audience thanks to the advent of the Internet (Greifender et al., 2020). Today, anyone can now disseminate any kind of content online with relative ease. What is more, fake information propagates more pervasively throughout the Internet than true information. For instance, a large-scale study that analyzed more than 126,000 Twitter stories showed that false news was 70% more likely to be retweeted than real news (Vosoughi et al. 2018). In short, fake news travels faster and deeper than real news online and present-day social media users inadvertently or intentionally contribute to the dissemination of fake news by sharing or retweeting it, making them unwitting accomplices in its dissemination.

Against this backdrop of the advent of the Internet and the increased efficiency in spreading fake news, one type of medium carrying fake news has become an essential tool in persuading people and altering behaviors. This essential tool in the digital realm is known as the "Internet meme" and non-state actors and state actors including China and Russia have been active in using Internet memes to alter perceptions and behavior through their disinformation campaigns (Gisea, 2019). The meaning of an Internet meme can be digested in a matter of seconds by the audience and are easy to create and circulate, making it an attractive tool for spreading fake news. Trump

himself and his alt-right community effectively capitalized on Internet memes in the 2016 presidential election which the alt-right movement claimed to have successfully memed Trump into the White House (Beran, 2017). Political discourse on social media has somewhat become "memefied" (Bulatovic, 2019). In the context of the COVID-19 pandemic, fake news regarding how to cure oneself against the virus was spread through the form of memes (Nieubuurt, 2021). As Internet memes become a more popular tool in disseminating misinformation, there is a growing concern about their impact on the audience. The subsequent section will delve into the fundamental characteristics of Internet memes and how they can be used as a potential tool for political communication, as well as their potential to be employed for malicious intentions.

2.2 Conceptualization of political memes

Internet meme commonly refers to "a piece of culture, typically a joke, which gains influence through online transmission" (Davidson, 2012, 122). However, the term *meme* itself has long been conceptualized before the digital era. Indeed, the term "meme" comes from the Greek word *minemia* and was first coined by the evolutionary biologist Richard Dawkins (1976) in his best seller *The Selfish Gene* in which he used the term *meme* to describe a cultural unit passed down from generation to generation through imitation in a gene like fashion. This cultural unit could be any cultural idea or behavior such as fashion, language, religion, sports (Davidson, 2012). The concept of a *meme* derives from the principles of Universal Darwinism whereby a *meme* has a certain agency of its own and is interested in spreading as far and wide as possible (Miltner, 2018). Like genes, memes undergo variation and selection while engaging in a competitive process to maximize their spread. In line with the Darwinism theory, memes that align with their sociocultural environment tend to proliferate successfully, while those that do not fade away

(Chielens and Heylighen, 2005). In other words, a meme must reflect in some way the targeted audience's respective beliefs, values and sensibilities for it to proliferate in a viral way.

The term *meme* which was defined by Richard Dawkins (1976) before the digital era has since then been appropriated and applied to the digital realm to describe a unit that disseminates quickly over the Internet. This unit that spreads rapidly like an infectious, gene-like fashion over the Internet is called an Internet meme. The goal of an Internet meme is simple, it aims to become as viral as possible all over the internet through various means of imitation, often through remixing. For an Internet meme to spread successfully, it must be sensible to the targeted audience. They must thus play upon "preexisting social and cultural constructs; norms; values, and/or sensibilities" (Benaim, 2018, 901). As a case in point, a Japanese meme may not resonate well with an American audience. Internet meme's success is thus hinged upon an adequate understanding of cultural understanding. Moreover, like how genes work, an internet meme cannot be a sole imitation or clone of the original meme for it to thrive, it must evolve and mutate (Nieubuurt, 2021). Internet memes do this by leveraging the power of remixing, combining other cultural artifacts with the original artifact. Through remixing, Internet memes increase their chances to engage with non-targeted audience allowing them to spread further and wider on the Internet. The power of remixing is what makes Internet memes a successful "spreadable media" as it allows different audiences to create different meanings from the original artifact, striking a different code from person to person (Jenkins et al., 2013). However, ultimately humans dictate the virality of an Internet meme as they are the hosts and propagating machinery for them (Blackmore, 2000).

While an Internet meme can come in various forms including videos, GIFs and animations, it is commonly understood as a text script often in a blocky white impact font superimposed over a macro image that proliferates across the Internet (Brideau & Berret, 2014). Internet memes are

usually humorous and due to their usage of images, they are visually attractive which helps them gain traction among online audiences (Tandon et al. 2022). Another important aspect of Internet memes is that they are in some way like satirical cartoons in that they usually have a "direct or indirect reference to the current news related developments or relatable situations" (Tandon et al. 2022, 2978). Political memes, which is the focus of this thesis, are under the umbrella of Internet memes and conceptualized as Internet memes that address political issues and personalities.

2.3 The positive role of political memes in society

Political memes do more than make people merely laugh but they also have influence on identity building and collaborative action that is positive to society. Lalancette and Small (2020) outline two main functions of political memes: the participatory function and the argumentative function. Regarding the first participatory function, political memes are easy to create and consume, thus "facilitating participation on both the creation and consumption sides" (Lalancette and Small, 2020, 308). It is important to point out that this participatory function of political memes distinguishes itself from editorial cartoons that are usually created by professionals and journalists (Shifman, 2014). In other words, political memes are user generated content (Shifman, 2014). Everyone can create, disseminate, and recreate political memes. Due to its ease in creating and digesting information through memes, Denisova (2019) has described political memes as a sort of "fast food media" that allow people to participate in politics in an easy and entertaining way. Indeed, political memes have been instrumental in enhancing political participation over the Internet (Heiskanen, 2017). This has been more so particularly for the younger generation (Penney, 2017). However, some scholars have argued that this participatory function is limited only to the online sphere and that political memes have little significant effect in real life describing the

participatory function as “Slacktivism” (Huntington, 2017). Nevertheless, it is undeniable that political memes provide a way for citizens to participate in politics in easy, accessible and playful ways. The second function that Lalancette and Small (2020) describe of political memes is the argumentative function which could constitute as political speech. Through political memes, an individual’s position regarding a certain political topic can be expressed. In the United States, memes are frequently used to criticize political policy especially during election times (Haqqi et al., 2022). Scholars studying memes beyond the United States and Western Europe point out that political memes are used to propagate political narratives that go against dominant state discourses in a sign of protest (Li, 2011; Pearce and Hajizada, 2014). Political memes are thus not just a funhouse mirror for culture and society, but a mirror of culture and social attitudes that reflect opinions and preoccupations of a variety of social groups (Miltner, 2018; Wiggins, 2019).

The two functions of political memes enable for a conducive tool for identity building and collaborative action. The power of political memes in bringing people together and inspiring collective action including protests are evidenced by the Occupy Wall Street movement (Milner, 2013) and Gezi protests in Turkey (Bozkus, 2016). Political memes have also been employed in the Catalan independence movement in Spain (Algaba and Bellido-Perez, 2019). On a different side of the spectrum, political memes are used as conducive tools for dissent against authoritarian regimes. Research on political memes in China show that Chinese citizens used the Grass Mud Horse meme to express their political opinions and mobilize themselves against the Chinese regime (Tandon et al. 2022). The Grass Mud Horse meme turned out to be a sensation and success as it was able to bypass the stringent censorship and connect with fellow Chinese who opposed the regime (Mina, 2014). Likewise, in the context of Azerbaijan, the humor included in political memes were used to signify dissent against the regime in a covert fashion (Pearce and Hajizada,

2014). Notably, the humor embedded in political memes can be used as a morale boost and an outlet for articulating frustration with the prevailing political climate (Bulatovic, 2019). Therefore, on one hand, political memes can be regarded as an empowering tool, capable of serving positive objectives for civil society.

2.4 The negative role of political memes in society

On the other hand, "the seamless nature of memes leaves space for abuse" (Bulatovic, 2019, 251). Political memes can be incorporated in influence campaigns, as exemplified by neo authoritarian regimes, populist and extremist actors such as the American alt-right (Lamerichs et al., 2018) and the German PEGIDA (Haller and Holt, 2019). Marwick and Lewis (2017) note in their paper on disinformation online that political memes are now "strategically created as propaganda by alt-right users to spread elements of their ideologies to normies" (Marwick and Lewis, 2017, 36). Indeed, Greene's (2019) study illustrates how the alt right use political satire in their memes to recruit young individuals into their movement. By disseminating political memes online, extreme right groups strive to create a bonding experience to the youth. DeCook (2018) finds that alt-right groups such as the Proud Boys movement include fascist ideology and white supremacist theories into their political memes to recruit and create a sense of identity among the members.

Compounding the issue of political memes being misused for malicious intentions, the creation of troll and bot factories has added fuel to the fire, making the weaponization of political memes significantly more dangerous as they could disseminate more widely and rapidly on an unprecedented scale. Bots are software-controlled agents which are programmed to carry out

specific tasks that automatically produce content and interact with humans on social media (Ferrara et al., 2016). Facebook estimates that more than 60 million bots proliferate their platform (Lazer et al., 2018) and another study estimates that 9% to 15% of Twitter accounts are bots (Varol et al., 2017). A study using Twitter streaming API shows that bots accounted for about one-fifth of tweets about the U.S. 2016 election during the final month of the presidential campaign (Bessi and Ferrara, 2016). While these bots can serve beneficial purposes such as dissemination of news and publications (Lokot and Diakopoulos, 2016), they can also be leveraged for malicious applications including the dissemination of fake political memes. To illustrate the scale of the issue, Internet Research Agency (IRA) which has its headquarters in St. Petersburg, Russia played a major role in computational disinformation operations including the 2016 U.S. election. In 2016 alone, it is alleged that they have produced more than 57,000 Twitter posts, 2,400 Facebook posts, and 2,600 Instagram posts (Bail et al., 2020). Zooming in on the dissemination of political memes by the IRA, with the aim of dividing U.S. citizens and their trust in the media, they have reportedly redistributed approximately over 167,000 memes on Facebook and Instagram alone during the year 2016 (DiResta et al., 2019). Given the ascendancy of computational disinformation operations using bots in recent years, political memes can indeed be regarded as the "digital modern leaflet propaganda" (Nieubuurt, 2021) that could potentially distort people's beliefs and attitudes on a wide scale. Political memes have thus become a double edge sword whereby they have become an important part of identity and community building for civil society (Shiffman, 2014) but they can also be used for "participatory digital persuasion" (Repnikova and Fang, 2018) and "waging political war against opponents" (Bulatovic, 2019, 251).

The fact that political memes have become an essential part of "participatory digital persuasion" and as "weapons in political warfare" is even more concerning given the participatory

function of political memes. Literally as Denisova (2019) described memes as "fast food media", virtually anyone can produce political memes and disseminate them online with relative ease without any oversight regarding its quality. Today, capitalizing on the digital media environment, political memes created by lay people and non-journalists can be disseminated instantly without going through a rigid filtering process that prevents inaccurate messages from being disseminated. What is more, due to the anonymity that the Internet provides, meme creators and disseminators can share them on social media with minimal fear of social backlash and censorship (Nieubuurt, 2021). Indeed, the anonymity that the Internet landscape provides can boost one's incentive to share content. One study shows that controversial content online is 3.2 times more likely to be shared anonymously than non-anonymously (Zhang and Kizilcec, 2014). Literally "each computer, smartphone, or tablet becomes a readily available tool of conveyance; distributing ideas that could potentially spread across the globe" (Nieubuurt, 2021, 3). Therefore, in the current media environment where there are few standards for quality control and evaluation online, in which anyone can create and disseminate political memes anonymously, fake news or information lacking in credibility can be propagated instantly with just a tap of your finger. Returning to the concept of Internet meme, the core element of a meme is "imitation" as the Greek root word *mimesis* implies. In the realm of social media where political memes can be shared on a massive scale rapidly, there is little time or incentive for fact-checking. After all, a political meme is "meant to be humorous and entertain and does not purport to state real facts" (Bulatovic, 2019, 252).

Therefore, the digital media environment and political memes have made for a dangerous cocktail of risks of being exposed to propagandistic and fallacious information online even if it is only passive. Just to cite a few examples, in the 2016 presidential primaries, approximately 68% of Americans used social media to get their news online (Gottfried & Shearer, 2016). Even if

passive, a large portion of the American population would have been exposed to the American alt-right memes such as the Pepe the Frog meme which gained a lot of traction during that time or IRA propagated 167,000 political memes (DiResta et al., 2019). To mention another example from the Canadian context, McIntosh (2019) argues that the 2019 Canadian elections could have possibly been affected by political memes by Justin Trudeau's political opponent, Jagmeet Singh of the New Democratic Party. Given that in 2017, 84% of Canadians had a Facebook account and that 79% of them used it daily (Gruzd et al. 2018), it is very likely that Canadian social media users came across political memes in some way or another even in a passive manner. While there is no concrete evidence in both the U.S. and Canadian case in how political memes affected the election turnout or people's political attitude, it is fair to say that in today's digital environment where there is little oversight on what goes up online, propagandistic and fallacious political memes can gain traction among Internet users by means of sharing, spreading from one user to another rapidly. Considering the pervasiveness of fallacious and propagandistic political memes in online discourse, it is pertinent to investigate the potential impact of such content on individual's political attitudes and beliefs. Political memes have become an effective tool for information propagation, and it is high time to investigate their political effects.

Despite this high risk of being exposed to fallacious propagandistic memes online, as pointed out by Huntington (2020), "there appears to be little published research that examines memes in the context of their audiences" (Huntington, 2020, 195). Indeed, Internet memes have been long dismissed by academia as lacking any real public significance (Katz and Shiffman, 2017; Nissenbaum & Shifman, 2018). While we know that political memes are viral content in that they can spread all over various platforms on the Internet easily, studies looking into the effects of Internet memes are still scarce. This is alarming given that the younger generation today are

shifting to visual based platforms (Anderson and Jian, 2018). One study demonstrates that Generation Z and Millennials in the United States are statistically 35% more likely to share other people's memes (Dixon, 2022). As more and more people especially, the younger generation get their news through visual based platforms such as Instagram, Facebook and Twitter, so does the likelihood of them encountering and sharing political memes with fake news. Considering the significant role that political memes play in social media and their utilization within political campaigns to sway the audience, it becomes crucial to examine the effects that political memes have on us. The subsequent section will delve into a couple of studies that have explored the effects of political memes on the audience.

2.5 Previous research on effects of political memes on the audience

Previous research that investigates the effects of political memes empirically has mainly focused on how political memes could induce political polarization (Klein, 2019; Wong and Priniski, 2022) and political opinion change (Galipeau, 2022).

In the case of Klein's work (2019), a qualitative focus group study was conducted among Dutch university students in which political memes used by specific political actors in the Netherlands were shown. In their experiment, political memes that were confirming and opposing their political ideals of the participants were shown. The results demonstrated that political memes could induce polarization by causing frustration among participants. Specifically, political memes opposing the Dutch university students' political views were met by frustration, reinforcing their political stances even further (Klein, 2019). This potential of political memes having a so called "backfiring effect" (Nyhan and Reifler, 2010) on people's political views was further analyzed by

Wong and Priniski's (2022) recent study on the impact of politically polarized Internet memes about climate change. Results from the quantitative experiment showed that contrary to the hypothesis, backfiring effects were rather minimal. Both the works of Klein (2019) and Wong and Priniski (2022) involved a short exposure experiment design in which participants were exposed to Internet memes for a short time. In contrast, Galipeau (2022) examined the polarizing effects of Internet memes using a longitudinal experimental design. The results of Galipeau's study (2022) demonstrated that the effects on polarization do not occur on a homogenous level but among certain subpopulations. Indeed, the backfiring effect occurred only on specific issues which are economic and social, and the effect was largely limited to highly partisan people. Therefore, the extant experimental works suggest that political memes have the potential to polarize highly partisan individuals through a so called "backfiring effect". Another key finding of these studies is that counter attitudinal memes created a stronger effect than pro-attitudinal memes. Succinctly put, political memes that go against one's political ideals create a stronger psychological reaction.

While previous research on the effects on political memes has exclusively focused on how they can bring about political polarization and opinion change among individuals, scant attention has been paid to political memes and how they could influence our "truth assessments" by exploiting our cognitive biases. Indeed, the human brain can only handle so much information at one time and most of the time we use cognitive shortcuts to arrive at a certain decision. The use of heuristics so to speak can be dangerous as pointed out by Nieubuurt (2021) as they can be "effectively gamed by Internet memes and the people or groups which create and share them" (Nieubuurt, 2021, 7). Research in cognitive psychology has consistently shown that individuals are prone to trust information that is accompanied by an image. For instance, research by Newman et al., (2012) has demonstrated that images do not have to be directly related to evidence to produce

the power of influencing people's truth assessments. Since political memes typically include a claim accompanied by an image in the background, it becomes relevant to inquire whether political memes could influence our truth assessments in the same way images do. This question lies at the heart of the thesis, and the next section will delve more deeply into it.

2.6 Truthiness effect of political memes

Political memes could have an influence on our perception of truth, the ability to distinguish between what is true and false. Indeed, the visuality of Internet memes provided by the image in the background could impact our cognitive experience of processing information in a unique way, resulting in an influence on our assessment of truthfulness. Take for instance an experiment conducted by McCabe and Castel (2008) in which students rated a neuroscience article with and without an image of a brain. The results of the experiment showed that students rated the neuroscience article more credible when it was accompanied with an image of the brain than when it was not (McCabe and Castel, 2008). If we take another example from study by Newman et al. (2012), a similar finding was found in which participants were more likely to judge a celebrity to be alive when the claim appeared with a photograph of the celebrity. Therefore, even if the images do not directly connect to the evidence of a given claim (non-probative photos), images still have the potency to inflate a sense of truthfulness to the accompanied claim. Images thus have the power to bias human assessments of truthfulness. As we recall, an internet meme is a text script often in a blocky white impact font superimposed over a visually attractive macro image (Brideau & Berret, 2014). Within the context of fake news and misinformation, political memes could pose a danger to the public by misleading them through their visuality (Klein, 2020). As political memes become more and more important in disseminating political information among citizens, so does the danger

of misinforming the public through its visuality. As Klein (2020) notes, "memes can be considered a form of modern-day propaganda" (Klein, 2020, p.160). Images tend to be perceived less falsifiable and they are an indispensable component of political memes. Therefore, through political memes' visuality, there is a concern that people exposed to political memes can be easily manipulated or misinformed. To fully grasp the cognitive process in which the visuality of internet memes impact our truth assessment, it is crucial to visit the literature on information processing literature and how visuals influence truth discernment.

Human judgements mirror "not only the content of our thoughts but also the metacognitive experience of processing those thoughts" (Alter and Oppenheimer, 2009, 219). To give an illustrative example, individuals are more likely to believe in statements that are easy to read than those that are not (Reber and Schwarz, 1999). The ease or "fluency" with which people process information thus plays a key role in our judgements. This experience of cognitive fluency is not restricted to visual perceptual fluency but includes a variety of fluencies including memory, linguistic processing (Alter and Oppenheimer, 2009). Nevertheless, among the various tribes of fluency, visual perceptual fluency remains the most researched by cognitive scholars (Alter and Oppenheimer, 2009).

Each cognitive task can be put on a scale from effortless to highly effortful, and depending on the cognitive effort exerted, disfluency and fluency in information processing is experienced (Alter and Oppenheimer, 2009). The fluency experienced in turn influences our assessments of truthfulness (Schwarz and Jalbert, 2020). For instance, when information is processed fluently with minimal cognitive effort, it is more likely to be perceived as true. We thus tend to nod along when information processing feels smooth and easy. In other words, easy to process information is likely to be judged as true while harder to process information is likely to be judged as untrue.

As the old saying goes, photographs are worth a thousand words, and they have repeatedly been used throughout history to serve several functions: capture attention, boost comprehension and perceived truth in a claim (Kelley and Lindsay, 1993). Photographs have power in facilitating the information processing fluency mechanism, making the information process feel smooth and easy. Specifically, photographs increase the ease with which a message is processed whereby statements accompanied with a photo are more likely to be judged true regardless of whether the claim is correct or not. Moreover, photographs can be simple, but they ease the information process making it feel right. In one study, people were shown a simple photograph of a thermometer with a false claim "Magnesium is the liquid inside the thermometer". People that were exposed to this simple picture were more likely to believe in this fallacious claim (Schwarz et al., 2016). Therefore, photographs do not need to provide direct evidence to the supporting claim to influence our assessments of truth, they can be non-probative photographs to bias our thought process.

It is widely established that doctored photos can trick us into believing a false claim (Wade et al., 2002; Sacchi, Agnoli, and Loftus, 2007). Several studies have demonstrated that childhood and adult memories can be altered after being exposed to doctored photos. One experimental study in which participants were exposed to pictures of themselves and their family members taking a hot-air balloon ride demonstrated that 50% of the participants believed to have taken part in the false event (Wade et al., 2002). Adult memories can also equally be tricked using doctored photos. In an experimental study carried out by Sacchi and colleagues (Sacchi, Agnoli, and Loftus, 2007), research participants were exposed to doctored photos at which they were present. The manipulation of photos of the events had a potent effect on their memory as they recalled the events in a different way. For instance, those who viewed the doctored photo of the 1989 Tiananmen Square protest in Beijing estimated that a much larger number of people took part in it, and those

who viewed the doctored photo of 2003 anti-Iraq protest in Rome recalled more physical confrontation and violence. It is therefore widely established in extant research that doctored photos can lead us to believe in a misleading claim. Taking note of the power that photos have in altering our beliefs and memories, Wade et al. (2002) speculated that photographs act somewhat as a "springboard" to generate feelings and thoughts more easily than mere verbal descriptions.

Nevertheless, research has demonstrated that relatively innocuous photographs that do not give evidence to a given claim can still trick us into believing a false claim. In other words, photographs do not have to be doctored or directly tied to evidence to deceive us into believing in a false claim. This phenomenon is known as the "*truthiness effect"* whereby a simple photo that does not offer any diagnostic evidence can bias people into believing that the associated claim is true (Newman and Zhang, 2021). To get a clearer understanding of the "*truthiness effect*", take for instance a study done by Fenn and colleagues (Fenn et al., 2013) in which subjects were exposed to the statement "The Mona Lisa has no eyebrows" with a blurred picture of Mona Lisa viewed at a distance by a person. The results of the experiment showed that those who were exposed to the statement with the photo were more likely to say that the claim is true than those that weren't exposed to the photo. This "*truthiness effect"* fits in the larger cognitive fluency literature which presupposes that information that is fluently processed increases truth judgement. When information is easily processed, it is deemed to be true and when it is difficult to process, it is deemed untrue. Photographs facilitate the fluidity of the processing of information processing, ultimately biasing our truth assessments. However, it is important to point out that the "truthiness effect" holds only when statements are accompanied with a semantically related photo. For example, coupling a lizard photo with the statement "The liquid metal inside a thermometer is mercury" is likely to bring about an adverse effect, encouraging the bias to say false (Newman et

al. 2015). Therefore, photographs need to be semantically related to a statement to bring about a truthiness effect".

In the context of the social media landscape where fallacious information can be widely disseminated by anyone with great ease, compounded with an increased level of visual content online (Highfield and Leaver, 2016), the "truthiness effect" could pose dangers in misinforming and misleading users of social media. The well-known saying, "seeing is believing" aptly captures the tendency of individuals to place trust in visual representations. Extant research has shown that individuals are inclined to believe in the content depicted in images online (Kasra et al., 2019). This is in line with research that illustrates that Internet users rarely perform any evaluation behavior to verify the content online (Metzger, 2007). For instance, one experiential study conducted on young U.S. college students demonstrated a tendency of them to overly trust images on the Internet (Kasra et al, 2018). Another study that measured U.S. high school students' evaluation of online sources online showed that they tend to accept the photos as facts without verifying their credibility (Wineburg and McGrew, 2016). Newman and Zhang (2020) note that this "truthiness effect" could have an insidious effect on people's beliefs through fake news headlines that coupled with images. Indeed, in an online news environment where people just read the headline without reading the full text, mere exposure to false headlines could mislead individuals. In a study conducted by Columbia university, it was found that 59% of links shared on the Twitter platform were not clicked at all, implying that people just read headlines without checking the text (Gabielkov et al., 2016). False headlines paired with an image could thus mislead the viewer into believing the fallacious information is accurate. To present another compelling case, during the three months preceding the U.S. 2016 election, Facebook engagement for the 20

popular fake news stories surpassed that of the 20 real news stories, indicating that fake news had more traction than real news during that period (Silverman et al., 2016).

Taking note of how individuals blatantly fall for inaccurate news headlines, a couple of studies have embarked on investigating the causal mechanism behind people falling for fake news headlines (Bago et al., 2020; Pennycook and Rand, 2019). They both conclude that lack of deliberation on behalf of the viewers mainly results in the belief of false headlines regardless of their political stances. However, there has been little research done on political memes and how it can trick people through its visuality. In other words, the "truthiness effect" of political memes has yet to be explored. This is concerning given that political memes have become an essential tool for state and non-state actors in their information operations. With the relative ease in which political memes are created and shared online by anyone, fake news in the form of political memes can potentially deceive people in a wide scale similar to how fake news far overwhelmed real news three months before the 2016 U.S. election (Silverman et al., 2016). This brings us to the research question which is as follows:

Research question: Do political memes containing fake news exhibit a "truthiness effect" on individuals?

2.7 Conclusion

Throughout this chapter, I strived to demonstrate that while political memes have contributed to leveling the playing field on the political spectrum, they have unleashed a wave of mass digital misinformation, resulting in negative consequences akin to opening Pandora's box. One of the potential negative consequences with political memes that was raised is their ability to exploit cognitive heuristics, leading to a distortion in our perception of truth through their visuality.

What is deeply concerning is that state actors and non-state actors with mischievous intent could take advantage of these cognitive heuristics for their respective disinformation campaigns to misinform and misguide their targeted audience. Despite the threat that political memes could pose to society, there has been only a handful of studies done on measuring the direct effects of political memes on the audience (Galipeau, 2022; Klein, 2019; Wong and Priniski, 2022). This thesis aims to build upon this growing but undeveloped realm of research. This thesis will contribute to this block of research on the effects of political memes by ascertaining the "truthiness effect" of political memes. Do political memes containing fake news exhibit a "truthiness effect" on individuals? The theoretical section will follow before arriving at the hypotheses.

3 Theoretical framework

While there is much controversy, there is strong empirical evidence which suggests that human reasoning and decision making are accomplished through two different modes of information processing; one that is quick and automatic, and the other one which is slow and deliberative. Realizing that human reasoning and decision-making take place on two distinct levels, theorists have proposed a conceptual distinction between the two different modes of information processing. These two different modes of information processing are popularly known as the Dual Process Theories (DPTs) and the theory goes back as early as the late 19th century when William James suggested that human reasoning involves two distinct systems (James, 1890/1950). Sigman Freud was also a pioneer of the DPTs as his theory of information processing distinguished between a primary system that is implicit and a second system that is capable of rational thought (Freud, 1900/1953). Since then, many authors have spilled ink on this DPT and

created different interpretations and branches to this theory. However, one thing that all works from the DPTs have in common is the thought that again, there are two different modes of processing, commonly known as System One and System Two (Kahneman & Frederick, 2002). Essentially, DPTs propose that there are two minds in one brain, and that they compete to have an impact on our inferences and actions.

"System One and System Two" as it is commonly known today is a DPT of probability judgement developed by Kahneman & Frederick (2002) from the generic DPT. Kahneman later wrote a seminal book *Thinking Fast and Slow* (2011) in which he described that our brain operates on two distinct levels: System One and Two. To put it succinctly, System One is automatic thinking requiring minimal effort while System Two requires more effort and attention. The two systems are observable in various life situations and help differentiate between intuition and reasoned thought – the former being immediate and the latter more cautious (Frankish, 2010). Philosophers such as Descartes touched upon these two systems when he contended that despite humans having a unique reasoning system, they operate most of the time in an animal like process such as when walking (Descartes, 1985). In a similar manner, to this day many dual process theorists contend that System One thinking is a form of universal cognition shared between humans and animals, while System Two thinking is believed to be something unique to humans. The question of whether System Two thinking is a unique human ability is a recurring theme in the DPTs as evidence suggests that animals such as chimpanzees and rodents have higher order control systems resembling System Two thinking (Toates, 2006; Mithen, 1996). Putting the debate aside, what is important to take note of is that according to DPTs, System One is described as fast and automatic and System Two as slow and deliberative.

Both systems are assumed to work in synergy but due to the effort that System Two requires, System Two runs in low priority mode. The DPT thus presupposes that humans are economy minded and that we try to process information in the least effortfulness way possible, using System One in most cases. How System One and System Two operate basically comes down to heuristics. Intuition (System One) allows for automatic primitive responses while deliberation (System Two) can override and correct heuristic cues. For clarification of the two systems, consider the following example coming from the Cognitive Reflection Test (Fredrick, 2005).

A bat and a ball cost $1.10 in total. The bat costs $1.00 more than the ball. How much does the ball cost?

System one which is based on heuristic cues and minimal effort would argue that the correct answer is 10 cents. However, upon deliberative effortful thinking based on System Two, the intuitive response would prove to be wrong. Indeed, "if the ball cost 10 cents, the bat would have to cost $1.10 and they would total $1.20" (Pennycook & Rand, 2019). According to DPT, when processing information there is thus variation in how much effort we exert, and the outcome of a given reasoning attempt is determined by System One processing and the quality and depth of System Two processing. While much scholarly work has covered the description of each system, limited emphasis has been placed on precisely determining the circumstances under which individuals adopt each of the systems in information processing (Alter et al., 2007).

The fluidity of information processing seems to be the key in guiding one to use either System one or System two. People's use and activation of System Two depends largely on cues that suggest System one judgement may be erroneous. Therefore, if the information is processed with difficulty, the brain will take it as a cue that System one judgement may be erroneous and subsequently activate System two processing. In fact, there is neuroscientific evidence which

supports this theory that disfluency triggers System Two thinking. Specifically, research shows that disfluency in information activates the prefrontal cortex of the brain which is responsible for more deliberative thought (Botvinick et al., 2001). To give an example of how disfluency activates System two thinking, in an experiment conducted by Alter et al. (2017) participants were given a question from the Cognitive Reflection Test in a difficult to read font and an easy-to-read font. Consistent with the fluidity argument, the results showed that participants who received the difficult to read font tended to do better than the easy-to-read font group. The results of this experiment thus suggest that disfluency experienced by an individual serves as a cue to activate System two. Therefore, the ease or fluidity in processing information is crucial in guiding an individual to adopt either System one or System two.

It follows then that when an individual stumbles upon information that is difficult to process, System two is activated for closer scrutiny. What is more, the activation of either System one or System two directly affects one's assessments of truth (Schwarz & Jalbert, 2020). In other words, information which is easy to process is considered as true, whereas information which is difficult to process activates System two making an individual less likely to consider the information as true (Schwarz & Jalbert, 2020). Substantial empirical evidence supports the notion that processing fluency can increase one's perceived truth value (Schwarz, 2004). Among the variables of processing fluency, repetition is considered a key variable which facilitates fluent information processing. This theory finds support in a classical study conducted by Allport and Lapkin (1945) wherein they discovered that simple repetition played a key role in perceiving wartime rumors as true. This finding regarding the influence of repetition on truth beliefs has since then been replicated and extended to research on online fake news, demonstrating that repeated

information amplifies one's perception of its accuracy in fake news and conspiracy theories (Pennycook et al., 2018; Béna et al., 2023)

An exemplary case of repetition increasing one's perception of truth in an everyday situation is evident in the following statement: "Vitamin C prevents common colds". Despite this widely held belief that has been repeatedly claimed by marketers, scientific research has consistently proven that consumption of Vitamin C has no effect on common cold incidence (Hemilä and Chalker, 2013). As this exemplary example of Vitamin C shows, repetition plays a key role in our perception of truth. Taking note of the power that repetition has, in one of the first studies to ascertain the power of repetition on perceived truthfulness, Hasher and colleagues (1977) conducted an experiment in which participants were asked to judge the truth of plausible statements such as "Divorce is only found in technically advanced societies". For the participants in the treatment group, statements were shown three times at two-week intervals and in the control group the statements were shown just once. Results of the experiment showed that for both the true and false statements, there was an increase in perceived accuracy in the treatment group (Hasher et al., 1977). Moreover, even a single prior exposure is enough to create the effect of increasing perceived truth (Hassan and Barber, 2021). For example, in Pennycook et al.'s (2017) sample, by merely encountering the headline "Trump to Ban All TV Shows that Promote Gay Activity Starting with Empire as President" once resulted in twice the probability of participants perceiving it as true. Even statements that are highly implausible (e.g., the earth is a perfect square) become plausible to some when they are repeatedly shown (Fazio et al. 2019). In a similar fashion, statements that contradict one's preexisting knowledge can also increase one's perceived accuracy in the said statements if they are repeatedly shown (Fazio et al, 2015). This phenomenon in which repeated information is perceived as more truthful than novel information is commonly referred to

as the illusion truth affect or the repetition truth affect (Hassan and Barber, 2021). The most cited explanation for this phenomenon comes from the processing fluency account in which it is contended that repetition facilitates fluent processing, which is then taken as a cue by the brain to judge the statement as true (Unkelbach et al. 2019). Repeated statements are simply easier to process than new statements.

Besides repetition, other variables have been manipulated to investigate whether it facilitates processing fluency and consequently truth ratings. For instance, a study by Reber and Schwarz (1999) demonstrates that statements written in an easy-to read font are more likely to be judged as true (e.g., dark blue) than those that are displayed in fonts that are difficult to read (e.g., light blue). In a similar fashion, people are more likely to judge a certain aphorism to be true when words rhyme than when they do not (McGlone & Tofighbakhsh, 2000). Another insightful study gauged the impact of processing fluency on our truth judgements by focusing on speech (Lev-Ari and Keysar, 2010). Specifically, people judged statements such as “Ants don’t sleep” less true when it was spoken by a nonnative English speaker than a native speaker. Therefore, theoretically speaking, variables that increase processing fluency should equally increase one's assessment of truth of the information that is being processed.

In a similar fashion to the display of fonts, information that appears with photos or anecdotes are easy to process, making people more likely to consider information true than reading mere text which is difficult to process (Newman et al., 2012). Anecdotes and photos both have powerful influence on individuals’ minds as they “increase the ease with which a message is processed, produce a feeling of remembering, and systematically bias people to believe information whether it is true or false” (Shwarz, Newman & Leach, 2016, 90). Photographs and anecdotes can bring about a “truthiness effect” so to speak by making it easier for the reader to

imagine and understand the information (Shwarz, Newman & Leach, 2016). Interestingly, even non-probative photos, which are photos that have little, or no information value can add this "truthiness effect" to a given statement or claim (Newman et al., 2012; Newman and Zhang, 2020). For instance, in one of the first study to examine the influence of non-probative photos on creating a "truthiness effect", Newman et al. (2012) carried out an experiment in which participants were presented with a false claim "Giraffes are the only mammals that cannot jump" either with a simple photo of a giraffe's head or without a photo. The results of the experiment showed that those that were presented with a photo of a giraffe's head were more likely biased towards answering that the false claim is true even though the picture had no evidence suggesting whether they can jump or not (Newman et al, 2012). Succinctly put, a simple headshot of a giraffe distorted one's perceptions of truth in the minds of the study by Newman et al. (2012). Photos thus have the potential to bias people's judgements via the cognitive fluency mechanism with only a short exposure. Humans tend to nod along when the information at hand is easy to process, while stop and scrutinize when the information is difficult to process (Marsh and Stanley, 2020). This cognitive fluency mechanism of people is significantly facilitated by the presence of photos and anecdotes. In other words, the addition of pictures and anecdotes to information spurs one's brain to use System One, causing it to believe in the information without further scrutiny. All in all, photos and anecdotes bring about a "truthiness effect" by stimulating System One thinking, thereby putting one at risk in believing false information to be true.

As we recall, Internet memes are humorous media content that spreads like a virus from person to person and one of the key characteristics of them was that they included an anecdote, or a text accompanied by a humorous picture (Majumder, 2017). Given that previous cognitive research has shown that photos and anecdotes facilitate the ease of processing information and

produce a "truthiness effect" (Shwarz, Newman & Leach, 2016), I hypothesize that political memes would yield the similar type of result of individuals being biased to believe in the false claims. On the other hand, I hypothesize that individuals exposed to mere text versions of the political memes would be more likely to critically engage with the information, resulting in them believing less in the false claims.

Hypothesis 1: Individuals exposed to fake political memes would be more inclined into believing in the false claims in comparison to those exposed to the same information in mere text

Null Hypothesis 1: The exposure to fake political memes does not have any effect on the inclination to believe false claims

So far, System One thinking was associated with an increase in belief in fake news, whereas System Two thinking was associated with correcting the erroneous judgment. In other words, deliberation was considered to increase ability to discern truth from false. This presumption that deliberation leads to better truth assessment in cognitive research is referred to as the "classical account". In the context of this research which concerns fake news, the classical account predicts a positive correlation between System Two thinking and discernment of fake news. I argued that political memes activate System One thinking whereby, individuals exposed to them would be biased into believing the false claims contained in the political memes.

While the classical account is a prominent theory put forward to explain why people fall for fake news, it has not escaped from its criticism. Specifically, the alternative account commonly referred to as "motivated reasoning" has contended that increased deliberation should instead be accompanied by a decreased ability to discern true from false (Pennycook and Rand, 2021). This

account derives from the thought that intuition should not always be regarded as incorrect or that analytic thinking should always be regarded as accurate especially when political ideology and partisanship comes into play. Indeed, "motivated reasoning" is based on the reasoning that belief in fake news is strongly connected to political partisanship whereby an increase in deliberation should lead individuals to convince themselves and protect their political identity even if the fake news is highly implausible (Kahan, 2017; Pennycook and Rand, 2019). Therefore, according to the "motivated reasoning theory", highly partisan people would be expected to believe more in politically concordant false claims when System Two is activated to protect their political identity. Given that we presume political memes create a truthiness effect and activate System One thinking already, we hypothesize in addition to the first hypothesis that based on the "motivated reasoning account" that regardless of whether highly partisan individuals encounter politically concordant fake news in the form of political memes (System One) or in mere text (System Two), they will be likely to believe in it. Therefore, for example, if a republican partisan individual is exposed to an ideologically republican fake political claim in a form of text, motivated reasoning will activate, making the individual more likely to believe in the text. Therefore, we would not observe a significant difference between a partisan's perceived accurateness of a politically concordant fake statement whether it is in a meme or a text. Hence, the study presupposes that the "truthiness effect" of politically concordant memes will be weaker for partisans than non-partisans.

Hypothesis 2: The "Truthiness effect" will be weaker or non-existent for highly partisan individuals exposed to politically concordant memes.

Null Hypothesis 2: There will be no significant difference in the 'Truthiness effect' between highly partisan individuals exposed to politically concordant memes and those not exposed to politically concordant memes.

4 Methodology

4.1 Participants

Capitalizing on Facebook ads manager function, using a $100 monetary incentive, a sample of approximately 134 adolescents residing in the United States were collected for the data. The sample period was from the 23rd of May to 28th of May 2023. A link was attached to the Facebook advertisement which brought the participants straight to the survey page leveraging the Qualtrics platform. The methodological section consisted of investigating the "truthiness effect" of political memes.

The participants were randomly assigned to one of the two groups: the treatment group which was fed with political memes that activate System One thinking (heuristic thinking), and the control group which was fed with plain-text versions that activates System Two thinking (systematic thinking).

4.2 Material and procedure

As for the material, the study employed six different types of political memes, including both real and fake versions of Republican-concordant memes, Democrat-concordant memes, and politically neutral memes. The memes were created by the author himself based on two sources. The first source comes from Pennycook and Rand (2019) whereby their headlines used in their study were recreated into the form of memes. The second source comes from *Snopes.com,* a renowned fact checking website aimed at fighting disinformation by identifying and correcting fake news. Fake news articles from Snopes.com were chosen by the author solely and converted into the form of memes. All political memes were created using *Meme Generator,* a popular meme

creating website.

Altogether, 18 political memes were created for the treatment group: 3 true political memes and 3 fake political memes from each category (Republican, Democrat, Neutral). For the control group, plain text versions of the politically neutral memes were created. The plain text version of the politically neutral memes was created in Times New Roman front in a black border (See Appendix A for the political memes).

Before the experiment began, demographic questions along with political ideological were asked. All questions were based on standard survey questions based on American National Election Studies. After filling out the demographic and political questions, the experiment commenced by randomization into two groups: meme group (treatment) and non-meme group (control). To assess the truthiness effect of the political memes, participants in both the meme group and non-meme group rated the accuracy of the information after each exposure. Participants were asked one question "How likely do you think that this event actually happened?" with the response option on a scale from 0 (Not at all likely) to 10 (Extremely likely). This scale measurement from 0 to 10 was used to get a better grasp of the truthiness effect on a numerical scale as majority of previous studies have provided response options as "Yes/No".

As a manipulation check, two sections were created. In the first section, three political memes for the treatment group and three plain text versions for the control group was put at random throughout the survey with the question "Do you remember seeing this political meme/text?" with the response option as "Yes/No". As an additional manipulation check, specific questions were asked at the end of the survey regarding the political meme/text. Participants were asked to choose one answer from five choices (See Appendix B for manipulation check questions).

After the participants were done assessing the political memes/text, they were asked to answer a couple of questions related to affective polarization. Affective polarization questions were asked to connect my studies to future research that investigates the effects of political memes on polarization. To do this, a couple of affective polarization questions based on the American National Election Studies were asked along with the feeling thermometer question. The feeling thermometer is one of the most central ways in measuring affective polarization (Levendusky and Druckman, 2019). Therefore, leveraging the "feeling thermometer" measurement, participants will be asked to rate both Democrats and Republicans from cold (0) to warm (100) before and after being exposed to the stimuli. Affective polarization will be calculated based on the difference between in and out group rating.

The manipulation check questions followed the affective polarization questions. After the participants were done with the manipulation check questions, they were asked to fill in their email in a box to participate in the $100 lottery. The survey concluded by presenting a compilation of fake news items and providing their corresponding debunking information. For a detailed look into the survey questions refer to Appendix C.

5 Results

5.1 Descriptive Statistics

The data collection finished with 134 collected responses. Regarding the gender distribution of the sample, 59.7% of the participants were female, 36.5% were male, 2.9% were non-binary/third gender, and 0.7% preferred not to say. It can be observed that females were overrepresented in the sample. Regarding age, as figure 1 illustrates, the older population made up

most of the sample. Respondents who were 65 years and older were 32%, and 18 to 24 years old representing the younger population were at 16%. Therefore, the older generation were overrepresented in the sample. This was reflected in the employment situation of the respondents as 36.5% were retired and those that were working were 16.4% (full-time), 17.1% (part-time) respectively. Most of the participants were White, or Caucasian and Asian (67%). Regarding education level, the majority had some educational background. 23.1% had some college but no degree. 28.3% had a bachelor's degree and 21.6% had graduate or professional degrees (MA, PhD, MBA etc.). The majority was confident in their English skills as 87.3% of the respondents chose "10" which is the maximum degree of self-professed English fluency in the survey. Most of the participants seemed to be politically engaged as approximately 80% of the sample voted in the 2020 U.S. presidential election. In a similar fashion, 80% pay attention to what is going on in politics actively (Always/Most of the time). Regarding political ideology, as figure 2 demonstrates, 50% identified themselves as Democrats, 18% as Republicans, and 20% as Independent. Therefore, there was an overrepresentation of Democrats in our sample.

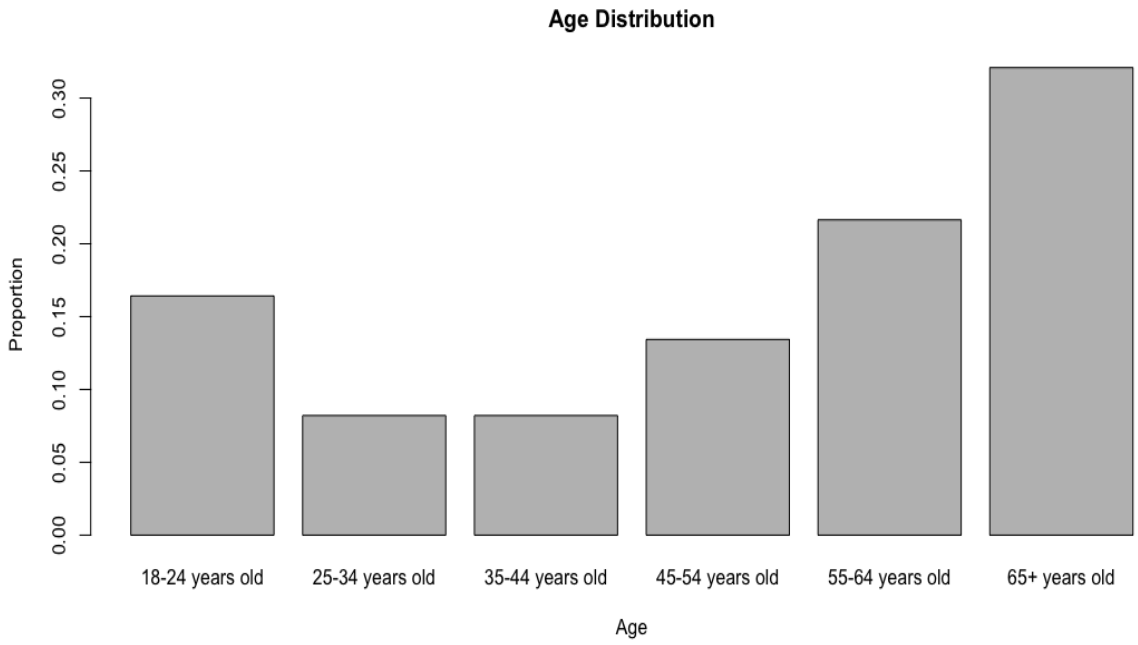


Figure 1: Respondents' self-reported age

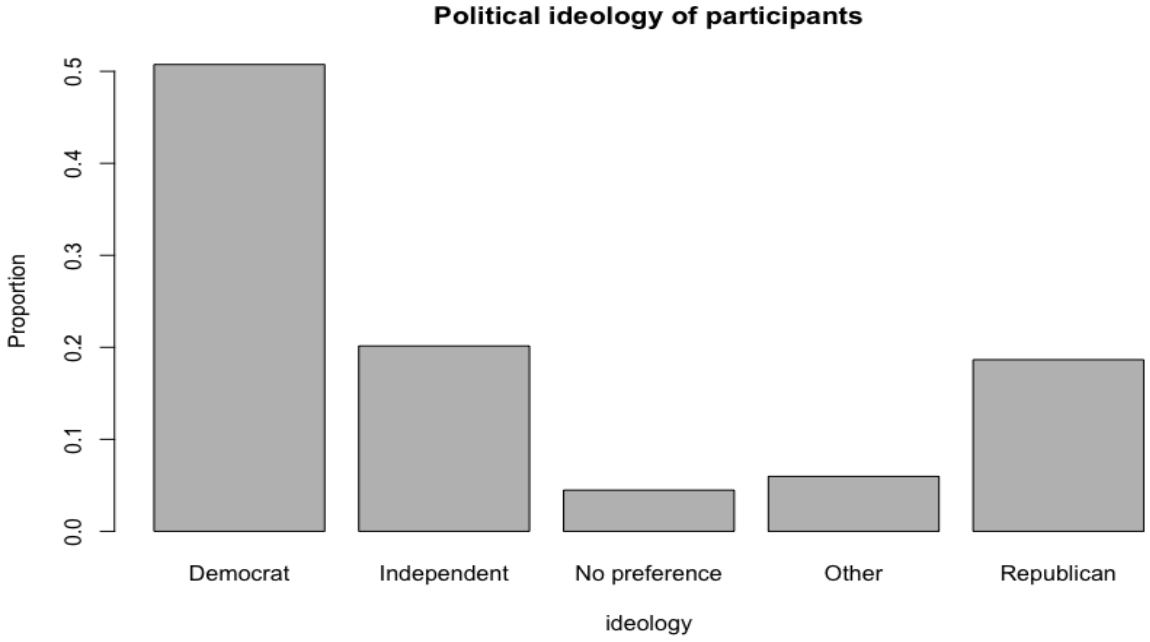


Figure 2: Respondents' self-reported political ideology

5.2 Group balance check

The Qualtrics platform randomization tool helped the study to get a similar sized group for the analysis. The control group consisted of 68 individuals, while the treatment group had 66. The eldest group (65+ years old) made up the largest proportion for both groups: 21 individuals for the treatment group (31%) and 22 individuals for the control group (32%). As can be observed from Figure 3, the age distribution between the treatment group and control group is evenly distributed. Political Ideology of the respondents were evenly distributed despite an overrepresentation of Democrats in both the treatment group and control group (Figure 4). Similarly, as can be observed from Figure 5, there was an overrepresentation of Females in the treatment group.

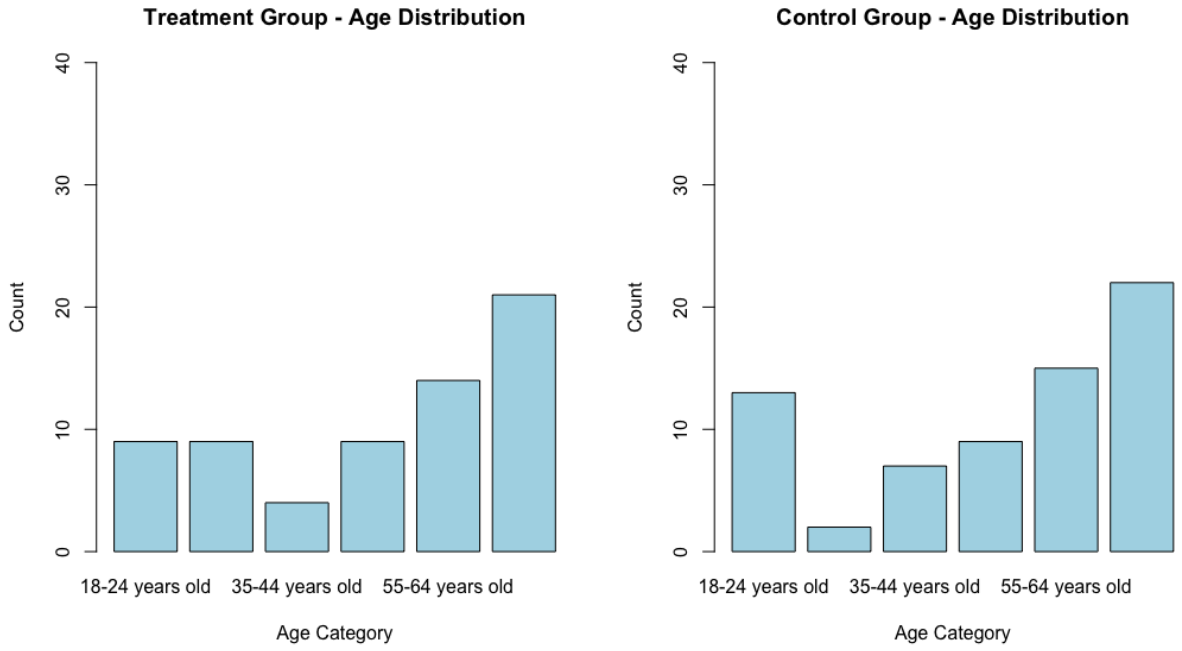


Figure 3: Age Distribution per Group

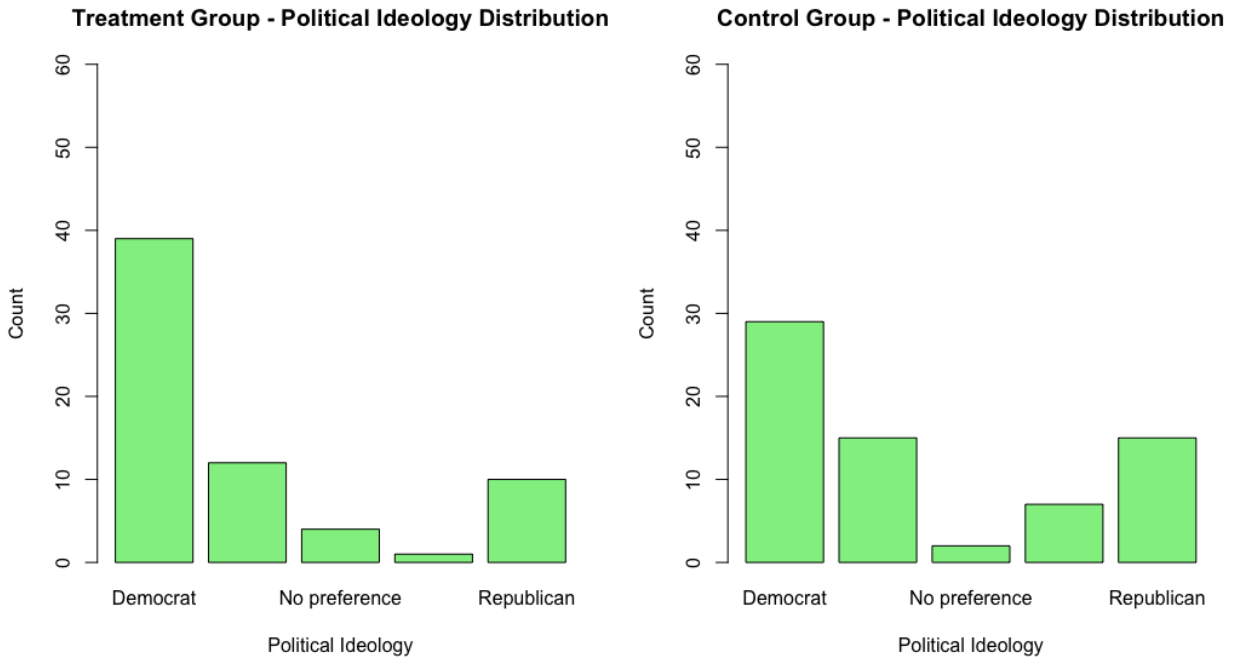


Figure 4: Political Ideology Distribution per Group

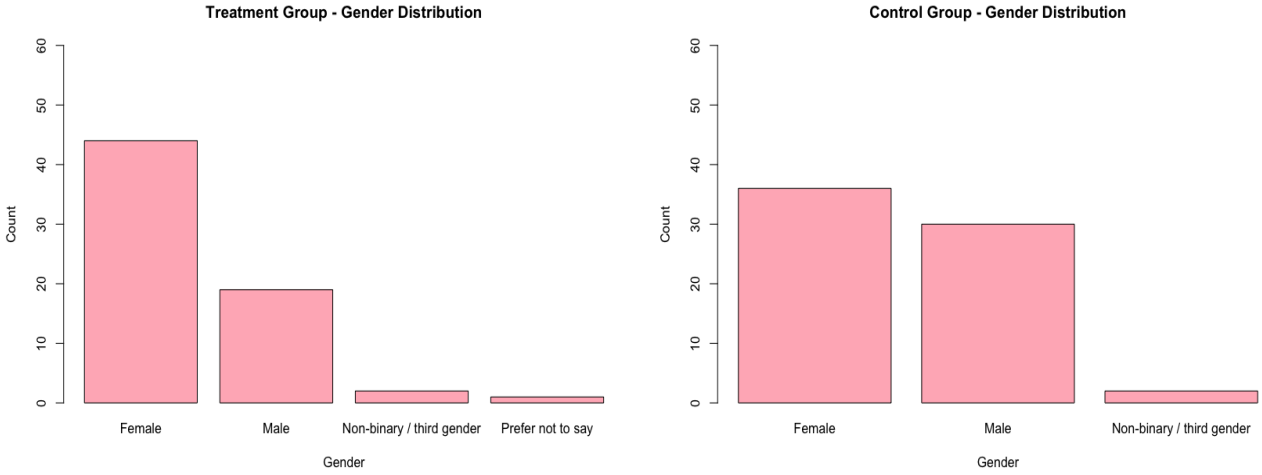


Figure 5: Gender Distribution per Group

5.3 Manipulation check

This survey incorporated a manipulation check to make sure that the survey respondents have read the questions properly and answered them not at random. All participants received 6 manipulation check questions in total during the survey. Specifically, the manipulation check consisted of two sections. During the first section, three questions were presented during the section when respondents were exposed to political memes/text. The first three questions asked if they had seen political meme/text during the study. Memes that were not shown to the respondent were included. In the second section, the final three questions were presented at the end of the survey more specifically. It asked a more detailed question concerning the meme/text they were exposed to. Here in contrast to the first manipulation question that used a "Yes/No" response, 5 options were presented. If the participant had paid attention to the questionnaire, there would be no problem in answering these manipulation questions.

The results of the first section of the manipulation check were disputable. As for the treatment group (meme) that was fed with political memes, 93.9% of the respondents answered the first manipulation question correctly. However, regarding the final two questions, 66% and 65% of the respondents provided correct answers, respectively. As for the control group (text), 86.3% of the respondents answered the first manipulation question correctly. Regarding the final two questions, 75% and 51% of the respondents answered correctly.

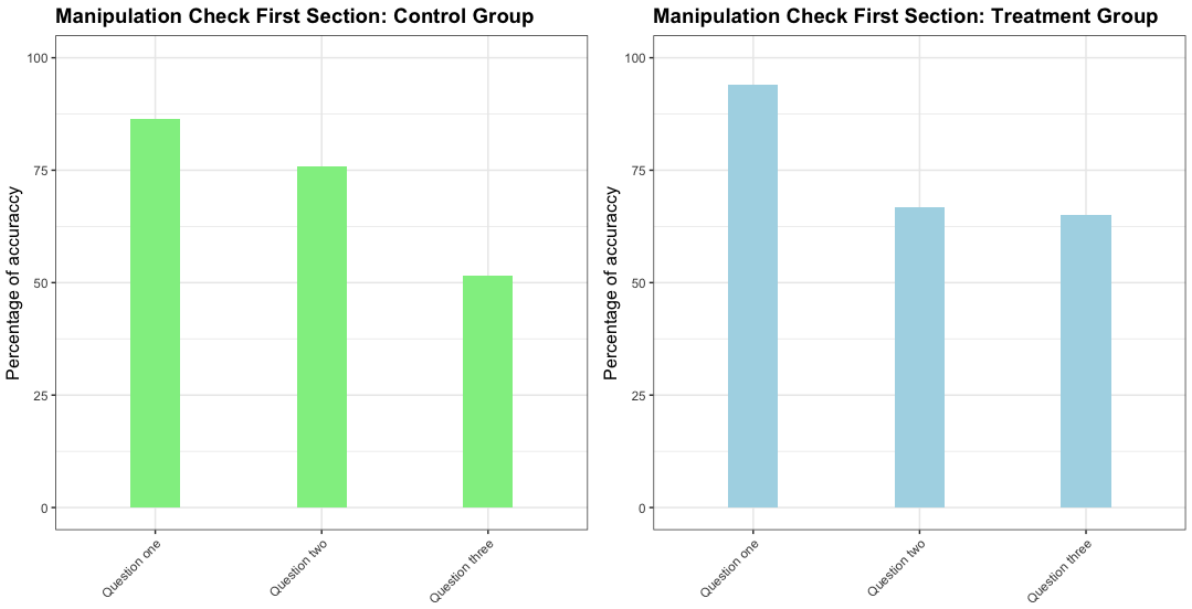


Figure 6: Manipulation Check First Section

To get a closer look and make sure that the participants went through the survey properly, the second section was conducted at the end. In contrast to the first section, both treatment and control groups correctly responded to the manipulation questions. As for the treatment group (meme), it was 77%, 90%, 84% respectively for the three questions. For the control group (text), it was 73%, 94%, 85% respectively for the three questions, demonstrating an even level across the two groups.

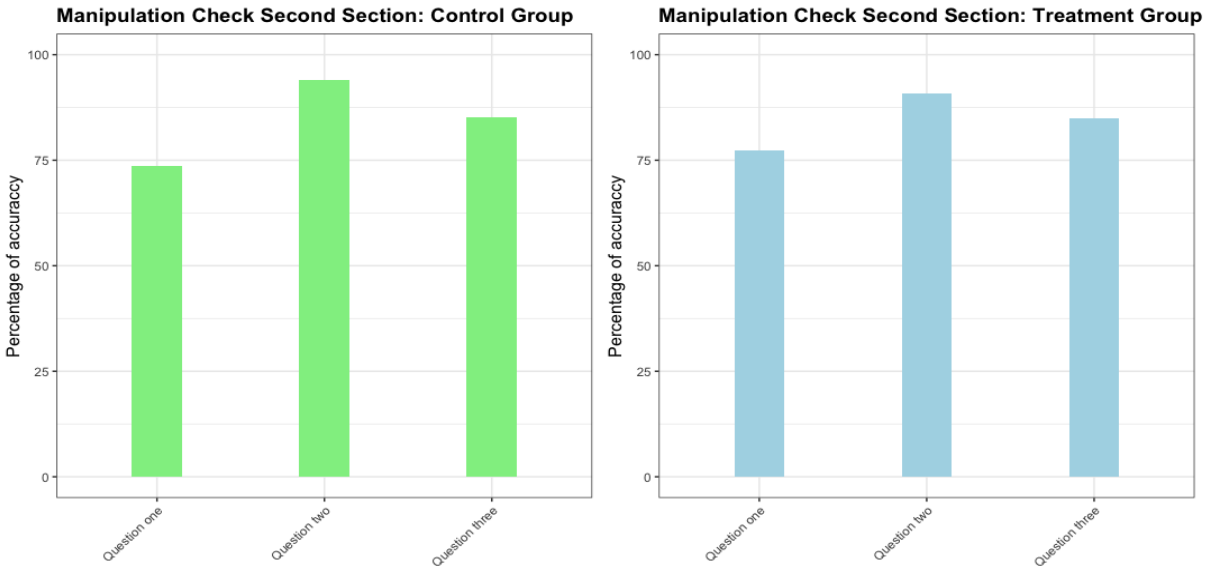


Figure 7: Manipulation Check Second Section

While the accuracy of responses in the first section was somewhat debatable, the second section, which consisted of more detailed questions, exhibited a higher rate of accuracy. This observation suggests that a significant number of participants went through the survey at hand with attentiveness, rather than responding randomly.

6 Analysis

6.1 Hypothesis one: Truthiness effect of political memes

To test the first hypothesis, "Individuals exposed to fake political memes would be more inclined into believing in the false claims in comparison to those exposed to the same information in mere text" the overall mean of perceived accurateness of the two groups were extracted for both real and fake claims as illustrated by figure 8. The perceived accurateness of the claim was on a 0 to 10 numeric scale (0 = Not at all likely, 10 = Extremely likely). Regarding the treatment group which was exposed to both fake and real political memes, their overall perceived accuracy of the memes was 3.51 for fake political memes and 4.70 for real political memes. As for the control group exposed to the same stimulus as the treatment group in text, the overall perceived accuracy of the text was 3.69 for fake political text and 4.89 for real political text. The results of the mean comparison between the two groups demonstrate that there was a minimal "truthiness effect" of political memes. On the contrary, the treatment group believed more in the political statements that were true and false. Furthermore, a Welch Two Sample t-test was conducted on the two groups for fake news, with the p-value showing at 0.3363 (Table 1). Given that this p-value is greater than the typical significance level of 0.05, there is not sufficient evidence to reject hypothesis. Therefore, the study cannot conclude that there is a statistically significant difference between the two groups regarding fake news. Another t-test was conducted on the two groups for real news, with the p-value showing at 0.3187 (Table 2). Therefore, we can conclude that while the mean comparison between the two groups regarding perceived accurateness for both real and fake news demonstrates that there is minimal "truthiness effect" of political memes, the results presented here are not statistically significant.

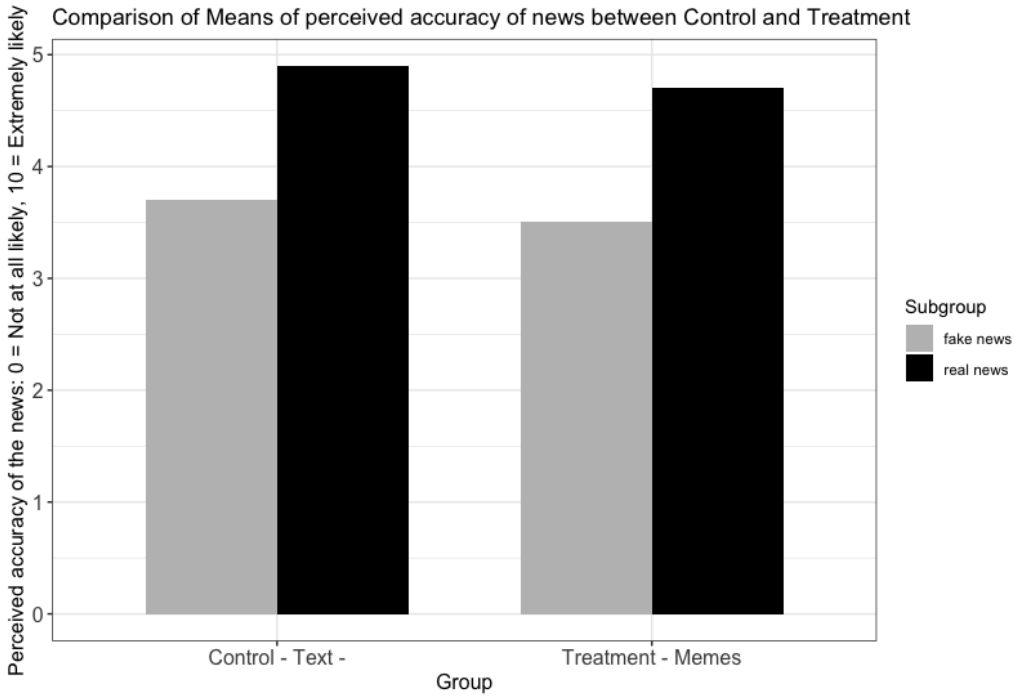


Figure 8: Comparison of Means of perceived accuracy of news between Control and Treatment

Test statistic	df	P value	Alternative hypothesis	mean of x	mean of y
-0.9619	1201	0.3363	two.sided	3.512	3.698

Table 1: Welch Two Sample t-test: Treatment group (x) and Control group (y) for fake news

Test statistic	df	P value	Alternative hypothesis	mean of x	mean of y
0.9975	1204	0.3187	two.sided	4.897	4.707

Table 2: Welch Two Sample t-test: Treatment group (x) and Control group (y) for real news

6.2 "Truthiness effect" according to political ideology

To get a closer look and investigate whether political partisanship influences "truthiness effect" of fake political memes, the data for Republicans and Democrats was analyzed separately. Figure 9 illustrates the overall mean of rated accurateness of fake political memes and the mere text version for the Republican group. As can be observed from Figure 9, the perceived accurateness rating of Republican consistent fake news is higher in the treatment group than in the control group. This finding here suggests that there could well be a "truthiness effect" specifically for Republicans who were exposed to Republican consistent fake political memes. To ascertain if this "truthiness effect" is statistically significant, a t-test was carried out between the Republican control group and Republican treatment group. As table 3 illustrates, the p-value is 0.6802 which is greater than the typical significance level of 0.05. This suggests that again, the "truthiness effect" observed here is not statistically significant.

Figure 10 demonstrates the overall mean of rated accurateness of fake political memes and the mere text version for the Democrat group. In contrast to the Republicans (Figure 9), Democrats perceived accurateness rating of fake political news decreases when they were in the form of memes. In other words, the exact opposite of the "truthiness effect" can be observed for the Democrat group as fake political memes decreases the ratings of perceived accurateness. A t-test was subsequently carried out to ascertain the statistical significance. As table 4 illustrates, the p-value was again over the typical significance level of 0.05, suggesting again that the findings here are not statistically significant.

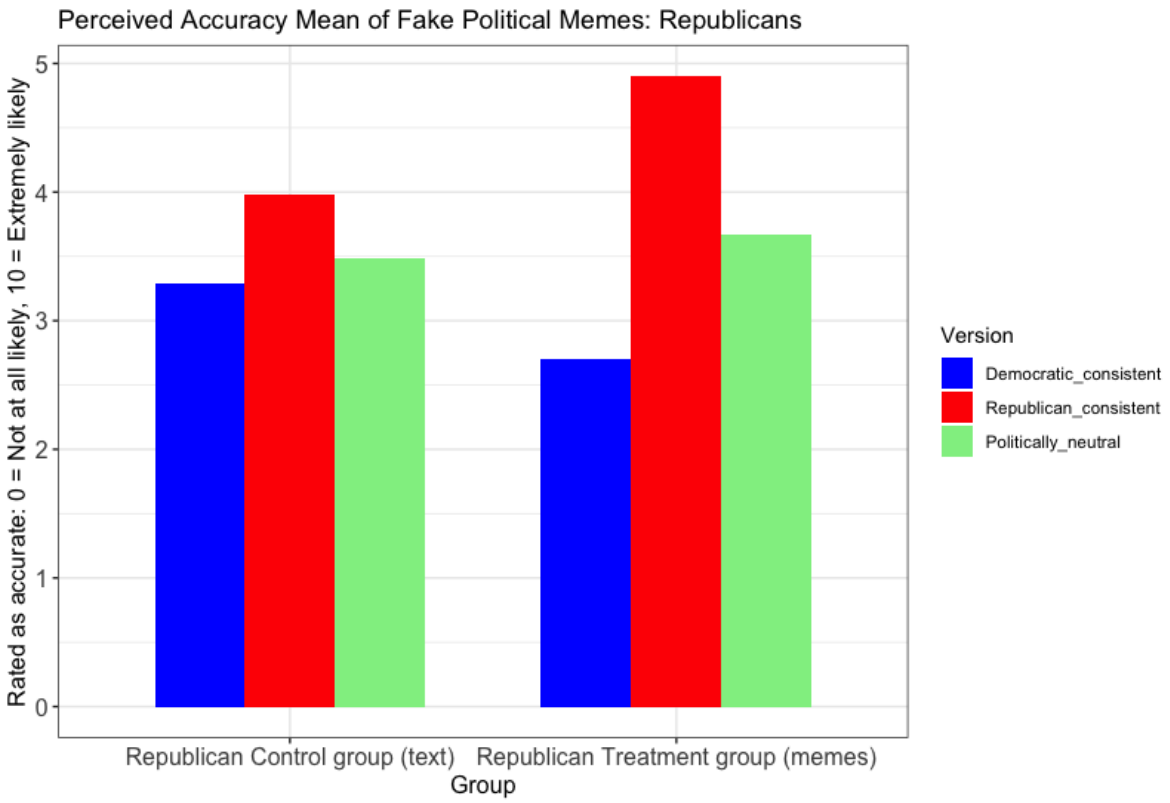


Figure 9: Perceived Accuracy Mean of Fake Political Memes: Republicans

Test statistic	df	P value	Alternative hypothesis	mean of x	mean of y
0.4128	203.7	0.6802	two.sided	3.756	3.585

Table 3: Welch Two Sample t-test: Republican treatment group (x) and Republican control group (y)

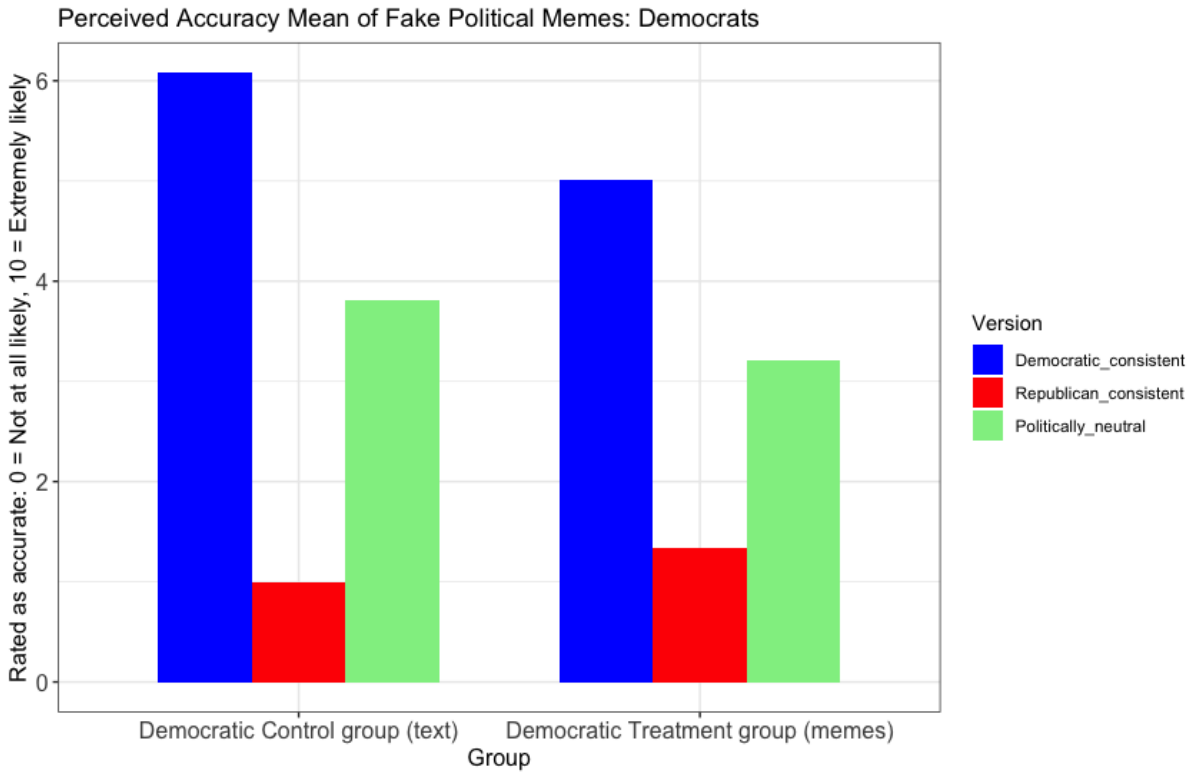


Figure 10: Perceived Accuracy Mean of Fake Political Memes: Democrats

Test statistic	df	P value	Alternative hypothesis	mean of x	mean of y
-1.487	522.9	0.1376	two.sided	3.191	3.628

Table 4: Welch Two Sample t-test: Democrat treatment group (x) and Democrat treatment group (y)

Hypothesis 2: Truthiness effect and partisanship

To tackle hypothesis 2, *"The Truthiness effect will be weaker or non-existent for highly partisan individuals exposed to politically concordant memes"*, 4 multiple linear regression analysis was conducted: 2 for the Republican group (control and treatment) and 2 for the Democratic group (control and treatment). Regarding the Republican treatment group (meme-group), three different fake politically concordant meme accuracy rating (fake_meme_repub_1, fake_meme_repub_2, fake_meme_repub_3) was used as the dependent variables, and the strength of Republican party identification (how_strong_republican) as the independent variable. The strength of the Republican party identification (how_strong_republican) was on a scale from 0 (Not very strong) to 10 (Very strong). As Table 5 illustrates, the result of the regression shows that high Republican partisanship had a coefficient of 0.556, suggesting a positive relationship with the ratings of perceived accuracy of fake politically concordant memes. However, this finding was found to be not statistically significant ($p > 0.05$). Furthermore, the sample size was small with 10 observations, limiting the statistical significance.

	Dependent variable:
	fake_meme_repub_1 + fake_meme_repub_2 + fake_meme_repub_3
how_strong_republican	0.556
	(1.818)
Constant	9.978
	(15.695)
Observations	10
R2	0.012
Adjusted R2	-0.112
Residual Std. Error	8.625 (df = 8)
F Statistic	0.093 (df = 1; 8)
Note:	*p<0.1; **p<0.05; ***p<0.01

Table 5: Regression table of strength in Republican partisanship and perceived accuracy of fake politically concordant political memes (Treatment Group)

As for the Republican control group (text-group), three different fake politically concordant text accuracy rating (fake_text_repub_1, fake_text_repub_2, fake_text_repub_3) was used for the dependent variables and the strength of Republican party identification (how_strong_republican) was on a scale from 0 (not very strong) to 10 (very strong). Like the Republican treatment group, as Table 6 indicates, the results show a positive coefficient of 1.242 which indicates that for every one-unit increase in the strength of identification with the Republican group, there is an expected 1.242 in the perceived accuracy rating of the text. Hence, the regression suggests a positive relationship between strength of identification with the Republican group and perceived accuracy rating of the text. However, it should be noted that these results were found not statistically significant ($p > 0.05$).

	Dependent variable:
	fake_text_repub_1 + fake_text_repub_2 + fake_text_repub_3
how_strong_republican	1.242
	(0.858)
Constant	2.578
	(6.748)
Observations	15
R2	0.139
Adjusted R2	0.073
Residual Std. Error	7.560 (df = 13)
F Statistic	2.097 (df = 1; 13)
Note:	*p<0.1; **p<0.05; ***p<0.01

Table 6: Regression table of strength in Republican partisanship and perceived accuracy of fake politically concordant text (Control Group*)*

Regarding the Democratic treatment group (meme-group), in a similar fashion, a multiple linear regression analysis was employed using three different fake politically concordant meme perceived accuracy rating as the dependent variable (fake_meme_demo_1, fake_meme_demo_2, fake_demo_3) and the strength of Democratic party identification (how_strong_democrat) as the independent variable. The result of the regression (Table 7) illustrates that high Democrat partisanship had a coefficient of 0.622. The positive coefficient suggests that there is a positive relationship between an increase in strength in identification with the Democratic party and higher perceived accuracy ratings for the dependent variables (fake_meme_demo_1, fake_meme_demo_2, fake_meme_demo_3). Nevertheless, this was statistically insignificant ($p>0.05$).

	Dependent variable:
	fake_meme_demo_1 + fake_meme_demo_2 + fake_meme_demo_3
how_strong_democrat	0.622
	(0.846)
Constant	9.774
	(7.304)
Observations	39
R2	0.014
Adjusted R2	-0.012
Residual Std. Error	8.446 (df = 37)
F Statistic	0.541 (df = 1; 37)
Note:	*p<0.1; **p<0.05; ***p<0.01

Table 7: Regression table of strength in Democrat partisanship and perceived accuracy of fake politically concordant memes (Treatment Group)

As for the Democratic control group (text-group), the dependent variables were three different fake politically concordant text (fake_text_demo_1, fake_text_demo_2, fake_text_demo_3) and the strength of Democratic party identification (how_strong_democrat) as the independent variable. The result of the regression (Table 8) shows a negative relationship between an increase in strength in identification with the Democratic party and higher perceived accuracy ratings for the dependent variables (fake_text_demo_1, fake_text_demo_2, fake_text_demo_3). Nevertheless, this was found statistically insignificant ($p>0.05$).

	Dependent variable:
	fake_text_demo_1 + fake_text_demo_2 + fake_text_demo_3
how_strong_democrat	-1.235
	(1.843)
Constant	29.822*
	(17.372)
Observations	29
R2	0.016
Adjusted R2	-0.020
Residual Std. Error	9.184 (df = 27)
F Statistic	0.449 (df = 1; 27)
Note:	*p<0.1; **p<0.05; ***p<0.01

Table 8: Regression table of strength in Democrat partisanship and perceived accuracy of fake politically concordant text (Control Group)

Overall, concerning Hypothesis 2, a trend could be observed in the study sample that stronger Republican partisanship has a positive relationship with increased perceived accuracy in both fake politically concordant memes and text. This suggests that there could be minor difference between the perceived accuracy of politically concordant claims whether they are in the form of memes or text, thus confirming hypothesis 2. Nevertheless, this finding was found statistically not significant. Hence, the null hypothesis cannot be rejected.

7 Discussion

The analysis tried to investigate whether political memes bring about a "truthiness effect" and whether partisanship plays a part. Unfortunately, results from the analysis could not yield any valuable results as they proved to be statistically insignificant, due to the small size of the sample (n = 134). What is more, the sample had an overrepresentation of females, Democrats, and elderly population (65 years and older) which could have contributed to the statistical insignificance of the results. The fact that there was an overrepresentation of the elderly population was concerning given that the younger generation nowadays are more active in engaging with political memes than any other generation (Tandon, et al. 2022). "Fast Food Media" as Denisova (2019) describes political memes, political memes have allowed an easy and entertaining way for the younger generation to participate in politics. Given the high engagement of the younger generation with political memes, the results could have been more valid and insightful if there was a larger proportion of the younger population in the study sample.

Despite the shortcomings of the sample and the lack of statistical insignificance in the results, the current study revealed a noteworthy trend that warrants further investigation. The observed trend indicates that the truthiness effect of political memes may have a more pronounced impact on Republicans and specifically for highly partisan Republicans when the memes align to their ideology. In contrast, Democrats are less likely to be affected by the truthiness effect of political memes. Instead, it is possible that political memes generate a "falseness effect". While I suggested that political memes create a "truthiness effect" due to their visuality, they may contrarily create a "falseness effect" due to their humorous nature. Overall, a more detailed analysis on the truthiness effect on political partisans in the United States is necessary. For that a bigger sample in which the younger generation is well represented is necessary.

5 Conclusion

5.1 Limitation and Future Research

A major limitation of survey-self report is that they are susceptible to "intentional exaggeration/suppression based on normative pressures" (Iyengar et al., 2019). Additionally, this experiment was a one-time exposure to political memes in a setting that does not resemble that of social media which leads to external validity concerns. Therefore, future research could investigate the long-term effects of political memes using a longitudinal experiment. Another limitation that could be raised is that some of the material used for the experiment was sourced from fake news that was circulating in 2016 around the time of the U.S. election (Pennycook and Rand, 2019). Given that this study was conducted in May 2023 using the 2016 news, which was 7 years after the election a time lag could have affected its internal validity. To address this limitation, future research could use more up to date memes based on fake news websites such as Snopes.com, which is a well-known fact checking website.

It is important to point out that the experimental design alerted the participants that they were taking part in assessing true and false information. This precaution could have acted as a drawback as a recent study shows that when participants are not alerted to the possibility of false claims, the "truthiness effect" nearly doubles (Jalbert et al., 2020). It is critical to note that on social media platforms, a warning label rarely accompanies political memes with fake news. Therefore, the results of this current study which was yielded through precaution of false claims may underestimate the extent of "truthiness effect" of political memes on the population.

The current thesis limited its research to the "truthiness effect" of political memes, specifically whether political memes affect our truth assessments. Future research could also

consider whether political memes influence U.S. individuals' animosity towards the other group known as “affective polarization”. While the experiment included a measurement for affective polarization after the exposure to the memes, a closer look at the affective polarization effects is much needed.

Another line of research that future research could investigate is whether the “truthiness effect” of political memes persists over time and “stick” with the subjects. Extant research has demonstrated that “truthiness effect” of a claim accompanied by a non-probative photograph can persist longer than a few seconds, in fact for more than 48 hours (Fenn et al., 2013). Future research could replicate the methodology that Fenn et al (2013) utilized, specifically conducting a second session 48 hours (about 2 days) after the initial exposure and find out whether the “truthiness effect” of political memes persists over time.

The theoretical framework of the thesis drew upon the processing fluency theory, which posits that the ease of processing information contributes to an enhanced perception of a particular statement. As we recall, scholarly work widely acknowledges that repetition plays a pivotal role in facilitating the fluency mechanism, increasing one’s perception of truth in a certain claim. This influence of repetition on perceived truthfulness extends to statements ranging from trivial statements like “House mice can run an average of four miles per hour” (Bacon, 1979) to political statements such as “Mike Pence: Gay conversion therapy saved my marriage” (Pennycook et al. 2018). Building upon the notion that repetition bolsters one’s perception of truth in claims, future research could similarly explore whether political memes shown repeatedly to a specific audience could increase perception of truth. To be specific, the study design of (Hasher et al., 1977) could be replicated whereby two groups are formed - one group which is shown political memes at two-week intervals and the other group which is exposed only once.

Finally, this online survey experiment was carried out on U.S. individuals exclusively implying that the results here are not generalizable in cross national contexts. For instance, in contexts where fake news and disinformation is far less prevalent and influential such as in Japan (Owen et al., 2020) or South Korea (Kaur et al., 2018), political memes with fake news may have little influence on our truth perceptions. Particularly in Japan, in contrast to the United States, fake news is less common within the political spectrum but tends to emerge during times of natural disasters (Ogasahara et al., 2019; Nakayama et al., 2023), and the term "fake news" is rarely invoked in public discourse. Therefore, as the example from Japan shows, the dynamics surrounding political memes and truth perceptions can differ across nations, warranting further investigation in other contexts outside of the United States.

5.2 Conclusion

Since the advent of the digital media, political memes have become an essential tool in disseminating political propaganda and misinformation. Extant research has consistently shown that visuals are more impactful than text and people tend to process visuals with less skepticism, falling into the trap of the "truthiness effect" where they accept information at face value due to cognitive ease. Despite the potential dangers of visual manipulation, there is a lack of comprehensive research on the actual impact of political memes on political attitudes. My thesis aimed to address this gap in research by examining the impact of political memes on our beliefs and shedding light on their role in distorting truth perceptions.

To do this, an online survey was conducted aimed at the U.S. population. 134 participants took part in the survey and were randomly put into two groups: the treatment group in which participants were exposed to political memes, and the control group in which participants were exposed to mere text versions of the political memes. Unfortunately, due to the small sample size,

the results that were yielded here were not statistically significant. Nevertheless, the study showed an interesting observation in which the truthiness effect could be stronger for Republican partisans. Future research could zoom into how the truthiness effect of political memes interacts with partisans in more detail with a bigger sample to gain statistically significant results.

Appendix A

Treatment Group (meme group)

True – Politically neutral

Fake – Politically neutral

True – Democrat consistent

Fake – Democrat consistent

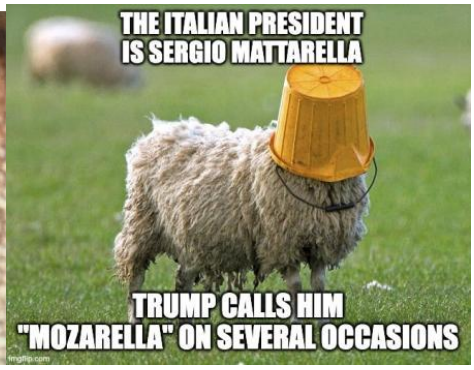
Real – Republican consistent

Fake – Republican consistent

Appendix B

[Manipulation questions]

~First section~



~Second section~

1. Hillary Clinton was one of the architects in depressing which country's minimum wage? A: Cuba, Helsinki, Haiti, Guatemala, Congo
2. How did Trump call the Italian president on several occasions? A: Mascarpone, Gorgonzola, Manchego, Ricotta, Mozzarella

3. A woman sued a Paris zoo after which animal tried to rape her? A: Cow, Hippo, Horse, Orangutan, Monkey

Appendix C

[Survey question]

Thank you for your interest in our study regarding people's opinion about political and non-political events. This survey is for a master's thesis and will take approximately around 10 minutes.

By completing the survey, you get a chance to win $100. The winner will be chosen using a lottery in the last week of June. If you wish to participate in the lottery, you will have the option to provide an email address after you complete the survey. Your email will be used exclusively to contact you in case you won the prize.

Your privacy is a priority to us. Therefore, the survey will not collect any personal information (besides the email, if voluntarily provided). Your responses will be kept completely anonymous and reported only in the aggregate.

Due to academic requirements, the analysis and the dataset will be available online at the thesis repository of the Central European University in Vienna, Austria. However, no personal information will be published. You can choose not to answer any given question by selecting "I prefer not to say" and continue the survey. You can also decide to exit the survey at any given time.

The survey can only be answered once. Thank you very much and we highly appreciate your time and effort!

By checking the "I agree" box below, you are consenting to participate in this study.

[Demographic questions]

1. How old are you? A: Under 18, 18-24 years old, 25-34 years old, 25-34 years old
2. Choose one or more races that you consider yourself to be. A: White or Caucasian, Black or African American, American Indian/Native American or Alaska Native, Asian, Native Hawaiian or Other Pacific Islander, Hispanic/Latino, Other, Prefer not to say
3. What is the highest level of education you have completed? A: Some high school or less, High school diploma or GED, Some college, but no degree, Associates or technical degree,

Bachelor's degree, Graduate or professional degree (MA, MS, MBA, PhD, JD, MD, DDS etc.), Prefer not to say

4. What best describes your employment status over the last three months? A: Working full-time, Working part-time, Unemployed and looking for work, A homemaker or stay-at-home parent, Student, Retired, Other
5. What was your total household income before taxes during the past 12 months? A: Less than $25,000, $25,000-$49,999, $50,000-$74,999, $75,000-$99,999, $100,000-$149,999, $150,000 or more, Prefer not to say
6. How do you describe yourself? A: Male, Female, Non-binary / third gender, Prefer to self-describe, Prefer not to say
7. On a scale from 0 to 10, please indicate your English proficiency A: 11 item scale (0=Not Fluent, 10=Fluent)

[Political ideology questions]

1. Did you vote in the last presidential election in 2020? A: Yes, No
2. How often do you pay attention to what's going on in government and politics? A: Always, Most of the time, About half of the time, Some of the time, Never, Prefer not to say
3. Generally speaking, do you usually think of yourself as a Republican, a Democrat, an Independent, or something else? A: Republican, Democrat, Independent, Other, No preference
4. How strong of a Republican are you? [Iff Q3 IS Republican] A: 11 item scale (0=Not very strong, 10=Very strong)
5. How strong of a Democrat are you? [Iff Q3 IS Democrat] A: 11 item scale (0=Not very strong, 10=Very strong)
6. Do you think of yourself closer as closer to the Republican or Democratic Party? [Iff Q3 IS Independent OR Other OR No preference] A: Republican, Democratic
7. Here is a 11-point scale on which the political views that people might hold are arranged from extremely liberal (left) to extremely conservative (right). Where would you place yourself on this scale? A: 11 item scale (1=Extremely liberal (left), 11=Extremely conservative (right))
8. We would like to know how you feel towards Republicans and Democrats on a scale of 0 to 100, which we call a "feeling thermometer". On this feeling thermometer scale, ratings between 0 and 49 degrees mean that you feel unfavorable and cold (with 0 being the most unfavorable/coldest). Ratings between 51 and 100 degrees mean that you feel favorable and warm (with 100 being the most favorable/warmest). A rating of 50 means you have no feelings one way or the other. A: 0 to 100 scale (Republican Party voters, Republican Party

candidates and elected officials, Republican Party, Democratic Party voters, Democratic Party candidates and elected officials, Democratic Party)

Treatment group (meme group)

[Instruction]

In the next section we will present you political memes and we would like to know whether you think the memes describe an event that actually happened. You will have the opportunity to provide your response on a **numerical scale ranging from 0 to 10.** Choosing 0 indicates that you believe that the event is not at all likely to have taken place. Choosing 10 indicates that you believe that the event is extremely likely to have taken place.

Control group (non-meme group)

[Instruction]

In the next section we will present you headlines and we would like to know whether you think the headlines describe an event that actually happened. You will have the opportunity to provide your response on a **numerical scale ranging from 0 to 10**. Choosing 0 indicates that you believe that the event is not at all likely to have taken place. Choosing 10 indicates that you believe that the event is extremely likely to have taken place.

[Affective Polarization questions]

1. How comfortable are you having **close personal friends** who are **Republicans?** A: 11 item scale (0=Not at all comfortable, 10=Extremely comfortable)
2. How comfortable are you having **neighbors** on your street who are **Republicans?** A: 11 item scale (0=Not at all comfortable, 10=Extremely comfortable)
3. How comfortable are you having **close personal friends** who are **Democrats?** A: 11 item scale (0=Not at all comfortable, 10=Extremely comfortable)
4. How comfortable are you having **neighbors** on your street who are **Democrats?** A: 11 item scale (0=Not at all comfortable, 10=Extremely comfortable)
5. Suppose your **son or daughter** of yours was getting married. How would you feel if he or she married a supporter of the **Republican party.** A: 11 item scale (0=Not at all happy, 10=Extremely happy)
6. Suppose your **son or daughter** of yours was getting married. How would you feel if he or she married a supporter of the **Democratic party.** A: 11 item scale (0=Not at all happy, 10=Extremely happy)

7. We would like to know how you feel towards Republicans and Democrats on a scale of 0 to 100, which we call a "**feeling thermometer**". On this feeling thermometer scale, ratings between **0 and 49 degrees mean that you feel unfavorable and cold** (with 0 being the most unfavorable/coldest). Ratings between **51 and 100 degrees mean that you feel favorable and warm** (with 100 being the most favorable/warmest). A rating of 50 means you have no feelings one way or the other. A: 0 to 100 scale (Republican Party voters, Republican Party candidates and elected officials, Republican Party, Democratic Party voters, Democratic Party candidates and elected officials, Democratic Party)

[Prize Email]

Thank you for your participation and time.

We deeply appreciate your contribution to this project. If you wish to participate in the $100 lottery, please write your email address below. Please, make sure that it is the correct email address, as this will be used to contact the winner in the end of June.

Feel free to contact masterthesissurvey0425@gmail.com if there are any questions. Thank you again for your participation! We appreciate your effort very much.

[Debunking section]

Founder of Corona beer makes everyone in his small village in Spain a millionaire.
-> Fake news
The billionaire did not leave much of his fortune to the individuals residing in his village according to Snopes.com (fact-checking website)

The Fox News Channel has been banned in Canada because they report false information.
-> Fake news
Since 2011 this rumor has been circulating. However, this rumor is fake, Fox news is not banned in Canada, according to Snopes.com

The small businesses near Trump tower are experiencing a miniature recession.
-> True news
This is true news. Nearly two thirds of businesses surrounding Trump tower experienced losing revenue, according to Slate.com

Yahoo suffers world biggest hack affecting 1 billion users.-> Real news

In 2016, yahoo discovered that there was security breach that allowed a hacker to break into more than one 1 billion accounts, according to Yahoo.com

Hillary Clinton was one of the architects in depressing Haiti's minimum wage.
-> Real news
It is true that the State Department (then led by Hillary Clinton as Secretary of State) strongly opposed a minimum wage increase in Haiti in 2009, according to Snopes.com

A woman sued a Paris zoo after an escaped Hippo tried to rape her.
-> Fake news
This was a fake story that was used for a hate-baiting fake news website around 2018, according to Snopes.com

At the Republican party convention finale, Trump vows to protect LGBTQ community.
-> True news
This is true and is proved in his speech at the Republican party convention finale (nbc news).

Sarah Palin claims to boycott mall of America because "Santa was always white in the bible".
-> Fake news
Palin has made no such remarks about a Boycott, according to Snopes.com

Vladimir Putin "personally involved" in US hack during the presidential election campaign in 2016.
-> True news
This is true news as reported by nbcnews.com

Depression symptoms are common among active airline pilots.
-> True news
Results of a wide-ranging survey shows that depression symptoms such as suicidal thoughts are common among active airline pilots (Los Angeles Times).

Trump hires "fake nurses" to pose with him at the hospital after the 2019 Dayton, Ohio mass shooting.
-> Fake news
This was a rumor that circulated after the shooting but it is fake news (Snope.com).

Hillary Clinton "accidentally" gave ISIS $400 million.
-> Fake news
This was a nonsensical rumor that circulated in 2016 that proved to be false (Snopes.com).

Because of lack of men, Iceland gives $5,000 per month to immigrant men who marry Icelandic women.
-> Fake news
This was fake news published on unreliable news sites in Africa (Snopes.com).

Clint Eastwood refuses to accept presidential medal of freedom from Obama, says “He is not my president”.
-> Fake news
A rumor that circulated in 2016 which proved to be false (Snopes.com)

Hillary Clinton says “Christians in America should deny their faith”.
-> Fake news
A misinterpretation of Clinton's speech which was distributed widely on the Internet in 2015.

Hitler’s Austrian house where he was born will become a care home for disabled people.
-> True news
According to bbc.com, Hitler's birthplace will become a home for disabled people.

Hillary Clinton rigged the presidential debate with Trump by communicating via secret hand signals with the moderator.
-> Fake news
This is a conspiracy theory that has been debunked (Snopes.com).

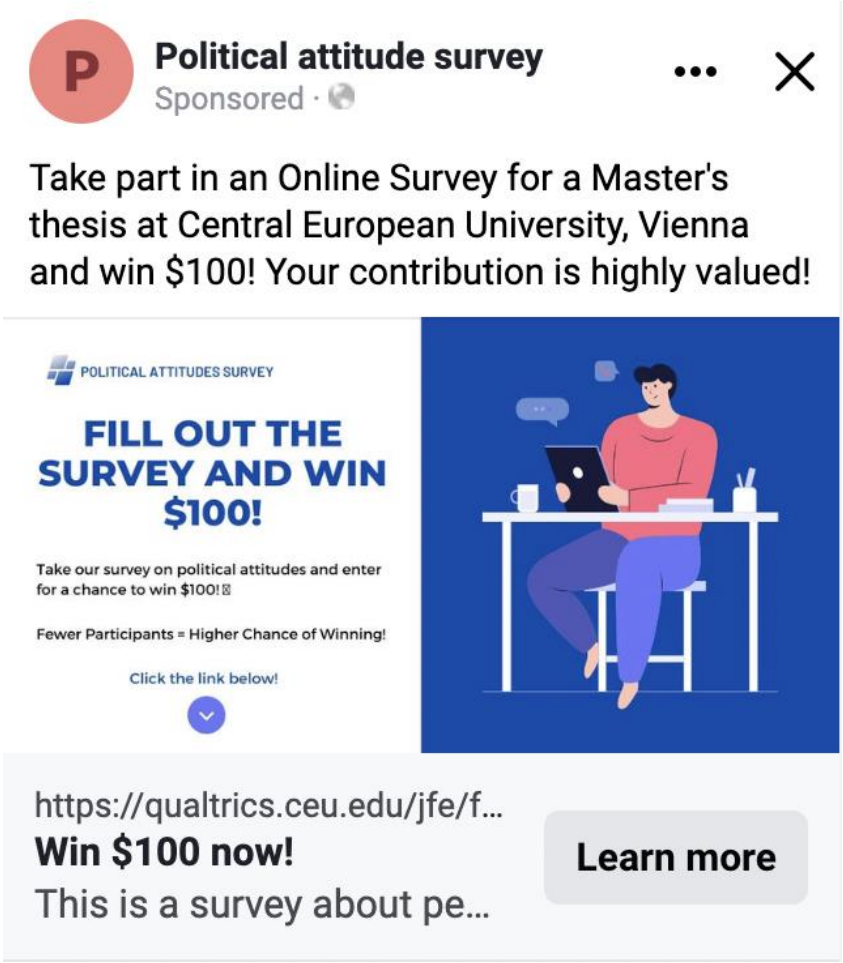
Trump lashes out at vanity fair, after it criticizes his restaurant.
-> Real news
Trump openly shames vanity fair magazine on Twitter one day after it criticizes his restaurant.

The Italian President is Sergio Mattarella, Trump calls him “Mozzarella” on several occasions.
-> Fake news
According to Snopes.com, there is no instance in which Trump referred to the president as "Mozzarella".

The Democratic party scrambles to prevent their own staff from defecting to Trump after the 2016 election.
-> True news
After the election, Senate Democrats tried to prevent two of their members from taking a post in the Trump administration (Foxnews.com).

Trump signs an executive order that bans anyone from booing.
-> Fake news
This is a rumor that circulated in 2019 that proved to be false (Snopes.com)

Pictures



Picture of Facebook Post used to distribute the survey

Thank you for your interest in our study regarding people's opinion about political and non-political events. This survey is for a master's thesis and will take approximately around 10 minutes.

By completing the survey, you get a chance to win $100. The winner will be chosen using a lottery in the last week of June. If you wish to participate in the lottery, you will have the option to provide an email address after you complete the survey. Your email will be used exclusively to contact you in case you won the prize.

Your privacy is a priority to us. Therefore, the survey will not collect any personal information (besides the email, if voluntarily provided). Your responses will be kept completely anonymous and reported only in the aggregate.

Due to academic requirements, the analysis and the dataset will be available online at the thesis repository of the Central European University in Vienna, Austria. However, no personal information will be published. You can choose not to answer any given question by selecting "I prefer not to say" and continue the survey. You can also decide to exit the survey at any given time.

The survey can only be answered once. Thank you very much and we highly appreciate your time and effort!

By checking the "I agree" box below, you are consenting to participate in this study.

I agree

I do not agree

Picture of Informed consent displayed in the survey

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