ANONYMITY, SOCIAL IDENTIFICATION, AND ONLINE SOCIAL INFLUENCE

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The Supervisory Committee certifies that this ***disquisition*** complies with North Dakota State University's regulations and meets the accepted standards for the degree of

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ABSTRACT

This experiment investigated the primacy of social identification in the online social influence process with anonymity as a contextual variable. Other key variables were perceived argument strength and attitude toward abortion. Participants (N = 229) were randomly exposed to four conditions, in which they read three pro-life or pro-choice arguments from either three identifiable people (known) or three unidentifiable people (unknown). Based on the social identity model of deindividuation (SIDE), the study tested if social identification had a greater effect on attitude in unknown conditions through depersonalization. Results demonstrated that social identification predicted attitude, but anonymity did not affect the process. In other words, depersonalization was not triggered by anonymity. Social identification also affected attitude indirectly (via argument strength). The study also found presence of both group membership-based influence (driven by social identification) and informational influence (driven by argument strength). Implications of the study, especially involving anonymity, were discussed.

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I would fondly remember their friendliness and generosity in the days to come.

DEDICATION

I dedicate this disquisition to all my teachers who trusted me, supported me, and inspired me.

They are the ones who made the most impact on my life after my parents.

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LIST OF ABBREVIATIONS

SIT.....Social identity theory

SCT .....Self-categorization theory

SIDE.....Social identity model of deindividuation

CMC.....Computer-mediated communication

CHAPTER 1. INTRODUCTION

With the advancement of newer technologies, we are increasingly attached to online platforms (e.g., Twitter, Facebook, YouTube, TikTok) to stay connected, consume information, and express views. Our exposure to certain content is often purpose driven. Sometimes we stumble upon information in a random and coincidental fashion. This exposure, however, has the power to influence our opinions and decision-making based on the information and messages in social networks (Burbach et al., 2020). In other words, the consumption of online content makes us susceptible to influence by others, especially by groups of people who espouse strong views on sensitive and divisive issues, e.g., abortion, gun control. Political elites, public institutions, activists, and business enterprises try to influence followers and participants of social media with deliberately selected content (Gabore & Xiujun, 2018). A key determinant of how we cognitively and emotionally respond to such content hinges on *how* and *to what extent* we identify with those who are the creators, sharers, or posters of the content and under what contexts (e.g., time, anonymity, channels). In short, the degree of our identification with a social group, or social identification, (Tajfel & Turner, 1985; Turner et al., 1987) plays a central role in what we make of the messages, how we form opinions based on them, and how we act. A recent study demonstrated that social identification influenced how people assessed Covid-19 risk and safety (Cruwys et al., 2020). Social identification is one of the core concepts that explain the social influence process (Spears, 2021). Extending our understanding of the role of social identification in the social influence process, thus, can help us predict what kind of behavior we might expect from people in certain conditions and contexts, especially in computer-mediated communication (CMC) environments.

Anonymity is a technological affordance (Evans et al., 2017) that provides certain advantages for the senders and receivers of information. On the flipside, the affordance also might cause negative consequences since anonymity is often associated with antisocial behavior (Chui, 2014). Being anonymous to others often enable free expression on sensitive topics that invite stigma or repercussions (Spears & Postmes, 2015). At the same time, anonymity could also be a detriment to the ones on the receiving end, especially when it comes to ethical and accountable behavior (Johnson, 1997; Marx, 1999). For example, bullying and sexual harassment are common on online platforms. Bullies often capitalize on the affordance of anonymity to prey on people as well as hiding from law. In situations when remedial action might be warranted, it is hard to trace the source of communication.

Anonymity is a major antecedent that can accentuate or attenuate the effects of social identification (Reicher et al., 1995). Anonymity refers to the "degree to which a communicator perceives the message source as unknown or unspecified" (Anonymous, 1998, p. 387). Two types of anonymity – self (strategic) and other (cognitive) – were conceptualized by scholars (Spears & Postmes, 2015). Strategic anonymity occurs when we are anonymous to other people; cognitive anonymity means other people are anonymous to us. Under certain contexts, anonymity produces a state of deindividuation in group members when they do not pay attention to their unique individuality but rather see themselves as part of a social group (Festinger et al., 1952) or demonstrate a higher level of identification (from the personal to the social self) (Reicher et al., 1995; Turner et al., 1987). The psychological state of deindividuation (Diener, 1980; Festinger et al., 1952) or depersonalization (Reicher et al., 1995; Turner et al., 1987) is often responsible for how we behave by the norms of the group we think we belong to. In other words, anonymity serves as a contextual variable in the social influence process through

deindividuation and social identification (Spears, 2021). Anonymity can shift the way we experience our personal and social self (Perfumi, 2020).

Theorists have argued that how we identify with a group or social category (e.g., race, gender, religion, ideology) has a significant influence on how we act as members of the social group. While it is not always true that belonging to a school means espousing its prejudices and preconceived notions (Le Bon, 1896/2001), past researchers found that our behavior does conform to the ingroup-consistent norms existing in the local context when social identity is salient (Reicher et al., 1995). Sometimes, even well-reasoned arguments might fail to persuade people because of people's strong identification with a certain group. Social identification can exert so powerful an influence that our behavior is guided by the feeling of oneness with the ingroup at the expense of logical arguments (Lee, 2008). Problems might arise when we are exposed to harmful, misleading, fake, or truncated information, like anti-maskers who were often exposed to cherry-picked and unverified sources of information from social media rather than traditional news sources (Stewart, 2020).

This study is an investigation into the primacy of social identification in the social influence process in CMC and virtual settings. In doing so, I adopt the social identity model of deindividuation (SIDE) as the theoretical framework (Postmes & Spears, 1998; Reicher et al., 1995). This model explains the social influence process and its relevance for facilitating collective action in CMC contexts (Spears & Postmes, 2015). SIDE has successfully explained a wide array of influence phenomena and many aspects of group processes (e.g., influence, stereotyping, group cohesion, power relations) and has been applied in diverse domains (e.g., group decision-making, cooperative learning and working, collective action). It has also explained how technological affordances (e.g., visibility vs. anonymity) interact with social

features (e.g., group identities) to affect psychological processes and outcomes (e.g., group conformity) (Spears & Postmes, 2015). Some specific cases that SIDE explained include the role of identity and the features of communication technologies in teamwork (Lea et al., 2003), anonymous collaboration (Tanis & Postmes, 2008), identity-based bonding of online communities (Ren et al., 2007, 2012), and collective action (Chan, 2010).

SIDE originally attempted to analyze social influence effects in CMC and virtual settings, but it has also been proved a useful framework to account for the effects of old and new media, e.g., social networks (Spears & Postmes, 2015). The model serves to explain how technological features (visual anonymity, the means to connect, coordinate, and coopt) interact with different levels of identities, to predict key processes and outcomes (Spears & Postmes, 2015). Contrary to past theorization, SIDE's proposition that social influence could be strengthened by anonymity and isolation has been counterintuitive and against common sense (Spears & Postmes, 2015).

As social beings, we experience a constant conflict between the need for independence (individual needs; be ourselves) and the need for interdependence (group needs; belong) (Ziller, 1964). In our attempt to meet group needs, we tend to identify with social groups mainly for two reasons: (i) to feel better or positive about ourselves (Tajfel & Turner, 1979) and (ii) to reduce social uncertainty and define our position in a social environment (Reid & Hogg, 2005). The extent of our identification shapes our perceptions, opinions, attitudes, and behavior. How we identify ourselves impacts what influences us. Research suggests that the feeling of oneness with a group is a greater force in the social influence process than argumentation when we categorize ourselves as individuals (Lee, 2008). When we identify with a social group, the norms of the group describes and prescribes how we function and behave (Hogg, 1993). Among many forms of social influence, social identification plays a key role (Spears, 2021). Thus, understanding the

role of social identification in the social influence process extends our ability to explain a wide range of phenomena in today's online environment.

In examining the primacy of social identification, I study both group membership-based influence (driven by identification) and informational influence (driven by argument strength) on attitude (Abrams et al., 1990; Abrams & Hogg, 1990). Attitude acquisition is attached to group membership (Hogg & Smith, 2007). That means, we develop attitudes that are normative of the groups we identify with. In other words, group identification or self-categorization (awareness of group membership) underpins identity-related attitude phenomena. Researchers have argued that the identity dimension of attitude is under-explored and the wider social context of attitudes relating to social categorization, group membership, and social identity has not been elaborated much (Hogg & Smith, 2007). It is necessary to investigate how social identity processes implicitly or explicitly influence attitude (Hogg & Smith, 2007). Some social influence studies might not mention identification even when it plays a central role (Spears, 2021). Overall, this study attempts to contribute to identity-based social influence scholarship.

CHAPTER 2. THEORY

This chapter contains a detailed discussion on the theoretical framework: the social identity model of deindividuation, or SIDE (Reicher et al., 1995). For a deeper understanding of the model, separate sections include summaries of associated theories such as deindividuation (Diener, 1980; Festinger et al., 1952; Prentice-Dunn & Rogers, 1982; Zimbardo, 1969), social identity theory (Tajfel & Turner, 1985), and self-categorization theory (Turner et al., 1987).

2.1. Theoretical framework

SIDE is a social identity-based framework that explains group behavior (Reicher et al., 1995). The model draws from social identity theory (Tajfel & Turner, 1985), and self-categorization theory (Turner et al., 1987). SIDE originates in the critique of deindividuation theory (Diener, 1980; Festinger et al., 1952; Prentice-Dunn & Rogers, 1982; Zimbardo, 1969), which attempted to account for antinormative behavior in crowds. Below, I discuss theories that precede SIDE to illuminate the evolution of the model.

2.2. Deindividuation theory

Deindividuation theory attempts to explain the underlying mechanism of why crowd members sometimes behave in "uncivilized and violent ways" (Diener, 1976, p. 497). The theory argues that when immersed in crowds or groups, individuals lose self-control and demonstrate antinormative behavior, e.g., aggression or violence (Diener, 1980; Festinger et al., 1952; Prentice-Dunn & Rogers, 1982; Zimbardo, 1969). A deindividuated state (i.e., the loss of selfhood) corresponds with the loss of personal reason and personal restraint. The consequence of deindividuation is the transgression of social norms, aggression, or antinormative behavior (Diener, 1980). The "deindividuated internal state is characterized by diminished self-awareness and self-evaluation and a lessened concern for the evaluation of others" (Diener, 1976, p. 497).

The reduced self-awareness and self-evaluation by others weaken self-control based on emotions such as shame, guilt, and fear, leading to the release of unrestrained behavior (Kugihara, 2001). In other words, the internal changes (emergence of a deindividuated state) allow the release of unrestrained behavior (Diener, 1976).

SIDE theorists have divided the development of deindividuation theory into two phases: *classical* and *contemporary* (Postmes & Spears, 1998; Reicher et al., 1995). The *classical* version concerns the emergence of the term "deindividuation" and a group of antecedents that produce a deindividuated state (Festinger et al., 1952; Le Bon, 1896/2001; Zimbardo, 1969). The contemporary version is characterized by the introduction and extension of the idea of self-awareness (Diener, 1980; Prentice-Dunn & Rogers, 1982). Early theorists adopted the construct of deindividuation from Le Bon's (1896b) idea of submergence in crowd psychology. Le Bon noted that, when psychologically immersed in a crowd, individuals lose their conscious personality and become subject to influence by the unconscious actions of the crowd. That means the rational control that people possess as individuals is replaced by collective frenzy, leading to potential violations of social norms and anti-normative behavior. The idea of submergence was reconceptualized as deindividuation by Festinger et al. (1952). Deindividuation theory got further impetus when Zimbardo (1969) articulated some antecedents that should produce deindividuation and uninhibited behavior (Diener, 1976). Anonymity, arousal, sensory overload, altered state of mind, novel situations, and involvement in physical actions are several input variables that might trigger deindividuation (Zimbardo, 1969). Some characterizing features of a deindividuated person include reduced self-observation and self-evaluation and reduced concern for the evaluation of others (Zimbardo, 1969).

In the *contemporary* version, the idea of self-awareness was introduced to deindividuation theory by Diener (1979). Deindividuation equates the absence of self-awareness and self-regulation (Diener, 1980). In subsequent time, Prentice-Dunn & Rogers (1982) extended this version by proposing two types of self-awareness: public self-awareness (adherence to social norms) and private self-awareness (adherence to personal norms). The inclusion of self-awareness created what Postmes & Spears (1998) termed the contemporary version of deindividuation theory. Deindividuation was defined as immersion in group activity to the extent that self-awareness is prevented (Diener, 1980). "A deindividuated person is prevented by situational factors present in a group from becoming self-aware. Deindividuated persons are blocked from awareness of themselves as separate individuals and from monitoring their own behavior" (Diener, 1980, p. 210). The *contemporary* version (Diener, 1979; Prentice-Dunn & Rogers, 1982) moved away from anonymity as the basis for a deindividuated state and considered deindividuation as the product of reduced private self-awareness brought about by arousal and immersion in the group. However, this version, too, views "deindividuated state as one of reduced self-regulation resulting in unresponsiveness to social norms and standards, leading to antinormative behavior" (Postmes et al., 2001, p. 1244-1245).

2.2.1. Critique of deindividuation theory

The key assumption of deindividuation theory is that individual identity is lost in the crowd and the result is uncontrolled, disinhibited, or antinormative behavior (Postmes & Spears, 1998; Reicher et al., 1995). Experimental evidence did not corroborate deindividuation theory's conclusion that a deindividuated state would result in transgression of general social norms and antinormative behavior (Postmes & Spears, 1998; Reicher et al., 1995). A meta-analysis of 60 deindividuation studies found little support for the existence of a deindividuated state and the

occurrence of deindividuated (antinormative) behaviors (Postmes & Spears, 1998). Overall, the results were inconclusive and did not support the theory's hypotheses that input variables such as anonymity, group size, and reduced self-awareness cause antinormative behavior (Postmes & Spears, 1998). On the contrary, some deindividuation studies even supported conclusions opposite to the main propositions of deindividuation theory (Postmes & Spears, 1998). The studies also did not show clear evidence that either self-awareness or private self-awareness caused antinormative behavior when manipulated directly or when measured as a mediator (Postmes & Spears, 1998). However, an exception was found for public self-awareness, which had a small but consistent effect on antinormative behavior when manipulated directly (Postmes & Spears, 1998).

A key focus of the critique concerns the dichotomous view of personal identity vs. lack of identity in deindividuation theory (Reicher, 1984). Also, deindividuation theory sees the self as static (Reicher et al., 1995). Deindividuation theory has twin assumptions: (1) a unique personal self is the basis of all rational action, and (2) the group impedes the functioning of selfhood (Reicher et al., 1995). According to this theory, the self is composed of unique individual characteristics independent of the context (Reicher et al., 1995). The self is regarded as a unitary construct and the sole driver of rational action and equated with personal identity (Reicher et al., 1995). Hence, the loss of personal identity means the loss of identity or individuality and the loss of rationality (Diener, 1979; Festinger et al., 1952; Zimbardo, 1969). Both classical and contemporary versions of deindividuation theory also regard the group as an antecedent for deindividuation (Reicher et al., 1995). In other words, the group is responsible for subversion of selfhood, intellect, and eventually behavioral control. In short, the "presence of others induces the absence of reason" (Reicher et al., 1995, p. 169).

2.3. Social identity theory (SIT)

Social identity theory (Tajfel & Turner, 1985) is a general analysis of group membership and group processes (Abrams et al., 2005). It explains differentiation within groups, group decision-making, computer-mediated communication (CMC), collective action, social loafing, and group culture (Abrams et al., 2005). The concept of social identification lies at the core of this theory. This concept departs from the notion of the self as a unitary construct, which was the basis of deindividuation theory (Reicher et al., 1995). SIT defines identity as a complex system with at least two subsystems—personal identity vs. social identity—existing along a continuum from personal identity (the individual aspects of oneself) at one extreme and social identity (self-defined by one's group memberships) at the other (Abrams et al., 2005). *Personal identity* may be based on idiosyncratic characteristics, while *social identity* is derived from attributes shared among members of particular social groups and categories (Abrams et al., 2005).

Since SIT proposes that groups confer rather than destroy identity, becoming part of a group thus does not mean the loss of selfhood but rather a shift from the personal to the social level of identification (Reicher et al., 1995; Tajfel & Turner, 1985). This perspective assumes that group processes are driven by inter- and intragroup social comparisons through which members strive to clarify their group's distinctiveness, positivity, and validity (Abrams et al., 2005). When social identity is salient, group members strive for positive distinctiveness for their group and this identity salience increases conformity to group norms (Abrams et al., 2005). Attraction to group members is affected more strongly by shared identity than by interpersonal similarity or attractiveness (Abrams et al., 2005). Interpersonal attraction is based on interpersonal similarities and social attraction is based on similarities to the group prototype (Hogg, 1992). A group is more likely to stick together when sharing a common bias for the

mutual attraction (Abrams et al., 2005). Additionally, an intergroup context (the presence of an outgroup) reinforces the salience of social identity (Reicher et al., 1995).

2.4. Self-categorization theory (SCT)

Self-categorization theory is a cognitive or social cognitive theory about the functioning of the social self-concept (Turner et al., 1987). Self-categorization refers to the "cognitive groupings of oneself and some class of stimuli as the same (identical, similar, equivalent, interchangeable, and so on) in contrast to some other class of stimuli" (Turner et al., 1987, p. 44). Self-concepts stem from the perception of intra-class similarities and inter-class differences between stimuli (Turner et al., 1987). Depending on situations, any particular self-concepts get activated or salient as a function of the interaction between the characteristics of the perceiver and the situation (Turner et al., 1987). Ingroup-outgroup categorizations are called social categorizations, and categorizations depend upon comparisons of stimuli (Abrams et al., 2005). The salience of any level of self-categorization varies with the frame of reference (the pool of psychologically relevant stimuli) in category formation (Abrams et al., 2005). Self-categories tend to become salient at one level less abstract than the self-category in terms of which they are being compared (i.e., the personal self becomes salient where comparisons are restricted to ingroup members) (Abrams et al., 2005).

SCT is an extension of social identity theory and seeks to explain group formation, social influence, and stereotyping (Postmes et al., 2000; Reicher et al., 1995). SCT conceptualizes three levels of abstraction in the self-concept: a) superordinate (e.g., human being/human identity/inter-species), b) intermediate (e.g., female, Black/social identity/intergroup), and c) subordinate (e.g., I/personal identity/intragroup) (Turner et al., 1987). How a person defines himself or herself determines whether the person acts as an individual, as a part of a group, or as

a representative of a common humanity (Reicher et al., 1995). In other words, the values and believes that underpin one's behavioral choice and conformity to the norms depends on the way the person categorizes himself or herself (Reicher et al., 1995). The category "describes and prescribes one's attributes as a group member" (Hogg, 1993, p. 92). In other words, the category shapes the person's perception, views, and feelings about the world (Abrams et al., 1990). When a specific social identity becomes salient, group members' self-regulation, self-perception, and conduct become ingroup stereotypical and normative (Hogg, 1993). The term *salience* refers to "the situation in which a specific social categorization and associated identity becomes the psychologically engaged and operational basis for self-conception and behaviour and for the perception and construal of others" (Hogg & Smith, 2007, p. 98). This self-categorization process underlies three common social influence phenomena: norm formation, conformity, and group polarization (Abrams et al., 1990). Social categorization creates stereotype- or norm-consistent expectations regarding attitudes and conduct from the members of the relevant social category (Hogg & Smith, 2007). When the norm is identified in a group, the self-categorization by members produces normative behaviour including subscription to attitudes (Hogg & Smith, 2007). In other words, self-categorization/social identification makes members conform to group norms and demonstrate attitudes associated the category. Group norms are "defined as regularities in attitudes and behavior that characterize a social group and differentiate it from other social groups" (Hogg & Reid, 2006, p. 7). Conformity concerns private acceptance of a norm that defines the group people identify with (Hogg & Smith, 2007)

Sometimes, the self becomes transformed from an individual to a group member by the process called depersonalization (Abrams et al., 2005). Depersonalization is not the loss of individual identity (as in the concept of deindividuation), it is the change from the personal to the

social level of identity (Turner et al., 1987). It is a process whereby "people come to perceive themselves more as the interchangeable exemplars of a social category than as unique personalities" (Turner et al., 1987, p. 50). Through depersonalization a person takes the ingroup prototype as a norm, the ingroup stereotype as a self-description, and the ingroup's interests as self-interest, and a threat to the group as a threat to the self (Abrams et al., 2005). The more salient and meaningful a social category becomes, the more depersonalized group members will be (Abrams et al., 2005). SCT focuses not on how groups behave in a certain way, but on how individuals are able to act as a group at all (Turner et al., 1987). The process of self-categorization is highly flexible, fluid, and context-bound (Spears, 2021).

SCT argues that group immersion should enhance the corresponding social identity instead of personal identity (Reicher et al., 1995). Anonymity does not necessarily accentuate or attenuate social identity such as gender, race, school, organization. The impact of anonymity depends on the context. If the group identity is already salient, then anonymity should intensify social identification, i.e., cause greater depersonalization (Reicher et al., 1995). The contrary might happen when group salience is low and group boundaries are indistinct.

2.5. Social identity model of deindividuation (SIDE)

SIDE emerged as an alternative to deindividuation theory (Postmes, 2010) to account for the inconsistencies and inconclusive results of deindividuation studies (Reicher et al., 1995). This model assumes an identity-based approach drawing from social identity theory (Tajfel & Turner, 1985) and self-categorization theory (Turner et al., 1987) and explains how group behavior is affected by anonymity and identifiability (Postmes, 2010). Contrary to deindividuation theory's assumption of the self as static, SIDE adopts a dynamic view of the self-identity that can switch between personal to social depending on the context (Reicher et al.,

1995; Tajfel & Turner, 1985; Turner et al., 1987). SIDE defines the self as grounded in one's individual characteristics as well as in one's social roles (Reicher et al., 1995; Tajfel & Turner, 1985; Turner et al., 1987). SIDE also sees the group as a source of behavioral standards rather than their nemesis (Reicher et al., 1995). Groups confer rather than destroy identity (Tajfel & Turner, 1985). Therefore, when immersed in a group or crowd, people act in ways that are controlled and meaningful rather than uncontrolled and irrational (Reicher et al., 1995). The norms of the group become the norms of the group members, and hence collective behavior is more socially regulated (e.g., Kugihara, 2001). Since members go by the group norms, immersion does not lead to anti-normative behavior rather promotes actions which are normative within the group. SIDE argues that when group identity is salient, group members are likely to demonstrate greater social identification with the group and adjust their behavior to the group-consistent norms. So, identification (how a person identifies himself or herself) lies at the core of group behavior. In other words, the underlying mechanism of group behavior is how people identify themselves when in groups. People might regard themselves as individuals in some conditions and as members of a social group in some other.

Deindividuation theory argues that certain contexts give rise to the psychological state of deindividuation (i.e., loss of individuality, selfhood, personal reason, self-control). SIDE theorists, however, prefer the term "depersonalization" over "deindividuation" to refer to a process, whereby a person perceives herself or himself as a member of a social category rather than as an idiosyncratic individual (Turner et al., 1987). Depersonalization does not entail the loss of individual identity or selfhood in the group; it is the switch from the personal to the social level of identification (Turner et al., 1987).

Deindividuation theory argues that group immersion and anonymity (which is characterized by a lack of personalizing cues or individuating information) induce a deindividuated state (loss of selfhood) and thereby promoting antinormative behavior (Zimbardo, 1969). SIDE argues that group immersion and anonymity can enhance social identity and accentuate the members' adherence to the standards associated with the relevant social category (Reicher et al., 1995). When people have a salient group identity (they already know they belong to a certain group), they may act in a more restrained manner, compatible with the group norms.

Anonymity is a key contextual variable in both deindividuation theory and SIDE. Deindividuation theory associates anonymity with the loss of self-awareness and argues that the transgression of general social norms results from the anonymity of a person within a group (Diener, 1980). However, SIDE argues anonymity might not lead to uninhibited behavior by triggering deindividuation. It might depersonalize the group members (promote a shift in the kind of self-awareness from the personal to the group), and they would exhibit behavior normative within the group or consistent with the existing group norms (Reicher et al., 1995). "The so-called 'antinormative behavior found in the crowd, according to deindividuation theory, is actually a display of what is normative within the crowd" (Postmes & Spears, 1998, p. 254).

SIDE attempts to explain the effects of visibility and anonymity in both intragroup and intergroup contexts (Lea et al., 2001). SIDE predicts that within an anonymous group (members are unidentifiable to each other) where a shared social identity is stressed, the members are more likely to demonstrate the group-norm consistent behaviors compared to the group where personal identity is highlighted (Reicher et al., 1995). Depersonalization of the self occurs and attraction towards the group increases when social identity is highlighted in an anonymous group (Lea et al., 2001). In other words, in a context where a common identity is available, depersonalization

accentuates the salience of group identity, thereby enhancing the group's influence (Postmes et al., 2001). Through the process of depersonalization, individuals come to perceived that their group identity is more salient than other identities (i.e., individual or personal identity) in a particular context (Spears & Postmes, 2015). The prevalent identity (social or personal) is accentuated in certain contexts, which in turns drives group behavior (Huang & Li, 2016).

When depersonalized, group members treat the group norms associated with the salient social identity as a set of behavioral standards and rituals to regulate their actions (Huang & Li, 2016). "Whereas deindividuation implies reduced self-regulation, depersonalization implies increased social or group-based self-regulation" (Spears & Postmes, 2015, p. 15). Anonymity is a critical antecedent of depersonalization (Huang & Li, 2016). Anonymity means the absence of individuating information that helps identify a person as a unique individual. Therefore, in an anonymous context, with a salient social identity, depersonalization should happen and the effects of social identification should be heightened (Lee, 2004). That means, in anonymous interactions, group members will experience depersonalized perceptions of self and others and feel increased attraction to the ingroup (Lea et al., 2001). In situations where there is a lack of personalizing information, people come to perceive themselves and others as representatives of social groups rather than as idiosyncratic individuals and subsequently become more susceptible to group influence (Lee, 2006).

SIDE consists of two elements associated with anonymity: cognitive and strategic aspects (Reicher et al., 1995). The cognitive side (*anonymity of others*) reduces private self-awareness, and the strategic side (*anonymity to others*) decreases social accountability to others (Spears & Postmes, 2015). Group immersion and lack of personalizing cues can enhance social identity and thus conformity to the standards associated with the relevant social category (cognitive). On the

other hand, in a situation where people are non-identifiable to the outgroup but identifiable to the ingroup their ability to over-ride the outgroup will be maximized (strategic) (Reicher et al., 1995). Thus, SIDE predicts that when a social identity is emphasized, visual anonymity can enhance group salience and its related effects (group identification). In other words, anonymity should accentuate the effects of the salient social identity and the dominant normative response associated with it (Postmes et al., 2001; Reicher et al., 1995). Intergroup encounter (which is characterized by the awareness of the presence of an outgroup) is also supposed to enhance the salience of group identity (Lee, 2004). In a crowd situation, there will be a quick switch from personal identity and social identity and a focus on group norms existing in the context (Kugihara, 2001). These group norms become the members' norms. Hence, their behavior is regulated by the group.

2.6. Social influence

Social influence refers to a "change in a person's cognition, attitude, or behavior, which has its origin in another person or group" (Raven, 1965, p. 371). Social influence arises when people are uncertain about what to believe (Spears, 2021). It is an intraindividual process derived from the primed norm and transmits between individuals (Postmes et al., 2001). Two major theoretical approaches to the origin of social influence are interpersonal dependence and group membership (Abrams et al., 1990). Interpersonal dependence is conceptualized as normative influence (conforming to the positive expectations of others) and informational influence (private acceptance of the message) (Deutsch & Gerard, 1955). Group membership is conceptualized as self-categorization and referent informational influence (Turner et al., 1987).

In the *interpersonal approach*, social influence is presumed to stem from people's dependence on others for information or a positive self-image (Abrams et al., 1990). There are

two types of interpersonal dependence: informational and normative influence (Deutsch & Gerard, 1955). Informational influence is strongest if group members experience uncertainty and lack of objective evidence to evaluate stimuli in the environment (Abrams et al., 1990; Deutsch & Gerard, 1955). Informational influence concerns subjectively valid *reasons to agree* (i. e., compelling arguments, evidence, justification) and arises in situations concerning uncertainty and ambiguity about the correct position and accurate beliefs about reality (Abrams & Hogg, 1990). Normative influence is based on subjectively experienced *pressure to comply* and derives from individuals' need for social approval, liking, acceptance by the group (Abrams & Hogg, 1990). Normative influence exerts its force when the individual person's actions are presumed to be under actual or anticipated surveillance by the group (Abrams et al., 1990; Deutsch & Gerard, 1955). Conformity to the group's demands and expectations occur because of the group's power to reward, punish, accept or reject individual members (Abrams et al., 1990). The second approach, *group membership*, stresses the individual's self-definition as a group member (Abrams et al., 1990) and originates in social identity theory (Tajfel & Turner, 1985) and self-categorization theory (Turner et al., 1987). Social influence occurs when a person perceives himself or herself as a group member or identifies with a social category (Abrams et al., 1990). This self-categorization affects his or her perceptions, views, feelings, of the world and eventually his or her action, and the person demonstrates the same characteristics and responses as other members of the in-group or social category (Abrams et al., 1990).

The two theoretical approaches have been used in examining three social influence effects: norm formation (Sherif, 1936), group conformity (Asch, 1956), and group polarization (e.g., Burnstein et al., 1973 & Sanders & Baron, 1977). In a series of three experiments on these three operationalizations of social influence, Abrams et al. (1990) concluded that self-

categorization could be a crucial determinant in social influence by informing individual group members. “The extent of informational and normative influence may depend very largely upon whether the source of influence is regarded as a member of a person’s own category” (Abrams et al., 1990, p. 117). That means, social identification plays a key role in the influence process.

If communicators share a common social identity, they appear to be more susceptible to group influence, social attraction, stereotyping, gender typing, and discrimination in anonymous CMC (Postmes et al., 1998). Interaction via CMC can heighten group salience and, hence, conformity to a group norm because of the scarcity of individuating information (Lee, 2006). Because CMC settings are characterized by physical isolation and visual anonymity, a salient social identity is likely to depersonalize individuals, i.e., people will come to perceive themselves as members of social groups rather than idiosyncratic individuals and thus become susceptible to group influence (Postmes et al., 1998; Turner et al., 1987).

2.7. Social identification

There are many factors that contribute to social influence, but “group identity arguably lies at the heart of much social influence we might not even recognize as such” (Spears, 2021, p. 384). Social influence works through social identification in the events of uncertainty or lack of experience or knowledge when people assume that their ingroup members have a similar view that can inform them (Spears, 2021). Social identity is most likely to guide group influence when different social/self-categorizations are possible (Spears, 2021). Social identity is “…that part of an individual’s self-concept, which derives from his knowledge of his membership of a social group (or groups) together with the value and emotional significance attached to that membership” (Tajfel, 1978, p. 63). Social identity describes the nature or content of a particular identity (Ellemers et al., 2002). Social identification is the extent to which a person adopts and

identifies with a social category (Turner et al., 1987), or the strength of association with the social category (Ellemers et al., 2002). The degree of association determines individuals' inclination to behave in terms of their group membership (Ellemers et al., 2002). Social identification is composed of three components: *affective* (the extent to which people identify with a particular social group), *cognitive* (the extent to which people self-categorize as group members), and *evaluative* (the extent of group self-esteem or relative social status of the ingroup) (Ellemers et al., 1999). Research suggests that group commitment (the *affective* component) is the main aspect of social identity that influences people's tendency to behave in terms of their group membership and people tend to feel more committed to self-selected (or achieved) group memberships than imposed or assigned group memberships (Ellemers et al., 1999).

There is recurrent debate about whether social influence is an interpersonal phenomenon (i.e., arising out of interpersonal attraction or interdependence), or it is better explained by social identity-related factors such as group norms (Postmes et al., 2005). To resolve this interpersonal-identity dualism, Postmes et al. (2005) conducted a series of three experiments and concluded that social influence could be partially traced to both interpersonal and identity-based origins and that it was futile to search for a primary or ultimate source of social influence at either end. However, findings suggest that social identity plays a role even in groups which were formed on the basis of interpersonal relations (personal bond groups) rather than group-based identification (shared identity groups) (Postmes et al., 2005). In a similar vein, Ren et al. (2012) investigated the role of both group identity and interpersonal bonds in how online communities develop member attachment. The identity-based condition was characterized by group categorization, group information, homogeneity, and intergroup competition. On the other hand, the interpersonal bond condition foregrounded personal information, interpersonal similarity, and

interpersonal comparisons. Results from a six-month field experiment showed that both conditions contributed to community building, but group identity had a greater effect on member attachment, and the effect is stronger on newcomers than old-timers.

2.8. Attitude

Attitude is the "psychological tendency, expressed by evaluating a particular entity with some degree of favor or disfavor" (Eagly & Chaiken, 1993, p. 1). Attitude is also defined as "a mental and neural state of readiness to respond, organized through experience, exerting a directive and/or dynamic influence upon the individual's responses to all objects and situations" (Allport, 1935, p. 810). Attitude comprises both conscious and nonconscious predispositions and action orientations towards things, people, groups, and ideas (Hitlin & Pinkston, 2013).

"Attitudes are windows on identity" (Hogg & Smith, 2007, p. 89). A person expressing attitudes is communicating who she or he is (Hogg & Smith, 2007). Social categorization, group membership, and social identity play a central role in shaping attitudes and attitudinal phenomena (Hogg & Smith, 2007). Attitudes represent the ideological systems attached to social groups and categories (Hogg & Smith, 2007). The social identity analysis of attitudes treats social identification with a group as a key influence on attitude importance and attitude strength (Hogg & Smith, 2007). Reference groups and identification with the primary groups have been essential in attitude acquisition, attitude change, and attitude expression (Hogg & Smith, 2007). Therefore, social identity theorists have treated as an aspect of group life, rather than an aspect of individuality (Hogg & Smith, 2007). The social identity perspective on attitudes identifies three common motives for attitude phenomena – (i) the need to understand reality, (ii) the need to achieve a positive and coherent self-concept, and (iii) the need to relate to others and communicate an appropriate impression (Hogg & Smith, 2007). All of these phenomena can be

described as the process of self-categorization and social identification (Hogg & Smith, 2007). The social identity perspective describes self-categorization based depersonalization as the cognitive basis of social identity related to attitude dynamics, and referent informational influence as the associated social identity related influence process (Hogg & Smith, 2007).

CHAPTER 3. LITERATURE REVIEW

This chapter contains the review of relevant literature. The review is clustered around mainly three key themes in research based on SIDE and associated theories: group immersion and anonymity, social identification as a mediator, and social identification as a moderator.

3.1. Group immersion and anonymity

Group immersion and anonymity are two of the antecedents that were frequently studied in deindividuation (Postmes & Spears, 1998) and SIDE research (see Huang & Li, 2016 for a review; e.g., Reicher, 1984). SIDE studies operationalized deindividuation as visual anonymity, personal information anonymity, physical isolation, and uniform appearance (Huang & Li, 2016). SIDE theorists used the term "deindividuation" rather than "depersonalization" in their model to "denote a wide range of effects researchers using deindividuation manipulations had found" (Spears & Postmes, 2015, p. 30). Here, deindividuation manipulations refer to how a person is represented rather than she or he just being anonymous. In addition to being anonymous, a might be represented as a member of a group (group immersion) that is also likely to induce a deindividuated state. Deindividuation manipulations (e.g., keeping members physically isolated, visually anonymous, or putting them in groups rather than representing them as individuals) will not necessarily cause depersonalization (accentuation of the social self). Research suggests that when group identity is not salient, anonymity would not lead to more group influence (Lee, 2007). That means, deindividuation effects encompass a variety of outcomes (i.e., conformity might or might not occur). On the other hand, depersonalization happens only under certain contexts and conditions and trigger greater conformity.

Early SIDE studies manipulated group immersion (group vs. individual) and anonymity (anonymous vs. non-anonymous) to examine their effects on social influence phenomena such as

group conformity (Reicher, 1984) and group polarization (Lea & Spears, 1991; Spears et al., 1990). Anonymity has been established as an important antecedent for depersonalization that would lead to greater conformity and polarization (Lea et al., 2001; Postmes & Spears, 1998).

The formative study for SIDE argued that immersion in groups brings behavior under control of norms relating to the appropriate social identity instead of deregulating behavior (Reicher, 1984). That means, deindividuation should accentuate the salience of social identity (by shifting attention from individual to group response) and, in turn, greater group conformity. The effects of deindividuation on behavior depend on the group context. In this 2 (scientists vs. social scientists) x 2 (individual vs. group) x 2 (anonymous/deindividuated vs. identifiable/individuated) design, deindividuation was operationalized as visual anonymity (Reicher, 1984). Outcome variables were pro-vivisection attitudes, behavioral intention, and behavioral projection. Results showed that scientists demonstrated more pro-vivisection attitudes in groups than in individual conditions. Additionally, when deindividuated (anonymous) and in groups (group immersion), scientists tended to show higher levels of pro-vivisection attitudes (their group norm was pro-vivisection). This challenged deindividuation theory's notion that immersion in a group should produce a loss of identity and lead to less socially controlled behavior. However, one limitation of the study was that it did not find the predicted interaction between group immersion and visual anonymity effects on normative responses. The interaction was observed in one of the two groups and on only one of three dependent measures.

Investigating the effects of group and deindividuation manipulations (often equated with anonymity manipulations) on group polarization in a CMC environment, Spears et al. (1990) found that greatest group polarization happened when people were in groups and deindividuated. In this study, participants were either placed in groups or treated as individuals (group vs.

individual condition) and made visually anonymous to each other and physically separate (deindividuation vs. individuation). Deindividuating participants who were immersed in groups demonstrated greater polarization in the direction of a pre-established group norm than deindividuating discussants who were treated as individuals. This study extended Reicher's (1984) analysis of the group polarization paradigm. Participants were asked to give their opinion on four divisive issues: nationalized industries, nuclear power stations, subsidy on theatres, and positive discrimination. No main effects on group polarization were significant but an interaction effect (deindividuation x group condition) was found, such that attitudes were significantly more polarized towards the group norm in the deindividuated-group condition than in the deindividuated-individual condition. Identity was made salient a priori by telling participants that they were either treated as group members or as individuals.

Lea & Spears (1991) also found similar results, in support of SIDE. This study found that group (group vs. individual) and deindividuation (deindividuated vs. individuated) have an interaction effect on group polarization, such that highest polarization occurred when participants were in groups and deindividuated and lowest polarization happened when participants were treated as individuals and deindividuated. There were no main effects for group and deindividuation and the covariate (pre-discussion opinion scores). The authors argued that greater polarization did not stem from uninhibited behavior or the reduced perception of social cues but rather group norms directly influenced the outcome of group decision-making in CMC, under conditions of group salience (i.e., when group membership or identity is salient). The behavioral outcome depends on what identity is made salient (personal or social/group) in the social context (deindividuated-group or deindividuated-individual).

Meta-analyses have supported that anonymity promotes greater conformity to group norms, both in offline (Postmes & Spears, 1998) and online contexts (Huang & Li, 2016). Anonymity within the group, characterized by the lack of personal cues, accentuates the salience of group identity and attenuates personal identity (Lea et al., 2001; Postmes & Spears, 1998). Anonymity has been operationalized as physical isolation (participants were located in separate rooms; "physical anonymity"), lack of visual cues (participants could not see each other or pictures of each other; "visual anonymity"), and unavailability of personal information or absence of personal cues (name, age, favorite color, TV show, movie or color; "personal information anonymity") (Huang & Li, 2016). A meta-analysis of 13 studies conducted in online contexts demonstrated that the relationship between anonymity and conformity produced conflicting results, but coupled with a salient group identity, anonymity increased members' adherence to group norms, with visual anonymity having the largest effect (Huang & Li, 2016). When group boundaries are clearly demarcated, visual anonymity should reduce intragroup differences and enhance members' adherence to group norms, whereas in situations it is difficult to distinguish between group boundaries, deindividuation should decrease the salience of social identity and thus decrease conformity to group norms (Spears et al., 1990). Consistent with self-categorization theory (Turner et al., 1987), the analysis also found that the presence of an outgroup moderated anonymity effects on conformity, such that the awareness of an intergroup context accentuated the salience of participants' group identity and further enhanced their conformity to group norms (Huang & Li, 2016). Anonymity increases the salience of group norms (Postmes & Spears, 1998; Reicher et al., 1995) because the loss of visual cues reduce cognitive perceptions of interpersonal differences within groups and isolated individuals look to

group norms to guide their attitudes and behavior (Chan, 2010). Research suggested that the social self can actually come to the fore when people are isolated (Reicher et al., 1995).

3.2. Social identification as mediator

Researchers have found the mediating role of social identification in the deindividuation effects on adherence to group norms/group conformity (Chen & Wu, 2015; Kim & Park, 2011; Lee, 2004, 2006; Postmes et al., 2001), group polarization (Lee, 2007; Postmes et al., 2005), group attraction (Lea et al., 2001, 2007), group cohesiveness (Lea et al., 2007), collaboration (Tanis & Postmes, 2008), and attitude change (Chung, 2019).

One study showed that the effects of depersonalization on group conformity were both direct and indirect via group identification (Lee, 2004). When group or social identity was made salient in an intergroup context, deindividuated conditions (operationalized as uniform virtual appearance of CMC partners) triggered depersonalization and subsequent conformity behavior. This study gave direct support to SIDE.

Extending SIDE, Lee (2006) argued that increased social identification did not fully explain why people become more susceptible to group influence in the absence of individuating information (i.e., deindividuated conditions). Depersonalization enhanced group influence "not only by elevating the ingroup feelings but also by modifying the cognitive representation of the group norm" (p. 440). That means, the perceived group norm functioned as a mediator (alongside group identification) in the social influence process in small groups.

A similar study (Lee, 2007) found that deindividuation accentuated group identification and triggered greater opinion polarization. That means, lack of individuating information enhanced group identification and prompted group members to polarize their opinions in the direction of group norms. This study sought to examine the effects of deindividuation on group

polarization in CMC and the potential mediating role of group identification, public self-awareness, and perceived argument quality. It did not find a direct link between deindividuation and group polarization but observed that public self-awareness mediated group identification effects on opinion polarization, and group identification has a direct impact on polarization.

Postmes et al. (2001) argued that anonymity could facilitate social influence by increasing group members' identification with the group. In other words, group or social identification mediated the effects of deindividuation (operationalized as visual anonymity) on group conformity (to the primed norm) in a CMC context. This study was the first direct investigation of the social influence process and direct test of the SIDE model and included the key variable of group norm. Results suggested that greater behavioral conformity to the primed norm occurred in the anonymous group.

Another study showed self-categorization (awareness of group membership) mediates the effects of visual anonymity (an operationalization of deindividuation) on group attraction (Lea et al., 2001). Visual anonymity within the group enhanced self-categorization (depersonalized perceptions of self and others), which in turn increased group attraction. Visual anonymity did not have a direct effect on group attraction, indicating that self-categorization (which is the cognitive aspect of social identification) mediated anonymity effects on group behavior (operationalized as group attraction).

Lea et al. (2007) investigated the effects of visual anonymity (visibility vs. anonymity) on group attraction and group cohesiveness – two variables that are used to predict other group-based outcomes like social influence (Forsyth, 1990; Hogg, 1993). Results showed that visibility increased attraction and cohesiveness for visually cued groups (where participants saw each other live as in Zoom today but did not hear each other), and anonymity increased attraction and

cohesiveness for non-visually cued groups (where participants exchanged texts without seeing each other). Additionally, the effects of anonymity manipulations were mediated by self-categorization (awareness of group membership or depersonalization). The study refined the SIDE model by showing that videoconferencing not only can raise perceptions of individuating cues, it can also enhance more group-based perceptions when the group itself is visually cued. The outcome of these two opposing visibility effects depended on the degree to which either visually cued groups or interpersonal concerns were made salient for the self.

Kim & Park (2011) found that the effect of virtual uniform appearance (an antecedent for deindividuation) on conformity is mediated by group identification. That means, group identification induced by uniform appearance of the members in CMC interactions increased their intention to conform to group norms. Group identification was also positively associated with conformity intention. However, a high level of visual similarity might induce perceived deindividuation, which in turns can decrease the conformity intention, because too much similarity concerned individuals about their deprived uniqueness in the group.

The mediation effects of group identification were also observed in gaming behavior (Chen & Wu, 2015). Anonymity (to other gamers) encouraged cheating behavior via group identification. That is, people gaming anonymously tended to cheat when cheating was the norm within the group they identify with. So, their behavior was normative. A study on dyadic online collaboration showed that when dyad members considered themselves part of an overarching social group, anonymity could improve the quality of collaboration as a function of a shared social identity (Tanis & Postmes, 2008). Chung (2019) found that people who strongly identified with the anonymous group demonstrated greater levels of change in their attitudes than those

who did not. In other words, stronger social identification increases social influence in the anonymous condition.

While several studies demonstrated that deindividuation influences group conformity, group polarization, group attraction and cohesiveness via increased social identification, Postmes et al. (2005) extended SIDE by finding that social identification might have an effect on these relationships via two routes. This study investigated the effects of depersonalization (depersonalized vs. individuated) and group formation (interpersonal bond-based vs. shared identity-based) manipulations on group polarization. In individuation conditions, group members were individually identifiable through portrait pictures, while in depersonalized conditions they were not identifiable to each other. Group formation was manipulated by assigning participants to either a personal bond group (that should be formed based on interpersonal relationships; *identity was induced*) or a shared identity group (that should be formed based on a pre-existing social identity; *identity was deduced*). Results showed that greater group polarization happened when groups were formed out of interpersonal relationships and group members were individuated (identifiable to each other). On the other hand, in shared identity groups, greater attitude polarization occurred when group members were depersonalized (not identifiable to each other). This study confirmed SIDE's prediction that depersonalization leads to greater group polarization in groups in which some preexisting identity could be deduced.

Lee (2008) investigated both informational and normative influence in a single study. He found that normative (pressure to conform) and informational influence (reasons to comply) act differently based on the availability of individuating information. When people viewed interactants as independent individuals, their conformity decisions mostly based on argument quality (informational influence). On the other hand, when they perceived interactants as a group

of indistinguishable individuals, they were more susceptible to “we-feelings” for conformity (normative influence) in less consideration of argument quality (p. 662). That means, self-categorization impacted which source of influence would be stronger. It is another instance of the central role of group identification in the social influence process.

3.3. Social identification as moderator

Group identification has also been studied as a moderator on conformity behavior (Barreto & Ellemers, 2002; Chan, 2010). The effect of anonymity was found to be greater on pro-group behavior (normative behavior) for people with low group identification (Barreto & Ellemers, 2002). Another study generated similar finding (Chan, 2010). Instead of directly manipulating anonymity, Chan manipulated communication channel (i.e., email). Email is a CMC channel characterized by reduced visual cues (compared to FtF interaction). Email is supposed to create a deindividuation effect like other forms of anonymity, e.g., visual anonymity and physical isolation. Results from a field experiment showed that conformity to pro-group behavior is greater among low identifiers than high identifiers.

CHAPTER 4. RESEARCH DESIGN

This chapter describes the research design, research goals, research questions, and the hypothesis. This was a survey-based experiment to understand the primacy of social identification in the online social influence process with anonymity as a contextual variable. The study also aimed at investigating the role of argument strength in the social influence process. Two research questions and one hypothesis were formulated in concurrence with two specific research goals.

4.1. This study

This study is an investigation into the primacy of social identification in the social influence process. Key variables include social identification (continuous measure), anonymity manipulations (known vs. unknown), argument type (pro-life vs. pro-choice), perceived argument strength, and attitude toward abortion. The abortion issue has been chosen for two reasons. One, this topic is helpful for understanding social influence since the media and peers are two major sources young people learn about sex and abortion from (Altshuler et al., 2015). Two, abortion is a divisive issue among Americans but there is a lot of situationists who lie between the two extremes: absolute pro-life vs. absolute pro-choice (Smith & Son, 2013). That means, differing levels of social identification with either a pro-life or pro-choice position are likely to impact their attitudes toward abortion. This will confirm whether some commitment to the group is essential for group identity-based influence to occur (Ellemers et al., 2002).

Two main camps on abortion debates are pro-life and pro-choice. A pro-life position advocates the rights of the fetus as life, hence against abortion; a pro-choice position stresses the rights of the woman to have control over her body by seeking abortion (Smith, 2005). Although abortion is a divisive issue, the majority falls in the middle between two polar opposites (Smith

& Son, 2013), indicating that in addition to social identification, some other forms of influence (e.g., argumentation) might influence the way people look at the issue and express their attitudes. Rye & Underhill (2020) advise against dichotomizing attitudes toward abortion as either pro-life or pro-choice because of "a substantial intermediate group of situationists" (p. 1829). Understanding this middle group might make the issue of abortion less polarized and less divisive (Rye & Underhill, 2020). Research suggests that about 8% of Americans favor an absolute pro-life position, and about 31% an absolute pro-choice position, with the majority falling in-between in terms of supporting legal abortions (Smith & Son, 2013).

This study treats social identification as a continuous variable to determine how participant attitude towards abortion varies as a function of the levels of social identification. In a 2 (known vs. unknown) x 2 (pro-life vs. pro-choice) between-subjects factorial design, I investigate how participants' exposure to pro-life or pro-choice arguments in known conditions (where the people making the arguments are presumed to be identifiable through personal information such as names, hobbies, interests) and unknown conditions (where identifiable information about the people making the arguments is unavailable; personal information anonymity) impact their attitude toward abortion. A study on peer influence has shown that exposure to comments of different valence (negative or positive) in an online setting can impact readers' attitudes, especially when they identify with other commenters (Chung, 2019).

The research questions and the hypothesis were formulated based on SIDE and empirical studies. Even though we know from extant literature that social influence occurs through social identification, little is known about how social identification directly influences attitude when deindividuation (induced by personal information anonymity, which is a lack of identifiable information of commenters) and argument type (pro-life vs. pro-choice) are manipulated. SIDE

studies have shown that people tend to conform to perceived norms and expectations of their ingroup when social identity is salient and fellow group members are deindividuated in CMC settings (Chen & Wu, 2015). The main proposition of SIDE is when *social identity* is salient, group members tend to conform to the prototypical norms and beliefs of that group (Postmes & Spears, 1998; Reicher et al., 1995). On the other hand, when *personal identity* is salient, they are more likely to stick to their own beliefs and values and act accordingly, as unique individuals. Deviating a little from the initial propositions of SIDE, Spears (2021) argued, "Even when a group identity is not explicitly evoked or made salient, identity-based group influence may still play a role" (p. 368-369). Group anonymity is an important condition to produce deindividuation effects. A state of deindividuation increases the awareness of a social identity (MacSwain, 2019).

This study examines the effects of the cognitive aspect of anonymity (*anonymity of* others to the participants). Research suggests that anonymity enhances group salience, group identification, and group cohesion (e.g., Lea et al., 2001; Lee, 2007). On the other hand, individuating information (that helps identify a person as a unique individual) and visibility (when participants can see each other face to face or via photographs) focus attention on the individuals in a group, detracting from group identity (Spears, 2021).

Groups form around members and around shared social categorial associations (MacSwain, 2019). Because this study investigates social influence of a psychological group through a direct measure of social identification, group members were not put in actual group interaction situations. The idea is to simulate an everyday online situation when people are exposed to views of anonymous and identifiable online media users (e.g., Facebook posts from strangers, friends, acquaintances, peers).

> A psychological group is the "one that is psychologically significant for members, to which they relate themselves subjectively for social comparison and the acquisition of norms and values (i.e., with which they compare to evaluate themselves, their abilities, performances, opinions, etc., and from which they take their rules, standards and beliefs about appropriate conduction and attitudes), that they privately accept membership in, and which influences their attitudes and behaviour)… it is not simply a group which one is objectively in, but one which is subjectively important in determining one's actions" (Turner et al., 1987, p. 1-2).

It is not necessary for an aggregate of individuals to be physically co-located to form a social group. As for crowds, Le Bon (1896/2001) argued, "Thousands of isolated individuals may acquire at certain moments, and under the influence of certain violent emotions…the characteristics of a psychological crowd" (p. 2). That means physical co-presence of the people who form a social group is not a necessary condition for social influence to occur. SIDE theorists made a similar proposition: "It is not co-presence and interaction per se but rather their effect upon category salience that is the key psychological mechanism underpinning group behaviour" (Reicher et al., 1995, p. 184).

4.2. Research goals, research questions, and hypothesis

This study had two main goals. First, it tried to understand the primacy of social identification in the online social influence process, with anonymity as a contextual variable. Second, it attempted at seeing what kind of social influence occurred, if at all, via social identification and argument strength. In doing so, two research questions and one hypothesis were formulated. The following section states the research questions and the hypothesis and discusses the rationale and their connection to the research goals.

The first research question (Goal#1) was as follows:

RQ1: *How do anonymity and argument manipulations influence participant attitude toward abortion?*

RQ1 was formulated to learn the main effects of anonymity and argument type on attitude toward abortion and their interaction effects on the dependent variable. SIDE predicts that in anonymous groups where a social identity is salient, members' behavior is significantly influenced by the norms associated with that group (Lea et al., 2001; Lea & Spears, 1991). Social influence should only result if a person identifies with the group, and this identity is salient (Spears & Lea, 1992). SIDE research found that that group influence would be stronger under anonymous conditions (Postmes et al., 2001). The reason for formulating a research question rather than a hypothesis was this study did not directly observe interactions among four people in a condition (the participant and three people making the arguments). The purpose was to explore how social influence occurred in known or unknown and pro-life or pro-choice conditions when no actual interactions happen among people. In this study, social identity was primed or made salient by asking participants to rate themselves on a one-time social identification scale. The goal was not to directly measure the role of social identification on attitude, but how participants' identification with a social group implicitly exerted an influence on their attitude.

This study proposed one hypothesis (Goal#1) to directly test SIDE.

H1: *Social identification and anonymity would interact to affect attitude such that strong pro-life participants would demonstrate more anti-abortion attitude in unknown conditions than in known conditions and strong pro-choice participants would demonstrate more pro-abortion attitude in unknown conditions than in known conditions.*

This hypothesis was derived from SIDE. According to the model, the lack of individuating information (unknown conditions) directs individuals' attention to a shared group identity over personal identity, and this heightened awareness of the group identity leads to group membership-based behaviors (Postmes & Spears, 1998; Reicher et al., 1995). The underlying mechanism is depersonalization (seeing oneself as members of a social group rather than a unique individual). Should the deindividuation manipulation (operationalized by personal information anonymity) have an influence, anonymity is supposed to heighten the effects of social identification on attitude. In other words, anonymity would contribute to the depersonalization of participants. Then, depersonalization would lead to group-consistent behavior. For example, if depersonalization occurs, strong-life participants (lower social identification scores indicating more pro-life) would demonstrate strong anti-abortion attitude (lower attitude scores) in unknown conditions than in known conditions.

The second research question (Goal#2) was as follows:

RQ2: *How do social identification and argument strength influence attitude toward abortion?*

RQ2 was formulated to understand how strongly social identification influenced attitude toward abortion. Another goal was to understand the conditions under which social identification and argument strength might have different levels of impact on attitude. The reason for inclusion of argument strength in the research question is to examine informational influence (involving *reasons to agree*) (Abrams & Hogg, 1990) aside from group membership or social identity-based influence (involving *individual's self-definition as a member of a social category*) (Abrams et al., 1990). Group membership-based influence is more aligned with normative influence (involving *pressure to comply*) (Abrams & Hogg, 1990). This study did not look at normative

influence since participants did not interact with the authors of the arguments. There was also no measure to examine the emergence of group norms. Research suggests that when people viewed interactants (in this case, the three people making the arguments) as independent individuals, their conformity decisions mostly based on argument quality (informational influence); on the other hand, when they perceived interactants as a group of indistinguishable individuals, they were more susceptible to "we-feelings" for conformity (normative influence) in less consideration of argument quality (Lee, 2008, p. 662). Again, since this study did not observe interactions, a research question instead of a hypothesis was formulated.

CHAPTER 5. METHOD

This chapter details the method and procedure of data collection and analysis. An online survey-based experiment was conducted to examine the effects of social identification, anonymity manipulations, and argument strength on attitude toward abortion. Separate sections give details on participants and recruitment, procedures of survey administration, and measures (social identification, perceived argument strength, attitude), and statistical analyses (t-tests, ANOVA, regression, correlations, and mediation).

5.1. Participants

Upon approval from the Institutional Review Board (IRB), students from an introductory communication class in a mid-western university in the US were invited. Credit was given for research participation. College students appeared to be an appropriate population for this study for several reasons. First, young people constitute the largest section of online media users. A survey showed that 99 percent of the 18-29-year-olds in the US are internet users (Johnson, 2021). Second, 84% of young adults ages 18-29 use social media such as Facebook (Pew Research Center, 2021), indicating that they are most likely to come across debates on controversial topics like abortion in online environments and engage. Student samples are used for easier recruitment, low cost of administration, and assumed low response bias (Arnett, 2008). Some researchers argue that generalizing from student samples to the general public can be problematic, but also observed that students vary as much as the general public (Hanel & Vione, 2016). It is possible to generalize findings from students to the nonstudent (adult) population (Peterson, 2001).

Data were collected between April 13, 2022, and May 9, 2022. In all, 234 students took the survey. Five incomplete responses were discarded, and the rest (N = 229) were retained for

analysis. The sample consisted of 119 male (52%) and 109 female participants (47.6%). The participants were predominantly White (*n* = 196; 86.5%), followed by Asian (*n* = 12; 5.2%), Black or African American (*n* = 12; 5.2%), others (*n* = 5; 2.2%), and Hispanic, Latino or Spanish (*n* = 2; .9%). Participant ages ranged from 18 to 31 years (*M* = 19.19, *SD* = 1.51). To get the average duration (in minutes) of each response (*M* = 8, *SD* = 5.2), five outliers were discarded.

Participants were randomly assigned to one of the four conditions in a 2 (known vs. unknown) x 2 (pro-life vs. pro-choice) between-subjects design experiment. Each condition exposed participants to either (1) three pro-life arguments made by three anonymous persons, (2) three pro-life arguments made by three persons with some identifiable information, (3) three pro-choice arguments made by three anonymous persons, and (4) three pro-choice arguments made by three persons with some identifiable information. Of the total participants (*n* = 229), 57 were assigned to the pro-life known condition, 56 to the pro-life unknown condition, 57 to the pro-choice known condition, and 59 to the pro-choice unknown condition. Three arguments from three different persons were used to examine if there was some degree of group influence (or, social influence) in effect and if that influence affected their attitude toward abortion. It takes at least three persons to be a group (Keyton, 2022). The three persons whose arguments were chosen also represented a social category (a pro-life or pro-choice camp).

5.2. Procedure

Participants were directed to a survey website (Qualtrics) through a link shared on the school management learning platform. Upon consenting, participants first filled out a pre-experiment social identification measure indicating how strongly they identify with a pro-life or pro-choice position. Participants then advanced to the next page containing either three pro-life or pro-choice arguments made by either three anonymous people or three identifiable people. In

the known condition, participants saw personal profiles of the authors of arguments, which included their first name, major, age, favorite TV show/movie, favorite color, favorite music genre, and other (if any). Rains & Scott (2007) identified 11 types of identity information, e.g., name, geographic location, picture, and argued that increased knowledge of each type of information decreased the perceived anonymity of the source. In the unknown condition, no personal profiles of the authors of arguments were shared. In both conditions, the participants remained anonymous and were not required to share any personal information of their own. Next, participants filled out a perceived argument strength measure for each of the three arguments. Afterwards they completed an abortion attitude scale and gave demographics including age, ethnicity, and gender, and answered a question about anonymity manipulation. Lastly, before exiting the survey site, participants were asked to rate the importance of the abortion issue on a one-item scale.

5.3. Materials

Arguments: Three actual pro-life and pro-choice arguments have been collected from the comment spaces of YouTube videos involving the abortion debate (See Appendix). In the known condition, participants saw three fictional gender-neutral names and their personal profile information: first name, major, age, hobby, favorite TV show, favorite color, and favorite music genre. In the known condition, none of this information was shown. In a lab experiment, Lee (2008) found that these seven pieces of biographical information individuated those who shared their comments with the participant. In other words, the biographical information was successful in manipulating anonymity in a lab setting.

The comment spaces of four YouTube videos were utilized. Arguments were selected based on inclusion and exclusion criteria. Comments based on some degree of reasoning were

chosen, and those based on experiences or stories from other people's lives were excluded. It is possible that people with strong bias might share fictious experience or life stories of other people. If some reasoning (excluding hard facts) is involved, the arguments would appear to be independent of this bias. The three arguments from each side (pro-life and pro-choice) were matched for *subject matter* (rights of fetus, birth control, and quality of life), *intensity* (low, moderate, and high), and *length* (the total word count), using researcher's judgment. No pilot tests were run. For example, the first argument in both pro-life and pro-choice groups was centered around the debate over the rights of fetus and were low in intensity. As for length, the three pro-life arguments totaled 119 words and the three pro-choice arguments totaled 122 words. The arguments were also edited for grammar, punctuation, and spelling mistakes.

5.4. Manipulation checks

Anonymity: To test whether personal profile information significantly make authors of the arguments identifiable, participants were asked a single question following the attitude measure. The 5-point scale ranged from *1 = none at all to 5 = a great deal*. They are asked to recall the time when they read the three arguments and use the scale to answer the question: "When you read the information from each person, did you get an impression of who the person was?" The scale was reverse coded to make sure higher scores indicate higher degrees of perceived anonymity. To test whether there was a difference between known (both pro-choice and pro-life) and unknown (both pro-choice and pro-life) groups, an independent samples t-test was conducted. No difference in anonymity was found between known (M = 3.21, SD = .96) and unknown groups (M = 3.06, SD = 1.07), $t(224.94) = 1.11$, $p > .05$.

Argument strength scores were calculated for each of the three arguments across all four conditions. Then an aggregate score was obtained by summing up and averaging the individual

scores for each argument. To test whether there was difference in strength between pro-choice and pro-life arguments, an independent samples t-test was conducted. As expected, no significant difference was found between the strengths of pro-life arguments (M = 2.88, SD = 1.02) and those of pro-choice arguments (M = 3.02, SD = 1.04), $t(227) = -1.06$, $p > .05$.

5.5. Measures

Social identification was measured using a 100-point single item scale with two poles and a neutral mid-point (*0 = absolute pro-choice, 50 = neutral*, and *100 = absolute pro-life*). The scale was reverse coded to match with the attitude scale, in which higher scores indicated more pro-choice and lower scores indicated more pro-life. It was the first measure in the survey. The question was: "In regard to abortion, where do you rate yourself on the following scale?" the question accompanied a note: "Please note that the lower the score the more pro-choice you are; the higher the score the more pro-life you are. The mid-point (50) indicates you identify yourself as neither pro-choice nor pro-life (neutral)." Past researchers utilized a single-item identification (SISI) scale (Postmes et al., 2013; Reysen et al., 2013). In a meta-analysis of 16 widely used single-item measures, Postmes et al. (2013) demonstrated that the reliability of SISI was high. Compared to other measures, the construct of social identification appeared to be adequately homogenous to be operationalized with a single item. This study used a 100-point scale to sufficiently account for the small differences in the varying degrees of identification.

Perceived argument strength was measured with the scale developed by Zhao et al. (2011). It had nine items but for this study eight of them were adapted for both pro-life and pro-choice positions. For example, the first item was "The statement is a reason for – (blank) that is believable." It was adapted like this: "The statement is a reason for <u>supporting a pro-life position</u> that is believable." Participants responded on a 5-point Likert scale, from 1 = strongly disagree to

5 = strongly agree. The seventh item ("The statement put thoughts in my mind about not wanting to support a pro-life position") was reverse-coded. The scale was highly reliable. Since the scale was used for each of the three arguments across the four conditions, 12 reliability scores were obtained. Pro-life known, argument 1 (α=.92), pro-life known, argument 2 (α=.92), pro-life known, argument 3 (α=.94), pro-life unknown, argument 1 (α=.94), pro-life unknown, argument 2 (α=.95), pro-life unknown, argument 3 (α=.94), pro-choice known 1(α=.91), pro-choice known 2 (α=.93), pro-choice known 3(α=.95), pro-choice unknown 1 (α=.94), pro-choice unknown 2 (α=.93), and pro-choice unknown 3 (α=.95).

Attitude was measured with a 14-item Abortion Attitude Scale (Sloan, 1983). Sample items included "The supreme court should strike down legal abortions in the United States" (reverse-coded) and "The decision to have an abortion should be the pregnant mother's." Participants responded on 5-point Likert scale, from 1=strongly disagree to 5=strongly agree. The scale was reliable (α =.95). Seven items were reverse coded to obtain the aggregate attitude score. The higher the attitude scores the more pro-choice a person is and the lower the score more pro-life a person is.

CHAPTER 6. RESULTS

This chapter discusses the results obtained through a series of statistical analyses (descriptives, t-tests, ANOVA, regression, mediation, and correlations). Two separate sets of analyses were presented: one set directly involving the research questions and hypothesis and the other set (additional analyses) aiming to complement the answers pertaining to the two questions.

6.1. Results and analyses

To answer RQ1 (which asked how anonymity and argument manipulations influenced attitude), a 2 (anonymity) x 2 (argument type) factorial ANOVA on attitude was performed. There were no significant main effects for anonymity, $F(1, 228) = .84$, $p = .36$, partial $\eta 2 = .004$, such that participants who were in the known conditions ($M = 43.87$, $SD = 14.90$) and those who were in the unknown conditions ($M = 42.04$, $SD = 16.10$) did not significantly differ in their attitude toward abortion. There were also no significant main effects for argument type, $F(1, 228) = .003$, $p = .96$, partial $\eta 2 = .00$, such that participants in pro-life groups ($M = 42.90$, $SD = 15.32$) and participants in pro-choice groups ($M = 43.0$, $SD = 15.72$) did not significantly differ in their attitude toward abortion. The interaction effects were not significant as well, $F(1, 228) = 3.29$, $p = .071$, partial $\eta 2 = .014$.

To test H1 (which predicted that social identification and anonymity would interact to affect attitude, such that strong pro-life participants would demonstrate more anti-abortion attitude in unknown conditions than in known conditions and strong pro-choice participants would demonstrate more pro-abortion attitude in unknown conditions than in known conditions), a 3 (social identification) x 2 (anonymity) factorial ANOVA on attitude was performed. There were significant main effects for social identification, $F(2, 228) = 262.95$, $p < .001$, partial $\eta 2 = .70$, such that participants who were strong pro-life ($M = 26.91$, $SD = 10.80$), moderate ($M =$

43.13, *SD* = 7.69), and strong pro-choice (*M* = 59.46, *SD* = 6.38) differed significantly in their attitude toward abortion. However, there were no significant main effects for anonymity, *F*(1, 228) = 1.04, *p* =.31, partial $\eta 2$ = .005, such that participants in known conditions (*M* = 43.87, *SD* = 14.87) and participants in unknown conditions (*M* = 42.04, *SD* = 16.10) did not differ significantly in their attitude toward abortion. The interaction effects were not significant as well, *F*(2, 228) = .49, *p* =.62, partial $\eta 2$ = .004. Of the participants, 32.3 % were strong pro-life (*n* = 74), 36.7% were moderate (*n* = 84), and 31% were strong pro-choice (*n* = 71).

To answer RQ2 (which asked how social identification and argument strength predicted attitude), two sets of regression were run: multiple linear regression and hierarchical multiple regression. However, before doing so, the dataset was split into half (pro-life, *n* = 113; and pro-choice, *n* = 116). The split was required because running the analysis on the entire dataset, when the argument strength scale was included, would produce unanalyzable results. For example, in pro-life groups, argument strength and social identification would always correlate negatively, if some relationship does exist. The reason is social identification scale is a scale with two opposite poles (higher scores indicating more pro-choice and lower scores indicating more pro-life). Thus, in pro-life groups where participants were exposed to pro-life arguments, the relationship between pro-life social identification (lower scores) and the strength of pro-life arguments (higher scores, if rated higher) would be negative. In contrast, the opposite would happen in the pro-choice groups, in which the relationship between pro-choice social identification (higher scores) and the strength of pro-choice arguments (if rated higher) would be positive. That means, running the analysis on the entire dataset, instead of separately, would lead to the cancelling out of the correlation coefficients from pro-life and pro-choice groups. This was evidenced by analyses run separately: once on the entire dataset and again on two split datasets (pro-life and

pro-choice). In the pro-life dataset, social identification correlated negatively with argument strength (r = -.76, p < .01). In the pro-choice dataset, social identification correlated positively with argument strength (r = .78, p < .01). However, when the correlation was run on the entire dataset, the results were non-significant (r = .04, p = .56).

6.2. Multiple linear regression

6.2.1. Pro-life

Multiple linear regression was run to answer RQ2, which inquired whether attitude toward abortion would be explained by social identification and (pro-life) argument strength. Table 1 reports the statistics associated with this analysis. Together, social identification and (pro-life) argument strength significantly predicted attitude, $F(2, 110) = 220.13$, Adjusted R^2 = .80, p < .001. Attitude was positively predicted by social identification (higher scores indicating more pro-choice) (β = .51, p < .001) and negatively by (pro-life) argument strength (β = -.44, p < .001). The results indicate that in the pro-life groups, participants identifying themselves as more pro-choice tend to demonstrate greater support for abortion (higher attitude scores indicating more pro-choice). Also, if pro-life arguments are perceived to be stronger, participants tend to demonstrate greater opposition against abortion (lower attitude scores indicating more pro-life).

Table 1

Regression Coefficients of Social Identification and Argument Strength on Attitude (Pro-life)

Variable	*B*	*SE B*	β
Social Identification	.22	.03	.51***
Argument Strength	-6.6	1.0	-.44***
R^2	.80		
F	220.13***		

***p < .001

6.2.2. Pro-choice

Multiple linear regression was run to answer RQ2, which inquired whether attitude toward abortion would be predicted by social identification and (pro-choice) argument strength. Table 2 reports the statistics associated with this analysis. Together, social identification and (pro-choice) argument strength significantly predicted attitude, $F(2, 113) = 421.18$, Adjusted $R^2 = .88$, $p < .001$. Attitude was positively predicted by both social identification (higher scores indicating more pro-choice) ($\beta = .57$, $p < .001$) and by (pro-choice) argument strength ($\beta = .43$, $p < .001$). The results indicate that in the pro-choice groups, participants identifying themselves as more pro-choice tend to demonstrate greater support for abortion (higher attitude scores indicating more pro-choice). On the other hand, if pro-choice arguments are perceived to be stronger, participants tend to demonstrate greater support for abortion (higher attitude scores indicating more pro-choice).

Table 2

Regression Coefficients of Social Identification and Argument Strength on Attitude (Pro-choice)

Variable	*B*	*SE B*	β
Social Identification	.24	.02	.57***
Argument Strength	6.43	.78	-.43***
R^2	.88		
F	421.18***		

***$p < .001$

6.3. Hierarchical regression

Since social identification appeared to be a strong predictor in both pro-life and pro-choice groups, hierarchical regression was run to examine if argument strength predicted attitude when social identification was controlled for. Again, two sets of analyses were run: one for pro-life groups and the other for pro-choice groups.

6.3.1. Pro-life

A hierarchical design was employed which used two models: Model 1 predicted attitude toward abortion from social identification, and Model 2 added argument strength. In Model 1, social identification significantly predicted attitude, $F(1, 111) = 284.67$, $p < .001$, and accounted for 72 % of variance in attitude. The addition of argument strength in Model 2 explained an additional 8% of variance in attitude and the change in R^2 was significant, $F(2, 110) = 220.13$, $p < .001$. Together the two variables accounted for 80% of variance in attitude in the pro-life groups.

Table 3

Hierarchical Regression (Pro-life)

Variable		B	95% CI for B		SE B	β	R^2	ΔR^2
			LL	UL				
Step 1								
	Constant	25.22***	22.65	27.8	1.3		.72	.72***
	Social identification	.36***	.32	.40	.02	.85***		
Step 2								
	Constant	51.22***	43.15	59.22	4.05		.80	.08***
	Social identification	.22***	.16	.27	.03	.51		
	Argument strength	-6.6***	-8.56	-4.63	.99	-.44		

Note. CI = confidence interval; LL = lower limit; UL = upper limit.
***$p < .001$.

6.3.2. Pro-choice

A hierarchical design was employed which used two models: Model 1 predicted attitude toward abortion from social identification, and Model 2 added argument strength. In Model 1, social identification accounted significantly predicted attitude, $F(1, 114) = 488.3$, $p < .001$, and accounted for 81 % of variance in attitude. The addition of argument strength in Model 2 explained an additional 7% of variance in attitude and the change in R^2 was significant, $F(2, 113)$

= 421.18, p <.001. Together the two variables accounted for 88% of variance in attitude in the pro-choice groups.

Table 4

Hierarchical Regression (Pro-choice)

Variable		B	95% CI for B		SE B	β	R^2	ΔR^2
			LL	UL				
Step 1								
	Constant	24.14***	22.03	26.25	1.07		.81	.81***
	Social identification	.38***	.35	.41	.02	.90***		
Step 2								
	Constant	11.67***	8.23	15.1	1.73		.88	.07***
	Social identification	.24***	.20	.28	.02	.57***		
	Argument strength	6.43***	4.89	7.98	.78	.42***		

Note. CI = confidence interval; LL = lower limit; UL = upper limit.
***p < .001.

6.4. Additional analyses

A series of additional analyses were run to complement the discussion on the two research questions. The analyses included a 3 (social identification) x 2 (argument type) factorial ANOVA, a mediation analysis with social identification as predictor, argument strength as mediator, and attitude as outcome. Other analyses were correlations, and t-tests on male-female differences on social identification and attitude toward abortion. To run the factorial analysis, the social identification measure was turned into a categorical variable with three levels: strong pro-life (people scoring 25 and below on the social identification scale), moderate (people scoring above 25 and below 75), and strong pro-choice (people scoring 75 and above).

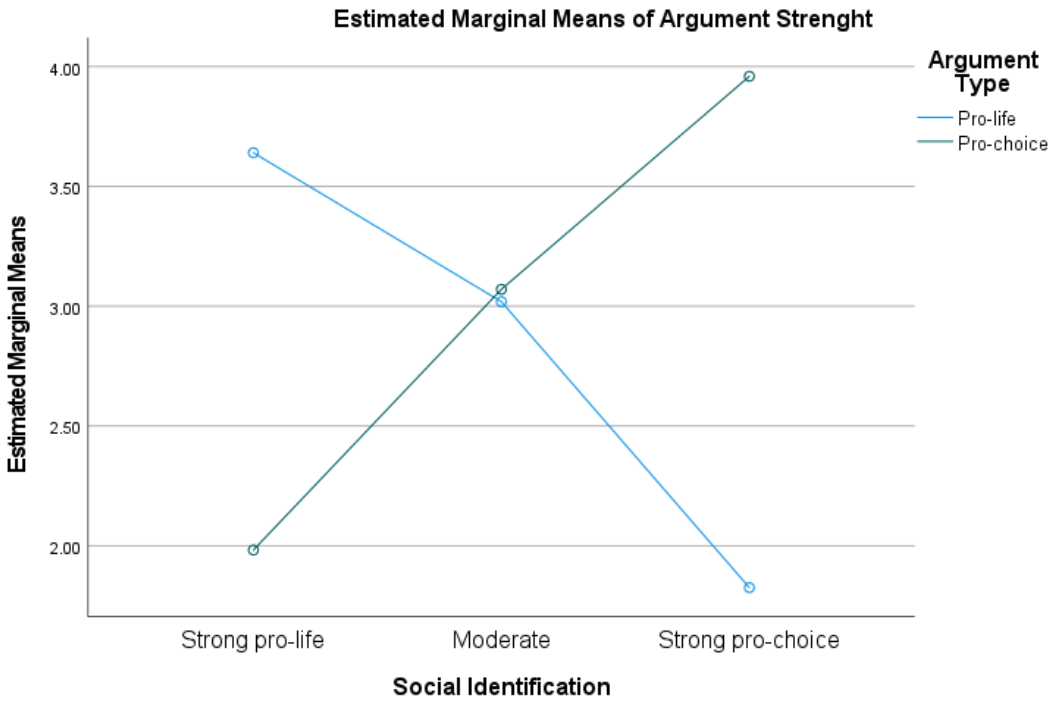
6.5. Factorial ANOVA

A 3 (social identification) x 2 (argument type) factorial ANOVA on argument strength was performed to understand how participant exposure to different argument types (pro-life vs pro-choice) with varying levels of identification (strong pro-life, moderate, and strong pro-

choice) affected the way they perceived the strength of the arguments. There were no significant main effects for social identification, $F(2, 223)= 2.27$, $p = .11$, partial $\eta 2= .02$, such that students who strongly identified as pro-life ($M = 2.83$, $SD = 1.18$), or had moderate views ($M = 3.04$, $SD = .57$), or strongly identified as pro-choice ($M = 2.97$, $SD = 1.26$) did not differ in their ratings of argument strength. There were also no significant main effects for argument type, $F(1, 223) = 3.58$, $p = .06$, partial $\eta 2 = .02$, such that participants in pro-life groups ($M = 2.88$, $SD = 1.02$) and participants in pro-choice groups ($M = 3.02$, $SD = 1.04$) did not differ in their ratings of argument strength. However, a significant interaction effect was found, $F(2, 223) = 13.2.66$, $p < .001$, partial $\eta 2 = .543$, such that when strong pro-life participants are exposed to pro-life arguments, they rated the strength significantly higher and the strength of pro-choice arguments significantly lower. Similarly, when strong pro-choice participants were exposed to pro-choice arguments, they rated the strength of pro-choice arguments significantly higher and the strength of pro-life arguments significantly lower. There were no changes in the argument strength ratings by moderate viewers.

Figure 1

Interactions between Social Identification and Argument Type



6.6. Mediation analysis

A mediation analysis was performed with social identification as predictor, argument strength as mediator, and attitude as outcome variables. The purpose was to explore if argument strength mediated the relationship between social identification and attitude. Again, since the argument strength measure was included in the model, the dataset was split between pro-life and pro-choice groups, and mediation analyses were run separately.

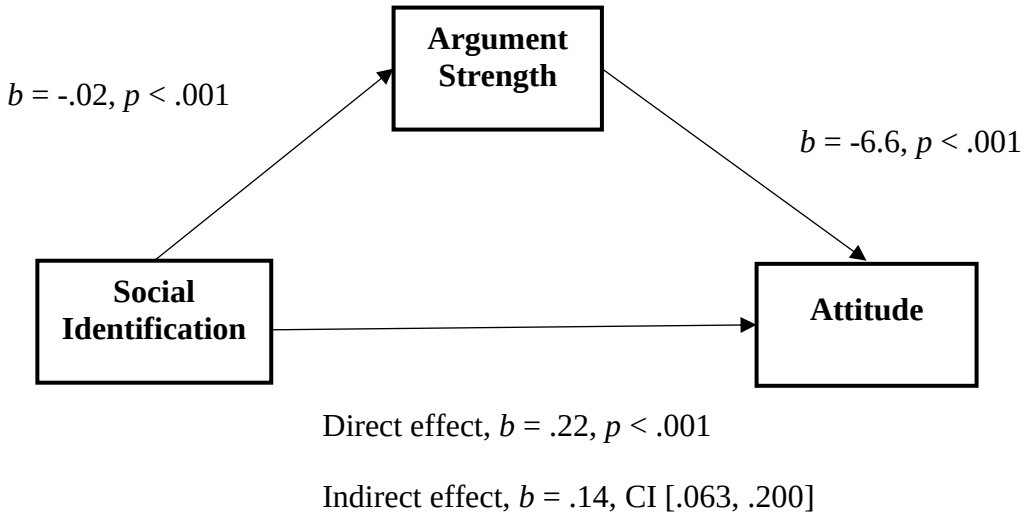
6.6.1. Pro-life

Hayes's (2022) PROCESS Macro Model 4 (mediation) was run to examine if argument strength mediates the association between social identification and attitude. Social identification significantly predicts argument strength, b = -.02, t = -12.41, 95% CI = [-.02, -.02], p < .001. The R^2 value tells us that social identification explains 58.11% of variance in argument quality and

the fact that the *b* is negative tells us that as social identification increases (or tends towards more pro-choice), ratings of argument strength declines (and vice versa). We can see that social identification significantly predicts attitude even with argument strength in the model, $b = .22$, $t = 7.8$, 95% CI = [.16, .27], $p < .001$; argument strength also significantly predicts attitude, $b = -6.6$, $t = -6.67$, 95% CI = [-8.56, -4.63], $p < .001$. The R^2 value tells us that the model explains 80% of the variance in attitude. When argument strength is not in the model, social identification significantly predicts attitude, $b = .36$, $t = 16.87$, 95% CI = [.32, .40], $p < .001$. The R^2 value tells us that the model explains 71.95% variance in attitude. The 95% bootstrap confidence interval (see Figure 1) based on 5,000 bootstrap samples did not cross zero [.063, .200], demonstrating that argument strength mediated the relationship between social identification and attitude in pro-life groups. A significant mediation effect further confirmed the primacy of social identification as a strong predictor of attitude. In addition, the significant results demonstrated the nature of the role played by argument strength in affecting attitude. The mediation analysis suggests that the effect of argument strength became different when social identification was included in the model.

Figure 2

A Mediation Model for Pro-Life Groups



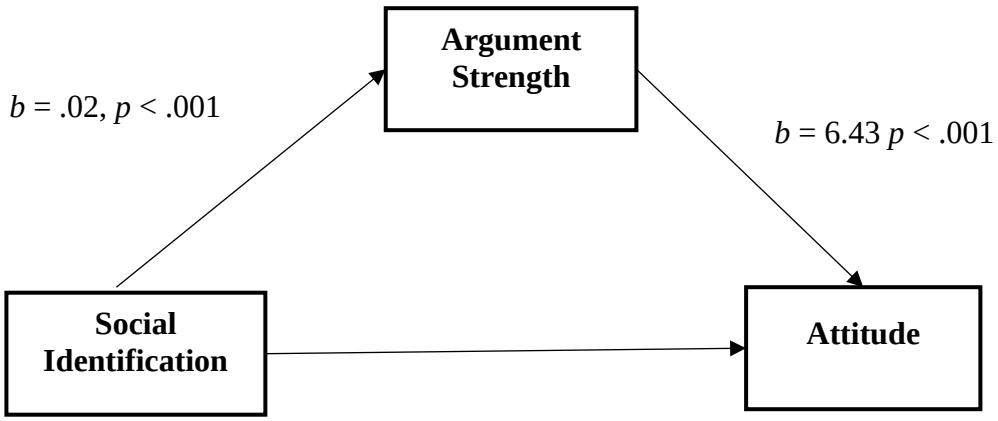
6.6.2. Pro-choice

Hayes's (2022) PROCESS Macro Model 4 (mediation) was run to examine if argument strength mediates the association between social identification and attitude. Social identification significantly predicts argument strength, b = .02, t = 13.36, 95% CI = [.02, .03], p < .001. The R^2 value tells us that social identification explains 61.01% of variance in argument quality and the fact that the b is positive tells us that as social identification increases (becomes more pro-choice), ratings of argument strength increases (and vice versa). We can see that social identification significantly predicts attitude even with argument strength in the model, b = .24, t = 10.94, 95% CI = [.20, .28], p <.001; argument strength also significantly predicts attitude, b = 6.43, t = 8.24, 95% CI = [4.89, 7.98], p <.001. The R^2 value tells us that the model explains 88.17% of the variance in attitude. When argument strength is not in the model, social identification significantly predicts attitude, b = .38, t = 22.1, 95% CI = [.35, .41], p <.001. The *R2* value tells us that the model explains 81.07% variance in attitude. The 95% bootstrap

confidence interval (see Figure 1) based on 5,000 bootstrap samples did not cross zero [.10, .19], demonstrating that argument strength mediated the relationship between social identification and attitude in pro-choice groups. A significant mediation effect further confirmed the primacy of social identification as a strong predictor of attitude. In addition, the significant results demonstrated the nature of the role played by argument strength in affecting attitude. The mediation analysis suggests that the effect of argument strength became different when social identification was included in the model.

Figure 3

A Mediation Model for Pro-Choice Groups



6.7. Male-female differences in social identification, attitude, issue importance

An independent samples t-test was conducted to see if male and female participants differed in social identification. Significant differences were found between men (M = 42.91, SD = 32.9) and women (M = 56.72, SD = 39.56), t(210.77) = -2.87, p > .05. Another independent samples t-test was conducted to see if male and female participants differ in their attitude toward abortion. Significant differences were found between men (M = 40.67, SD = 14.94) and women

(*M* = 45.39, *SD* = 15.83), *t*(221.32) = -2.31, *p* > .05. Participants saw abortion as a mostly important issue (*M* = 6.69, *SD* = 2.65). An independent samples t-test revealed that there were significant differences between men (*M* = 6.11, *SD* = 2.88) and women (*M* = 7.38, *SD* = 2.19), *t*(218.96) = -3.69, *p* > .001. To test if social identification predicted issue importance, a one-way ANOVA was run. Significant differences were found among participants who were strong pro-life, moderate, and strong pro-choice, *F*(2, 228) = 37.78, *p* < .001, partial $\eta 2$ = .25. A subsequent Scheffe test revealed that significant differences existed between participants who were strong pro-life (*M* = 8.04, *SD* = 2.18) and moderate (*M* = 4.99, *SD* = 2.31), and participants who were moderate and strong pro-choice (*M* = 7.31, *SD* = 2.45). No significant differences were found between strong pro-life and strong pro-choice participants.

Table 5

Descriptive Statistics and Correlations for Study Variables (Pro-life)

Variable	*n*	*M*	*SD*	1	2	3	4
1. Social identification	113	49.43	36.32				
2. Argument strength	113	2.88	1.02	-.76**			
3. Attitude	113	42.9	15.32	.85**	-.83**		
4. Age	113	19.03	1.0	-.19*	-.19**	-.13	
5. Issue importance	113	6.37	2.81	-.11	-.02	-.18	-.02

*p <.05. **p < .01.

Table 6

Descriptive Statistics and Correlations for Study Variables (Pro-choice)

Variable	*n*	*M*	*SD*	1	2	3	4
1. Social identification	116	49.72	37.32				
2. Argument strength	116	3.02	1.04	-.78**			
3. Attitude	116	43.0	15.72	.90**	.87**		
4. Age	116	19.34	1.87	.01	-.07	.00	
5. Issue importance	116	7.01	2.49	-.09	-.03	-.07	.06

*p <.05. **p < .01.

CHAPTER 7. DISCUSSION

This chapter contains a detailed discussion on the findings of the study, implications, limitations, and future directions. The discussion follows the order of the research questions and the hypothesis and involves additional analyses. Separate sections were dedicated to explaining how the results related back to theory, what kinds of limitations it has, and what future researchers can take from the study.

7.1. Discussion

This study had two main goals. First, it intended to understand the primacy of social identification in the online social influence process, with anonymity as a contextual variable. Second, it attempted to see what kind of social influence occurred, if at all, via social identification and argument strength. In doing so, two research questions and one hypothesis were advanced. The section below discusses results associated with each research question and the hypothesis.

RQ1 sought to understand how anonymity (known vs. unknown) and argument types (pro-life vs. pro-choice) influenced participant attitude toward abortion. This question aimed to examine how social identification implicitly affected attitude and how anonymity played a role as a contextual variable in the social influence process. Anonymity was an operationalized form of deindividuation (Huang & Li, 2016). This question was an indirect test of SIDE. Results from a factorial ANOVA suggested that there were no significant main effects for anonymity and argument type on people's attitude toward abortion. In other words, attitude was not affected by whether people were exposed to arguments from people with some identifiable information (known) and from people without any identifiable information (unknown). Also, attitude remained unaffected by participant exposure to two different types of argument (pro-life or pro-

choice). No interactions (anonymity x argument type) were significant as well. The purpose of looking at the interaction effects was to see if there were situations or circumstances, under which attitude might have been affected. This research question tried to explain how social influence might occur implicitly via social identification and how anonymity as a contextual variable might affect the influence process.

SIDE proposed that if social identification was primed or made salient a priori, people would be more affected by social identification in anonymous conditions (Postmes & Spears, 1998; Reicher et al., 1995). In other words, significant differences in attitude would have been found between known and unknown conditions since social identification was already primed by asking participants to rate themselves on the social identification scale before the beginning of the experiment. According to SIDE, social identification, when salient, would be intensified by anonymity, and depersonalization would result, i.e., social identity would be foregrounded over personal identity (Reicher et al., 1995). Anonymity of others reduces self-awareness, meaning that people receiving and interpreting messages from others (in this case, arguments from other people), would be more regulated by the norms of social category than his or her own personal norms (Spears & Postmes, 2015). As a result, the effect of social identification would be stronger in the anonymous condition. Past research has shown that anonymity caused depersonalization (Lee, 2004), which in turn, strengthened the impact of group norms when the group identity was made salient a priori (Postmes et al., 2001). The reason is "anonymity obscures personal features and interpersonal differences and thereby diminishes the relative importance of interpersonal concerns in favor of a focus on the known or emergent characteristics of the group as a whole" (Postmes et al., 2001, p. 1244). As a contextual variable, anonymity does not cause social identification, it accentuates/intensifies/enhances the effects of social identification, if the social

identity is already salient (Spears & Postmes, 2015). SIDE research has consistently found that greatest social influence occurs when people are in a deindividuated condition (anonymity) and in groups (group immersion) (Lea & Spears, 1991; Reicher, 1984; Spears et al., 1990). Because the anonymity manipulation did not have an influence in this experiment and the main and interaction effects were not significant, it is not possible to ascertain whether anonymity triggered depersonalization (i.e., foregrounding of social identity) and thus affected attitude. The results also indicated that people exposed to comments and arguments in the virtual space (e.g., social media) on a divisive issue might not be susceptible to influence by a few pieces of identity information of random users. The issue is so well known and so divisive that the people making arguments are inconsequential compared to what the arguments are.

Several explanations were explored as to why the anonymity manipulation did not make an impact. First, abortion is a highly polarizing issue and social identity was already primed at the beginning of the study. It was possible that participants deduced the identities of the three people who made the arguments through a pro-life vs. pro-choice lens: they simply saw the persons as either pro-life or pro-choice. Thus, the personal profile information was insufficient to overpower the fact that the persons belonged to a pro-life or pro-choice camp. Another potential explanation is that participants were doing what Petty & Cacioppo (1986), in their elaboration likelihood model (ELM) of persuasion, described as central processing. The central route of persuasion occurred through "a person's careful and thoughtful consideration of the true merits of the information presented in support of an advocacy" (Petty & Cacioppo, 1986, p. 125). On the other hand, the peripheral route of persuasion results from "some simple cue in the persuasion context (e.g., an attractive source) that induced change without necessitating scrutiny of the true merits of the information present" (Petty & Cacioppo, 1986, p. 125). In this study,

when participants were asked to answer this question, “When you read the information from each person, did you get an impression of who the person was?”, it was likely that participants processed the arguments of the authors and tried to deduce how pro-life or pro-choice the authors were (e.g., “Oh, this guy is a strong pro-choicer”), disregarding their personality information including names, hobbies, interests. One caveat, however, is this study did not examine the type of processing participants might have done. Second, the mean anonymity score in the known condition was slightly higher (higher scores indicate higher degrees of perceived anonymity). Supportive of the first explanation, the results indicated that there was a high possibility that participants did not consider personal profile information to assess how anonymous the authors of the arguments were. The participants might have tried to get a picture of who the person was based on his or her argument itself, not the profile per se. The types of biographical information shared can hardly be related to one’s identification on the abortion debate. For example, addition of religious faith in the profile might have made a difference between known and unknown conditions. Third, this experiment was conducted online, and participants did not interact with the people who made the arguments. The same types of biographical information, which were used in this study, triggered a successful anonymity manipulation in a lab setting (Lee, 2008). CMC environments are characterized by physical isolation and often by dearth of individuating information, especially of social media users. It is likely that participants might have had an overall sense of anonymity due to the fact of being virtual. Fourth, it might take more than a few bits of biographical information to trigger identification and see its effect on attitude, especially on a divisive issue like abortion. For example, adding more types of identity information such as legal name, geographical location, and the person’s networks might have sufficiently established identification of a person in an online environment (Marx, 1999, 2004). Since anonymity is seen

as a continuum from completely anonymous to completely identifiable, adding more identity knowledge increases the degree of identification (Anonymous, 1998; Scott & Rains, 2020). Additionally, biographical information constitutes only one of the five dimensions of anonymity: visual anonymity, discursive anonymity, confidentiality, unreachability, and invisibility (Scott & Rains, 2020), and different operationalizations of anonymity (e.g., physical isolation, lack of visual cues) have varying levels of effects. For example, visual anonymity was seen to have the largest effect on group conformity (see Huang & Li, 2016). Fifth, the anonymity scale did not immediately follow the arguments. Participants were asked the anonymity question towards the end of the survey, after they completed the attitude measure. This might have interfered with what they remembered about the persons when reading the arguments. The anonymity scale was put at the end of the survey to prevent any unintended inference with the attitude measure.

H1 predicted that social identification and anonymity would interact to affect attitude, such that strong pro-life participants would demonstrate more anti-abortion attitude in unknown conditions than in known conditions and strong pro-choice participants would demonstrate more pro-abortion attitude in unknown conditions than in known conditions. This hypothesis was a direct test of SIDE. Since no interaction effects were found and anonymity did not influence the process, the hypothesis was not successfully tested. Based on the SIDE model, social identification was expected to have a greater influence on attitude in the unknown conditions through the process of depersonalization (Abrams et al., 2005). Since the anonymity manipulation did not have any influence on the social influence process, it is difficult to ascertain whether depersonalization was triggered by anonymity. Participants might have still felt depersonalized (i.e., saw themselves as part of a social category like a pro-life camp), but it was not affected by whether the people whose arguments they read were known or unknown.

Anonymity is a contextual variable and it does not cause depersonalization; it only accentuates or attenuates the effects of social identification (Postmes et al., 2001).

RQ2 inquired how social identification and argument strength influenced attitude toward abortion. This question was associated the second goal of this study: investigating the types of social influence in existence. Two sets of analyses were run: multiple linear regression and hierarchical regression. Results indicated that social identification and argument strength are strong predictors of attitude in both pro-life and pro-choice groups. It confirmed the presence of both group membership-based (driven by social identification) influence (Abrams et al., 1990) and informational (driven by argument strength) influence (Abrams & Hogg, 1990). Group membership-based influence occurs because of the individual's self-definition as a group member (Abrams et al., 1990). Informational influence occurs when people tend to "accept information obtained from another as evidence about reality" (Deutsch & Gerard, 1955, p. 629).

Since social identification emerged as a stronger predictor in both pro-life and pro-choice groups, I ran hierarchical regression to examine if argument strength still predicted attitude when social identification was controlled for. Results suggested that in pro-life groups, social identification accounted for 72% of variance in attitude alone. When argument strength was added, an additional 8% of variance in attitude was explained by argument strength and the change in R^2 was significant. In pro-choice groups, social identification accounted for 81% of variance in attitude alone. When argument strength was added, an additional 7% of variance in attitude was explained by argument strength and the change in R^2 was significant. The results confirmed that argument strength could predict attitude. In other words, people exposed to arguments in virtual space (e.g., social media) were primarily driven by the social group they identified with, but the quality of the arguments also contributed to the shaping of their attitude,

even when the issue (i.e., abortion) was highly polarizing. Theoretically speaking, this study confirmed that both group membership-based and informational influence occurred when people saw messages from other people. Most of the time these two forms of influence co-occur or are found together (Deutsch & Gerard, 1955).

Additional analyses were run to examine *whether* and *how* social identification influenced the way people rated strength of the arguments they were exposed to. The results from a 3 (social identification) x 2 (argument type) factorial ANOVA suggested that neither social identification (strong pro-life, moderate, strong pro-choice) nor argument type (pro-life vs. pro-choice) had significant main effects on argument strength. However, significant interactions were found, indicating that the degree of social identification played a big role in affecting how they assessed the arguments. Strong pro-life participants rated pro-life arguments higher in strength than pro-choice arguments. Similarly, strong pro-choice participants rated pro-choice arguments higher in strength than pro-life arguments. However, for participants with moderate views, the social identification did not influence on how they evaluated the arguments. These results indicated that people with strong views tended to have their views reinforced when exposed to arguments by members of the same social group. In other words, people with strong opinions were more susceptible to group membership-based influence than informational influence. This is another confirmation that social identification was a strong element in the social influence process. However, the results should be interpreted carefully since these might have been the same arguments that participants might have already encountered and built their identification on. Often people's attitude acquisition is tied to group membership, i.e., the norms of the group (Hogg & Smith, 2007).

Another set of analyses (mediation) examined if argument strength had a mediating role in social identification's effect on attitude. Results confirmed that social identification both directly and indirectly (via argument strength) affected attitude. In both pro-life and pro-choice groups, the mediation analyses suggested that social identification not only influenced attitude, but it also influenced argument strength. This is proof that there is no single way social identification affects attitude, particularly when it is a divisive issue.

7.2. Conclusion

This study attempted to understand the primacy of social identification in the online social influence process with anonymity as the contextual variable. Another goal was to see what types of social influence occurred, if at all, via social identification and argument strength. The results demonstrated that deindividuation (anonymity) manipulations did not have any effect. In other words, anonymity did not play a role in how social identification influenced attitude in this experiment. That's why it is difficult to say if depersonalization (participants' switch form personal to social identity) happened due to anonymity. Depersonalization was a key concept in the SIDE model. Since the deindividuation manipulation did not have an effect, depersonalization cannot be attributed to anonymity. However, depersonalization might have still occurred among participants. The experiment attempted to manipulate the other anonymity (cognitive aspect), and participants did not have to share any personal information of their own (strategic aspect of anonymity) or directly interact with the authors of the arguments. It was possible that participants might have felt to be in an anonymous environment and were depersonalized by the overall environment of the experiment.

Second, social identification predicted attitude. So did argument strength. These two findings indicated that the participants were susceptible to both group membership-based

influence (triggered by social identification) and informational influence (triggered by argument strength). Findings associated with the additional analyses informed us about the way social identification influenced attitude. The hierarchical regression demonstrated that argument strength predicted attitude even when social identification was controlled for. The factorial ANOVA indicated that social identification affected how participants assessed argument strength. For example, strong pro-life participants rated pro-life arguments more favorably than pro-choice arguments. The same happened for strong pro-choice participants. However, social identification did not affect the participants who held moderate views about abortion. The mediation results showed that social identification had both direct effects and indirect effects (via argument strength) on attitude. Overall, the additional analyses served three purposes. First, they showed the predictive capacity of argument strength when social identification was controlled for. Second, they re-emphasized the primacy of social identification in the social influence process, as evidenced by its effect on how people assessed argument strength. Third, they showed the process of how social identification affected attitude: both directly and indirectly.

7.3. Implications

This study has both theoretical and practical implications. SIDE studies are predominantly lab experiments where people were put in actual interaction situations (e.g., Lee, 2008; Reicher, 1984). Few were field experiments (e.g., Chan, 2010) or online survey-based experiments (e.g., Chung, 2019). Since many of today's conversations occur in the virtual space, this study attempted to emulate a situation in which people come across different viewpoints (from ingroups and outgroups) on a topic from both anonymous and nonanonymous sources. In other words, this experiment attempted, in some aspect, to increase mundane realism, which is advocated by some scholars as a way of enhancing generalizability (Wrench et al., 2018).

However, scholars were also critical of overemphasis on mundane realism ("superficial resemblance to the real world") as the indicator of a good experiment (Highhouse, 2009, p. 554). Even though this study would not have the same degree of mundane realism as a lab experiment, this survey-based experiment does expand the array of methods SIDE studies employ. Second, this study also selected a highly divisive topic instead of a choice dilemma situation to understand what types of social influence occurs and how it occurs. The same experiment with a less divisive topic (e.g., a contemporary issue) might produce different insight. Third, the study generates important insight into the concept of anonymity. Findings suggest that anonymity does not play a similar role in an online survey-based experiment and in a physical lab setting. Maybe an online environment creates a heightened sense of anonymity than an in-person situation. This study also invites the question about what types of information and how much information are required to make a person identifiable in an online setting. In other words, the study indicates the need for problematizing anonymity in greater depth in CMC context. Fourth, this study reconfirmed the primacy of social identification, especially on a highly divisive issue, in the social influence process. Social identification not only exerts directly influence but also has an indirect impact on attitude. Fifth, the study showed that both group membership-based and information influence might occur in the online space. It means that online environments can shape people's attitude toward an issue by reconfirming identity as well as by highlighting argumentativeness of messages.

This study also has some practical implications. The findings give important insight into how social identification might impact the way people behave and get persuaded. Research demonstrated that people's evaluation of health and safety is often bound to group membership

(Cruwys et al., 2020) and "identity-affirming" messages are more persuasive than "identity-contradictory" messages (Neville et al., 2021, p. 1). This study reconfirms these findings.

7.4. Limitations and future directions

This study had a few limitations. First, the sample consisted of a homogenous age group. Most participants were about 19 years old, and all were attending college. Although it limited the generalizability of the results across age groups, the study provides insight into an important age group, especially when women in their 20s account for more than half of abortions (Kortsmit et al., 2021) and almost half of the participants in this study were female. Future research would benefit from comparing any two age groups and examining how social influence differ across the two groups. Second, the sample was predominantly White (86.6%), leading to underrepresentation of other groups. Third, the four conditions exposed participants to either pro-life or pro-choice arguments. However, people often encounter a mix of opposing viewpoints in online platforms. In this sense, this did not completely emulate a real-world situation. Future studies might create conditions in which participants would see and evaluate both sides and then rate their attitude. It will increase the degree of mundane realism. Fourth, this study found that anonymity (operationalized here as the absence of biographical information) did have an influence on the way participants cognitively processed the arguments. While it tells us that anonymity might operate differently in the online space, it is unclear whether depersonalization was induced by the mode of operationalization used here.

Depersonalization is a key construct in the SIDE model. SIDE research might benefit from studies which employ different forms of anonymity (e.g., personal information anonymity, visual anonymity, and physical anonymity; see Huang & Li, 2016; Scott & Rains, 2020) and assess how different operationalizations of anonymity operate in an online environment.

Selecting a less polarizing issue (e.g., Covid-19 masking) might also generate different results. Fifth, this study did not run a pilot test. Doing so would give an idea about whether the anonymity manipulation was working, and how it was working. Future experimenters would benefit from pilot testing, especially while using manipulation checks.

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APPENDIX. SURVEY QUESTIONNAIRE

ANONYMITY, SOCIAL IDENTIFICATION, AND ONLINE SOCIAL INFLUENCE

Q1 In regard to abortion, where do you rate yourself on the following scale?

Please note that the lower the score the more pro-choice you are; the higher the score the more pro-life you are. The mid-point (50) indicates you identify yourself as neither pro-choice nor pro-life (neutral).

	0 = absolute pro-choice	50 = neutral	100 = absolute pro-life
	0 10 20 30 40 50 60 70 80 90 100		
1 ()			

Q2 Pro-life known, argument 1 (Condition 1)
Please read the argument and indicate the extent to which you agree or disagree with the statements made about the argument.

Argument: "Every life must be protected. You can't force a mother to keep her baby, but abortion is never the right answer. There are so many other options out there for moms who can't or don't want to keep their children."

The information below is about the person who made the above argument.
Nickname: Sam
Major: CSE
Age: 20
Favorite TV show/movie: Grey's Anatomy
Favorite color: Blue
Favorite music genre: Heavy metal
Other: this is cool!

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
The statement is a reason for supporting a pro-life position that is believable. (1)	O	O	O	O	O
The statement is a reason for supporting a pro-life position that is convincing. (2)	O	O	O	O	O
The statement gives a reason for supporting a pro-life position that is important to me. (3)	O	O	O	O	O
The statement helps me feel confident about how best to support a pro-life position. (4)	O	O	O	O	O
The statement would help my friends support a pro-life position. (5)	O	O	O	O	O
The statement put thoughts in my mind about wanting to support a pro-life position. (6)	O	O	O	O	O
The statement put thoughts in my mind about not wanting to support a pro-life position. (7)	O	O	O	O	O

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
Overall, how much do you agree or disagree with the statement? (8)	O	O	O	O	O

Q3 Pro-life known, argument 2 (Condition 1)
Please read the argument and indicate the extent to which you agree or disagree with the statements made about the argument.

Argument: "Abortion should not be seen as preventative. We have birth control, condoms, plan B. If you fail, you should be responsible and deal with the consequences."

The information below is about the person who made the above argument.
Nickname: Robbie
Major: Psych
Age: 23
Favorite TV show/movie: Friends
Favorite color: All (purple)
Favorite music genre: Most
Other: None

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
The statement is a reason for supporting a pro-life position that is believable. (1)	O	O	O	O	O
The statement is a reason for supporting a pro-life position that is convincing. (2)	O	O	O	O	O

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
The statement gives a reason for supporting a pro-life position that is important to me. (3)	O	O	O	O	O
The statement helps me feel confident about how best to support a pro-life position. (4)	O	O	O	O	O
The statement would help my friends support a pro-life position. (5)	O	O	O	O	O
The statement put thoughts in my mind about wanting to support a pro-life position. (6)	O	O	O	O	O
The statement put thoughts in my mind about not wanting to support a pro-life position. (7)	O	O	O	O	O
Overall, how much do you agree or disagree with the statement? (8)	O	O	O	O	O

Q4 Pro-life known, argument 3 (Condition 1)
Please read the argument and indicate the extent to which you agree or disagree with the statements made about the argument.

Argument: "Abortion has never been about the woman’s right choose what she does with her body. It has always been about choosing to escape taking responsibility for her actions by taking

another life. I have respect for every woman who cannot offer the child a good life and places the child up for adoption."

The information below is about the person who made the above argument.
Nickname: Jaime
Major: Communication
Age: 21
Favorite TV show/movie: That ‘70s Show
Favorite color: Camel
Favorite music genre: Alternative rock
Other: Can’t think of anything

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)
The statement is a reason for supporting a pro-life position that is believable. (1)	O	O	O	O	O
The statement is a reason for supporting a pro-life position that is convincing. (2)	O	O	O	O	O
The statement gives a reason for supporting a pro-life position that is important to me. (3)	O	O	O	O	O
The statement helps me feel confident about how best to support a pro-life position. (4)	O	O	O	O	O
The statement would help my friends support a pro-life position. (5)	O	O	O	O	O

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)
The statement put thoughts in my mind about wanting to support a pro-life position. (6)	O	O	O	O	O
The statement put thoughts in my mind about not wanting to support a pro-life position. (7)	O	O	O	O	O
Overall, how much do you agree or disagree with the statement? (8)	O	O	O	O	O

Q5 Pro-life unknown, argument 1 (Condition 2)

Please read the argument and indicate the extent to which you agree or disagree with the statements made about the argument.

Argument: "Every life must be protected. You can’t force a mother to keep her baby, but abortion is never the right answer. There are so many other options out there for moms who can’t or don’t want to keep their children."

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
The statement is a reason for supporting a pro-life position that is believable. (1)	O	O	O	O	O

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
The statement is a reason for supporting a pro-life position that is convincing. (2)	O	O	O	O	O
The statement gives a reason for supporting a pro-life position that is important to me. (3)	O	O	O	O	O
The statement helps me feel confident about how best to support a pro-life position. (4)	O	O	O	O	O
The statement would help my friends support a pro-life position. (5)	O	O	O	O	O
The statement put thoughts in my mind about wanting to support a pro-life position. (6)	O	O	O	O	O
The statement put thoughts in my mind about not wanting to support a pro-life position. (7)	O	O	O	O	O
Overall, how much do you agree or disagree with the statement? (8)	O	O	O	O	O

Q6 Pro-life unknown, argument 2 (Condition 2)

Please read the argument and indicate the extent to which you agree or disagree with the statements made about the argument.

Argument: "Abortion should not be seen as preventative. We have birth control, condoms, plan B. If you fail, you should be responsible and deal with the consequences."

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
The statement is a reason for supporting a pro-life position that is believable. (1)	O	O	O	O	O
The statement is a reason for supporting a pro-life position that is convincing. (2)	O	O	O	O	O
The statement gives a reason for supporting a pro-life position that is important to me. (3)	O	O	O	O	O
The statement helps me feel confident about how best to support a pro-life position. (4)	O	O	O	O	O
The statement would help my friends support a pro-life position. (5)	O	O	O	O	O
The statement put thoughts in my mind about wanting to support a pro-life position. (6)	O	O	O	O	O

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
The statement put thoughts in my mind about not wanting to support a pro-life position. (7)	O	O	O	O	O
Overall, how much do you agree or disagree with the statement? (8)	O	O	O	O	O

Q7 Pro-life unknown, argument 3 (Condition 2)

Please read the argument and indicate the extent to which you agree or disagree with the statements made about the argument.

Argument: "Abortion has never been about the woman’s right choose what she does with her body. It has always been about choosing to escape taking responsibility for her actions by taking another life. I have respect for every woman who cannot offer the child a good life and places the child up for adoption."

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
The statement is a reason for supporting a pro-life position that is believable. (1)	O	O	O	O	O
The statement is a reason for supporting a pro-life position that is convincing. (2)	O	O	O	O	O

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
The statement gives a reason for supporting a pro-life position that is important to me. (3)	O	O	O	O	O
The statement helps me feel confident about how best to support a pro-life position. (4)	O	O	O	O	O
The statement would help my friends support a pro-life position. (5)	O	O	O	O	O
The statement put thoughts in my mind about wanting to support a pro-life position. (6)	O	O	O	O	O
The statement put thoughts in my mind about not wanting to support a pro-life position. (7)	O	O	O	O	O
Overall, how much do you agree or disagree with the statement? (8)	O	O	O	O	O

Q8 Pro-choice known, argument 1 (Condition 3)

Please read the argument and indicate the extent to which you agree or disagree with the statements made about the argument.

Argument: "A fetus cannot live outside of the womb. It is completely dependent on its mother,

unlike born human beings. Even if the fetus was alive, the right to live does not imply a right to use someone else's body."

The information below is about the person who made the above argument.
Nickname: Sam
Major: CSE
Age: 20
Favorite TV show/movie: Grey's Anatomy
Favorite color: Blue
Favorite music genre: Heavy metal
Other: this is cool!

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
The statement is a reason for supporting a pro-choice position that is believable. (1)	O	O	O	O	O
The statement is a reason for supporting a pro-choice position that is convincing. (2)	O	O	O	O	O
The statement gives a reason for supporting a pro-choice position that is important to me. (3)	O	O	O	O	O
The statement helps me feel confident about how best to support a pro-choice position. (4)	O	O	O	O	O
The statement would help my friends support a pro-choice position. (5)	O	O	O	O	O

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
The statement put thoughts in my mind about wanting to support a pro-choice position. (6)	O	O	O	O	O
The statement put thoughts in my mind about not wanting to support a pro-choice position. (7)	O	O	O	O	O
Overall, how much do you agree or disagree with the statement? (8)	O	O	O	O	O

Q9 Pro-choice known, argument 2 (Condition 3)
Please read the argument and indicate the extent to which you agree or disagree with the statements made about the argument.

Argument: "If you have dreams and you want to have a career, and you accidentally get pregnant, would you really be happy giving up your life for a child you did not want and may resent?"

The information below is about the person who made the above argument.
Nickname: Robbie
Major: Psych
Age: 23
Favorite TV show/movie: Friends
Favorite color: All (purple)
Favorite music genre: Most
Other: None

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
The statement is a reason for supporting a pro-choice position that is believable. (1)	O	O	O	O	O
The statement is a reason for supporting a pro-choice position that is convincing. (2)	O	O	O	O	O
The statement gives a reason for supporting a pro-choice position that is important to me. (3)	O	O	O	O	O
The statement helps me feel confident about how best to support a pro-choice position. (4)	O	O	O	O	O
The statement would help my friends support a pro-choice position. (5)	O	O	O	O	O
The statement put thoughts in my mind about wanting to support a pro-choice position. (6)	O	O	O	O	O
The statement put thoughts in my mind about not wanting to support a pro-choice position. (7)	O	O	O	O	O

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
Overall, how much do you agree or disagree with the statement? (8)	O	O	O	O	O

Q10 Pro-choice known, argument 3 (Condition 3)
Please read the argument and indicate the extent to which you agree or disagree with the statements made about the argument.

Argument: "I feel that the option for abortion is necessary because I believe that the quality of life a person can have is important. I feel that children born to underprivileged families are more vulnerable to crime or abandonment. That is not a situation I would put myself in."

The information below is about the person who made the above argument.
Nickname: Jaime
Major: Communication
Age: 21
Favorite TV show/movie: That ‘70s Show
Favorite color: Camel
Favorite music genre: Alternative rock
Other: Can’t think of anything

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
The statement is a reason for supporting a pro-choice position that is believable. (1)	O	O	O	O	O
The statement is a reason for supporting a pro-choice position that is convincing. (2)	O	O	O	O	O

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
The statement gives a reason for supporting a pro-choice position that is important to me. (3)	O	O	O	O	O
The statement helps me feel confident about how best to support a pro-choice position. (4)	O	O	O	O	O
The statement would help my friends support a pro-choice position. (5)	O	O	O	O	O
The statement put thoughts in my mind about wanting to support a pro-choice position. (6)	O	O	O	O	O
The statement put thoughts in my mind about not wanting to support a pro-choice position. (7)	O	O	O	O	O
Overall, how much do you agree or disagree with the statement? (8)	O	O	O	O	O

Q11 Pro-choice unknown, argument 1 (Condition 4)
Please read the argument and indicate the extent to which you agree or disagree with the statements made about the argument.

Argument: "A fetus cannot live outside of the womb. It is completely dependent on its mother, unlike born human beings. Even if the fetus was alive, the right to live does not imply a right to use someone else's body."

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
The statement is a reason for supporting a pro-life position that is believable. (1)	O	O	O	O	O
The statement is a reason for supporting a pro-choice position that is convincing. (2)	O	O	O	O	O
The statement gives a reason for supporting a pro-choice position that is important to me. (3)	O	O	O	O	O
The statement helps me feel confident about how best to support a pro-choice position. (4)	O	O	O	O	O
The statement would help my friends support a pro-choice position. (5)	O	O	O	O	O

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
The statement put thoughts in my mind about wanting to support a pro-choice position. (6)	O	O	O	O	O
The statement put thoughts in my mind about not wanting to support a pro-choice position. (7)	O	O	O	O	O
Overall, how much do you agree or disagree with the statement? (8)	O	O	O	O	O

Q12 Pro-choice unknown, argument 2 (Condition 4)
Please read the argument and indicate the extent to which you agree or disagree with the statements made about the argument.

Argument: "If you have dreams and you want to have a career, and you accidentally get pregnant, would you really be happy giving up your life for a child you did not want and may resent?"

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
The statement is a reason for supporting a pro-life position that is believable. (1)	O	O	O	O	O

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
The statement is a reason for supporting a pro-choice position that is convincing. (2)	O	O	O	O	O
The statement gives a reason for supporting a pro-choice position that is important to me. (3)	O	O	O	O	O
The statement helps me feel confident about how best to support a pro-choice position. (4)	O	O	O	O	O
The statement would help my friends support a pro-choice position. (5)	O	O	O	O	O
The statement put thoughts in my mind about wanting to support a pro-choice position. (6)	O	O	O	O	O
The statement put thoughts in my mind about not wanting to support a pro-choice position. (7)	O	O	O	O	O
Overall, how much do you agree or disagree with the statement? (8)	O	O	O	O	O

Q13 Pro-choice unknown, argument 3 (Condition 4)
Please read the argument and indicate the extent to which you agree or disagree with the statements made about the argument.

Argument: "I feel that the option for abortion is necessary because I believe that the quality of life a person can have is important. I feel that children born to underprivileged families are more vulnerable to crime or abandonment. That is not a situation I would put myself in."

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
The statement is a reason for supporting a pro-life position that is believable. (1)	O	O	O	O	O
The statement is a reason for supporting a pro-choice position that is convincing. (2)	O	O	O	O	O
The statement gives a reason for supporting a pro-choice position that is important to me. (3)	O	O	O	O	O
The statement helps me feel confident about how best to support a pro-choice position. (4)	O	O	O	O	O
The statement would help my friends support a pro-choice position. (5)	O	O	O	O	O

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
The statement put thoughts in my mind about wanting to support a pro-choice position. (6)	O	O	O	O	O
The statement put thoughts in my mind about not wanting to support a pro-choice position. (7)	O	O	O	O	O
Overall, how much do you agree or disagree with the statement? (8)	O	O	O	O	O

Q14 Attitude toward abortion

Tell us how much you agree or disagree with each statement below.

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
The supreme court should strike down legal abortions in the United States. (1)	O	O	O	O	O
Abortion is a good way of solving an unwanted pregnancy. (2)	O	O	O	O	O

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
A mother should feel obligated to bear a child she has conceived. (3)	O	O	O	O	O
Abortion is wrong no matter what the circumstances are. (4)	O	O	O	O	O
A fetus is not a person until it can live outside its mother's body. (5)	O	O	O	O	O
The decision to have an abortion should be the pregnant mother's. (6)	O	O	O	O	O
Every conceived child has the right to be born. (7)	O	O	O	O	O
A pregnant female not wanting to have a child should be encouraged to have an abortion. (8)	O	O	O	O	O
Abortion should be considered killing a person. (9)	O	O	O	O	O

	Strongly disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
People should not look down on those who choose to have abortions. (10)	O	O	O	O	O
Abortion should be an available alternative for unmarried, pregnant teenagers. (11)	O	O	O	O	O
Persons should not have the power over the life or death of a fetus. (12)	O	O	O	O	O
Unwanted children should not be brought into the world. (13)	O	O	O	O	O
A fetus should be considered a person at the moment of conception. (14)	O	O	O	O	O

Q23 Anonymity manipulation

Please recall the time when you read the three arguments and use the scale to answer the question below.

	None at all (1)	A little (2)	A moderate amount (3)	A lot (4)	A great deal (5)
When you read the information from each person, did you get an impression of who the person was? (1)	O	O	O	O	O

Q15 How do you describe your gender identity?

- Male (1)
- Female (2)
- Describe myself as: (3) _____

Q16 What is your age in years?

_____

Q17 Which categories describe you? Select all that apply.

- Asian (1)
- Black or African American (2)
- Hispanic, Latino or Spanish Origin (3)
- Middle Eastern or North African (4)
- Native Hawaiian or Other Pacific Islander (5)
- White (6)
- Some other race, ethnicity, or origin, please specify: (7)
  _____

Q18 How important is the abortion issue to you?

Use the slider on the following scale to answer the question.

0= not important at all 10 = highly important

0 1 2 3 4 5 6 7 8 9 10

Thanks for your time! Your response has been recorded