Side Effects Of Self-Referential Discussion: The Impact And Interaction Of Deductive And Inductive Routes Of Identity

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INTERACTION OF DEDUCTIVE AND INDUCTIVE ROUTES OF IDENTITY

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ABSTRACT

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Studies of group communication and group identity rest on two competing theoretical concepts of the group, one that prioritizes examining the relationships between members and one that examines the group as a gestalt construct. For live groups, it is not always clear which style, individual or gestalt, is most appropriate or provides more insight into any specific group because groups' identities and communication behaviors are sometimes explicable by both theoretical concepts. This occurs because in real-world groups the formation process typically involves an amalgamation of both influences. In other words, live groups form identities built around both members' individual traits and categorical commonalities among members. When group formation occurs, it is not always clear which theoretical concept should guide the analysis because when both identity formation styles occur together, research currently lacks a way to determine which has more influence on the resulting group. The present study brings our theoretical understanding of group formation closer to groups in a live context. It does so by forming groups under conditions that provide opportunities to foster both formation styles and measuring members' perception of gestalt or individually focal group identity. Results indicate that members tended to perceive a greater degree of gestalt identity, but not to the exclusion of individual identity.

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Introduction

The study of group communication has long been of interest to scholars (Allport, 1924; Hogg & Tindale, 2008; Haslam, Reicher, & Platow, 2011). The subject is fascinating precisely because of the power the group holds. This power derives, in part, from the social identities of the group, which stem from norms or the "regularities in attitudes and behavior that characterize a social group and differentiate it from others" (Hogg & Reid, 2006, p. 7). Social identities, then, are the features that separate one group from another.

But social identities do not exist in a vacuum. Social groups with shared features of social identities can be different from one another depending on the context. For example, it is readily apparent what specific regularities of behavior differentiate a baseball and football team from one another (for a start, merely by looking at the number of players on the field). Yet the casual observer cannot readily distinguish two baseball teams in the same fashion. Of course, a dedicated fan could supply reams of information differentiating two baseball teams from player statistics to club history. Indeed, even the manner in which a dedicated fan communicates about a team differs based on the team's social identity. Fans of the New York Yankees can both recognize Babe Ruth and recall the legends of his title winning years while fans of other teams may only recognize the name without knowing the Yankee's teams of the era as well as they know their own championship teams.

The question, then, is what level of analysis carries the greatest import. In other words, if social identities are the distinguishing features of groups, which aspect of social identity has the most distinguishing influence? To continue the baseball metaphor, when

we think of a particular franchise do we consider the club's defining accomplishments and culture or do we think of the star players?

Rather than beginning the inquiry with groups that carry excessive amounts of preexisting historical context for their social identities (the official rulebook of the MLB is 184 pages long (Lepperd, 2018), and these are merely the shared aspects of identity among baseball teams in one league!) this question is best answered using novel groups. Of course, the earlier example regarding baseball teams should suggest the obvious conclusion; fans dip into both the club's shared accomplishments and individual player's achievements to distinguish their team from another. In other words, for real world groups, no separation exists between these two concepts. In contrast, however, researchers often differentiate between the two because of difficulties in conducting both analyses simultaneously and disagreements over how these two influences interact, or which one is more important in situ (Postmes, Haslam, & Swaab, 2005; Koudenburg, Postmes, & Gordijn, 2017; Koudenburg, Postmes, Gordijn, & Van Mourik Brokeman, 2015).

There are multiple methods of studying small groups, all predicated on different theoretical answers to this question of dominant context. From the multitude of theories, two major trends emerge. In the first, scholars examine individuals as the referent for the group. In the second, scholars conceptualize the group as the dominant entity, one separate from the individuals within. This paper explores both traditions.

However, these parallel traditions extend to more aspects of group study than merely differences over the referent. In a trickledown effect, these influences extend to the analysis of the group. In sum, when asked to determine what distinguishes two

baseball teams some researchers would begin by looking at the individual players and other researchers would begin by looking at the team's gestalt identity.

Of course, the problem of preexisting groups is a pervasive one. Even groups as simple as a baseball team have extensive histories that render such evaluation prohibitive. Researchers work around this problem by creating novel groups, one of the problems with this approach being that depending on the theory used to study the group, researchers will construct the group based on either individual traits or shared culture. This division in creation prompts division in results, because researchers in each camp examine different aspects of the group.

In contrast, the present project aims to create a group created through both means, by individual and shared traits. This creation style offers a unique advantage. By priming both individual and gestalt traits this process allows observation of how each trait then influences the group. The resulting group then presents a viable means of examining how these two styles impact and interact with one another in groups. Observation of this interaction in a laboratory group gives insight into the same impact and interaction in a live group because like a live group it contains both influences. Accordingly, this method demonstrates individual and gestalt is a better descriptive measure of a real-world group. The goal, therefore, is to gain insight into the nature of groups in situ.

The best strategy to gain this insight into the interaction of these two formation styles is the study of group members. Members in groups formed around gestalt identities versus groups formed around individual traits communicate within the group differently and perceive their groups differently. When shared affiliations on a gestalt level define the group, members focus on the similarities they have with one another. In

contrast, when a group forms around members' individuality, members focus on the differences they have with one another.

As such, the literature review not only explores various theoretical approaches to the group but the theoretical approaches to how group members communicate and interact within the group. Understanding the behavior of members in situ provides critical insight into the nature of groups and provides a method of determining the dominant influence, either the gestalt or the individual, on a group's identity.

Review of the Literature

To understand the role of social identity in the social group first demands a basic understanding of the social group itself. Various definitions of group behavior and communication, both aspects of the group, derive primarily from the different approaches to the group. This paper explores how these parallel approaches define two kinds of groups, those built around members and those built around shared categorical associations. Further work on the subject of group identity discusses how to define shared social cognition between group members and how group members interact with those shared associations. Finally, this thesis explores a means of bridging this gap through the social identity approach.

Historical Context for the Study of Groups

The study of groups today descends from two ideological roots (Vilanova, Beria, Costa, & Koller, 2017). The first of these roots stems from Gustave Le Bon (1885) and his work on the crowd. He argued that individuals in crowds were fundamentally different from themselves when away from the crowd. The second root derives from the

work of Floyd Allport (1924) who argued the polar opposite, maintaining that crowd psychology was a fiction.

Le Bon's crowd. Le Bon argued that the crowd represented a dangerous influence that caused individuals to lose themselves in the power of the group. His ideas centered on a submersion, or loss, of personal identity. The result of individuals coming together, in Le Bon's eyes, was a group of unthinking automata entirely at the mercy of the often-insidious will of the crowd. The crowd itself was an almost unthinking entity, more often the extension of a singular actor or conductor's domineering desires (Le Bon, 1885).

Allport's individual within the group. In the tradition of Floyd Allport (1924), one approach to the study of groups is to maintain, "there is no psychology of groups which is not essentially and entirely a psychology of individuals" (p. 4). Allport and many contemporaries felt that if individuals learn from one another, then the group is a collection of interpersonal relationships. Interpersonal communication, in this approach, reveals the character of the group and it is unnecessary to make a theoretical shift from the individual to the group analysis because "the individual in the crowd behaves just as he would behave alone only more so" (Allport, 1924, p. 295).

Although Allport's (1924) notion of the nonexistence of group psychology faded, the persistent concept of a group as an individual phenomenon remained. In similar fashion, Le Bon's (1885) idea of the all-consuming crowd gave way to a more nuanced understanding of crowd dynamics. The study of groups remained a topic of interest, but in the wake of the Second World War, renewed interest in the group dynamics that gave rise to Nazism encouraged a renaissance of interest in the study of groups.

Post-World War II. Interest in the power of groups to produce violent behavior grew and the topic became an acute interest of scholars. While research did examine the power of the group to produce positive behavior, high profile examples like the Stanford Prison experiment, the Milgram shock tests, and the Asch conformity experiment demonstrated the pervasive influence of the group and the ability of groups to push people towards anti-social behavior. As a result, groups tended to hold an association with negative behavior (Smith & Postmes, 2009; Hornsey, 2008; Wittenbaum & Moreland 2008).

Modern study. Work over the past three decades takes a more balanced view. Examples like groupthink, excessive polarization, and deindividuation all highlight the potential for destructive and aggressive group behavior, but researchers studying these topics all examine factors within groups that cause them (Reicher, 2001). Instead, many of these negative examples derive from the power of groups' social identities (Hogg & Reid, 2006; Cialdini, Reno, & Kalgren, 1990). Contemporary research, in contrast to previous study, emphasizes the dual and complex nature of the group, looking at positive effects (Thomas, Smith, McGarty, & Postmes, 2015; Thomas, Mavor, & McGarty, 2012) alongside the negative (Quandt & Festl, 2017).

Differences across disciplines. As the study of groups grew to be more nuanced and attracted greater interest over the course of the post-World War II era differences in approach developed between disciplines. Two primary disciplines, social psychology and communication, are the most important to the study of groups today. While these two fields are distinct, it is important to acknowledge, "communication is intrinsically social-psychological, and communication phenomena have gained considerable traction

in the social-psychological literature," (Hornsey, Gallois, & Duck, 2008, p. 750).

Overlap, as a result, is expected.

The study of groups represents one such point of intersection. Some researchers maintain that the study of groups is inherently interdisciplinary due to the extensive and important nature of contributions from both sides (Forsyth, 2000, Forsyth & Burnette, 2005; Hornsey, et al., 2008; Hare, Borgatta, & Bales, 1955). But because this divide exists, this paper gives an overview of the theories used to study groups. Further, it demarcates some of the notable work from both disciplines and explores the differences and similarities between the two in the study of groups.

Two Theoretical Approaches

Researchers tend to adhere to two primary traditional approaches to study of the group. The first tradition treats the group as a collection of interpersonal relationships, best understood through interpersonal principles generalized to the larger group (Keyton, 2006). The second is to treat the group as a distinct entity best understood as a gestalt unit distinct from the participants, possessing some measure of its own force and power that derives from the participation of the individuals that comprise it (Wittenbaum & Moreland, 2008; Hornsey, 2008).

Groups as a collection of interpersonal relationships. Instead of beginning with the concept of a group, some researchers prefer to work up from the interpersonal. This tradition stems from the work of Floyd Allport (1924) who rejected the idea of a group psychology and instead opted for the primacy of the individual. Over time, Allport's hardline stance faded but the core of his position remains influential. The development of this line of thinking grew from the central tenet that interpersonal

communication and group communication are intrinsically the same. As the interpersonal is an extension of the personal, so too is the focal point of group study an extension of the individual. This common theme ties together the theories of this section, although they differ on the mechanisms that define the group and approaches to examination of the individual's relationship to the group.

Theories of social learning. The first set of theories that emphasize the importance of the individual all conceptualize the group as a product of shared cognitive processes. In other words, individuals interact with one another, form shared notions of self and social identity, and those notions create the foundation of the group. Social comparison, symbolic convergence, and optimal distinctiveness theories all attempt to explain this winnowing of individual thought to group level experiences by looking at interactions and how they create groups.

Social comparison theory. One of the first theoretical approaches to the power of the group is social comparison theory. Social comparison theory argues that individuals try to evaluate themselves through comparison to others (Festinger, 1954). Individuals seek out others with similar views and attitudes to compare themselves to, and then they evaluate themselves and modify behavior or beliefs accordingly (Festinger, 1954). Social comparison theory elucidates the importance of interpersonal comparison and individuals' constant awareness of others.

Social psychologists tend to examine the individual side of social comparison theory (Suls & Wheeler, 2012) by refining the theory (Tesser, 1988; Wheeler, Martin, & Suls, 1997; Stapel, 2007), examining how individuals make comparisons (Wills, 1981; Wheeler & Miyake, 1992; Crocker, Thompson, McGraw, & Ingerman, 1987), and

determining the implications of those comparisons (Lyubomirsky, & Ross, 1997; Pahl, Eiser, & White, 2009; Salovey & Rodin, 1984). While the group remains a component of this focus, the emphasis often rests on how and why individuals choose to make specific comparisons.

Communication researchers often overlap with these research aims, in fact a great deal of work on social comparison theory falls along interdisciplinary lines. However, communication literature typically examines different contexts and interactions that facilitate comparisons (Ellison, Steinfeld, & Lampe, 2007; Sagioglou & Greitemeyer, 2014; Suls, 1977), and how those interactions then create the group (Barsade, 2002), or influence members of groups (Bond, Fariss, Jones, Kramer, Marlow, Settle, & Fowler, 2012; Coviello, Sohn, Kramer, Marlow, Franceschetti, Christakis, & Fowler, 2014; Hancock, Gee, Ciaccio, & Lin, 2008). The result of this interdisciplinary focus and influence of the communication field is a great deal of emphasis on social networks and the comparisons they elicit (Feinstein, Hershenberg, Bhatia, Latack, Meuwly, & Davila, 2013; Forest & Wood, 2012; Liu, Li Carcioppolo, & North, 2016; Haferkamp & Krämer, 2011; Ledbetter, Mazer, DeGroot, Meyer, Mao, & Swafford, 2011).

Symbolic convergence theory. Instead of looking at contrasts as a way of setting up the barriers that define a group, symbolic convergence theory examines the shared perceptions that create a group (Bormann, 1972; Bormann, Craan, & Shields, 1994). Symbolic convergence occurs when individuals construct a shared fantasy, and this shared cognitive understanding becomes the basis for the existence of the group. These group fantasies are not mutual delusions, but rather a shared understanding of events,

narratives surrounding the group, and the act of sharing stories. Convergence is the result of a shared narrative, or the mutual interpretation that bonds members to the group.

Work on symbolic convergence belongs predominantly to the communication discipline. Communication influences upon group communication include the development of shared fantasies for political or public discourse (Bormann, 1982; Goodnight & Poulakos, 1981), use of socialization in organizations (Bormann, 1983; Cragan & Shields, 1981) and group formation (Bormann, 1986; Bormann, 1990; Cragan & Wright, 1999). Symbolic convergence theory lends itself predominantly to live settings (Kramer, 2011; Kramer, 2004; Zanin, Hoelscher, & Kramer, 2016). This is because symbolic convergence is concerned with the rhetorical construction of fantasy and not the specific features of the fantasy, although researchers often do examine case studies and specific effects of a particular fantasy in situ (Darsey, 1995).

Optimal distinctiveness theory. In optimal distinctiveness theory, individuals attempt to balance the level of conformity to the group with level of individuality, aiming to attain an optimal level of distinctiveness (Brewer, 1991).

Research on optimal distinctiveness theory belongs primarily to the social psychological discipline. While researchers across many disciplines and with interests ranging from sports management (Andrijiw & Hyatt, 2009), public relations (Einwiller, Laufer, Ruppel, 2017), celebrities (Guion, 2017), to marketing (Boley, Strzelecka, & Watson, 2018) have all made use of optimal distinctiveness theory, the majority of the work remains in the psychological field. The vast majority of this work concerns groups of all kinds. Optimal distinctiveness applies to a wide range of group level phenomena and researchers actively utilize it for many different purposes (Leonardelli, Pickett, &

Brewer, 2010; Sedikides & Brewer, 2001; Leonardelli & Toh, 2015; Leonardelli & Lewin Loyd, 2016).

Theories of the individual. The next set of theories almost ignores the construction of the group. These theories primarily aim to explain behavior and social interaction on the individual level. Researchers then must adapt the theories to group communication, often with caveats. Sometimes this causes these theories to be less popular than their group-minded counterparts are. However, social cognitive, uncertainty reduction and cognitive dissonance theories all provide insight into the nature of groups on the individual level.

Social cognitive theory. Social cognitive theory also presents a contrasting viewpoint to the previous theories mentioned in this section. Social cognitive theory argues that individuals learn through observation (Bandura, 1986; Bandura, 1977). Bandura's (1986) theory deals primarily with how and why individuals engage in social learning. This typically operationalizes into studies of social agency, examining how individuals utilize social networks (Bandura, 2001). Social cognitive theory, while aimed primarily at explaining individual behaviors, demonstrates how groups can form around member's unified learning experiences.

Social cognitive theory is predominantly a psychology theory with less influence on communication scholars than most other theories presented here. However, communication researchers use social cognition in media contexts, for example television (Joyce & Harwood, 2014), news (Appiah, Knobloch-Westerwick, & Alter, 2013), selective exposure (Knobloch-Westerwick, & Hastall, 2010), social support (Guan & So, 2016), and message effectiveness (Marmo, 2013).

In the context of groups, psychologists predominantly use social cognitive theory to examine agency on the individual and interdependent level, examination on the interdependent level often spirals into study of groups (Lee, Stajkovic, & Sergent, 2016; Bandura, 2001). This often takes the form of studies on group performance, (Lichacz & Partington, 1996), teams (Kozub & McDonnell, 2000), and self-efficacy (Bandura, 1999; Bandura, 2000).

Cognitive dissonance theory. Cognitive dissonance theory argues that individuals do not want an incongruity between thoughts and actions, and when confronted with dissonance between the two, they modify accordingly (Festinger, 1957; Festinger, 1962; Festinger & Carlsmith, 1959). This process is important for group communication because some level of conflict may occur between the individual self and the social self as people communicate within groups. The process of navigating that dissonance provides some insight into the process by which individuals adhere to social values and norms more over time.

Uncertainty reduction theory. Another theory that focuses on the individual level of analysis is uncertainty reduction. Uncertainty reduction theory argues that individuals are averse to uncertainty in interpersonal relationships and seek to reduce that uncertainty whenever possible (Berger & Calabrese, 1975). The drive to reduce uncertainty in a group often causes members to socialize in specific patterns. As a result, uncertainty reduction sometimes finds itself paired with other theories or model of group behavior, uncertainty reduction theory used to provide a motivation for individuals' actions and the companion theory used to provide a method of acting upon that motivation (Hogg & Reid, 2006).

Psychology uses uncertainty reduction to examine topics such as group attitudes (Clarkson, Smith, Tormala, & Dugan, 2017) and mortality salience (Hohman & Hogg, 2017). Social psychologists often pair uncertainty reduction with social identity theory to examine membership dynamics like affiliation (Hogg, 2000; Hogg & Mullin, 1999), strength (Hohman, Gaffney, & Hogg, 2013), and adherence to group norms (Stein, Van Kleef, Van Knippenberg, Hogg, Homan, & Moffitt, 2010). Uncertainty reduction is also notably important to the study of organizations in social psychology (Loi, Chan, Lam, 2013; Boroş, Curşeu, & Miclea, 2011; Ashforth, Harrison, & Corley, 2008).

Communication scholars often utilize uncertainty reduction theory to explain and develop an understanding of the socialization processes within small groups in the context of organizations. Uncertainty reduction can describe initial and ongoing socialization between members and group processes (Lester, 1987; Kramer, 1994; Gallagher & Sias, 2009), information filtering (Ancona & Caldwell, 1992; Teboul, 1994), volunteering (Douglas & Kim, 2013; McComb, 1995), downsizing (Johnson, Bernhagen, Miller, & Allen, 1996; Kramer, 1993), and during transition periods (Kramer, & Hoelscher, 2014; Kramer, Dougherty, & Pierce, 2004).

Social influence on the interpersonal level. A common theme of the preceding theories is a focus on the social relationships of the individual, not the group. Undeniably, some members of any group exert more or less influence than others do as they rise to the status of leaders, or losing influence and fall to the status of outsiders. Investigation into why this occurs involves the study of social influence, or the means individuals use to gain influence over one another (Kelman, 1958).

Social influence in small groups. Social influence is critical to small groups because particularly influential individuals often have the ability to create their own clusters of followers and eventually form groups through these methods, sometimes unintentionally. This means studying how members obtain social influence is key to understanding group dynamics. Theories and notable work in this tradition includes social impact theory, Cialdini's (2016) weapons of influence, and investigation into the relational side of groups.

Social impact theory. Understanding the group's influence in broad terms is the domain of social impact theory. Social impact theory argues that influence stems from strength, immediacy, and quantity of sources (Latané, 1981). These three factors promote influence directly, and each describes ways influence grows based on features of the communication of a norm (Hogg & Tindal, 2008; Latané, 1981).

Social impact theory is unique due to its strongly mathematical approach to influence. As a result, it is often a choice for researchers attempting to model or simulate live conditions (Tseng, Chen, Yu, & Wang, 2014; Nettle, 1999). This offers a great deal of utility for researchers looking across disciplinary lines and for researchers looking at specific phenomena.

In the realm of social psychology, inquiry into social impact theory in general includes public speaking (Latané, Harkins, 1976; Jeffrey, & Latané, 1981), expanding the theory itself (Nowak, Szamrej, & Latané, 1990), and persuasion (Latané & Wolf, 1981; Wolf & Latané, 1983). In the context of groups, social psychologists utilize social impact theory to describe bullying (Tseng, Chen, Yu, & Wang, 2014; Salmivalli, Lagerspetz, & Björkqvist 1996; DeWall, Twenge, Bushman, Im, & Williams, 2010),

social loafing (Williams, Harkins, & Latané, 1981), anxiety (Rapee & Heimberg, 1997), and group influence (Latané, & Nida, 1979).

Communication researchers do not utilize social impact theory to the extent that social psychologists do. A notable exception to this is in the domain of market research and social media use. Communication scholars commonly use social impact theory to examine both regular (Argo, Dahl, & Manchanda, 2005), and e-commerce (Kwahk, & Ge, 2012; Mir, & Zaheer, 2012) alongside social media use (Perez-Vega, Waite, & O'Gorman, 2016).

Cialdini's weapons of influence. Cialdini (2009; 2016) defines specific routes to social influence known as the weapons of influence. He defines seven means to obtaining influence. These routes allow individuals to exert influence upon another through use of various psychological tactics. These seven principles are reciprocity, commitment, social proof, authority, liking, scarcity, and unity (Cialdini, 2009; 2016).

Cialdini's (2016) work is, much like social impact theory, notably interdisciplinary in fields outside of social psychology and communication. Scholars in law (Davidov, & Davidov, 2013; Guthrie, 2004; Hughes, 2016; Cialdini, Wissler, & Schweitzer, 2003), cybersecurity (Stajano, Wilson, 2011; Rosenthal, 2014; Oliveira, Rocha, Yang, Ellis, Dommaraju, Muradoglu, Weir, Soliman, Lin, & Ebner, 2017), and design (Lockton, Harrison, & Stanton, 2008; Gkika, & Lekakos, 2014) all make use of the weapons of influence, often in a cross-department and collaborative context (Kaptein, Nass, Parvinen, & Markopoulos, 2013).

Psychologists, generally, are more concerned with developing a full understanding of the weapons themselves. They examine the mechanisms (Burger,

Messian, Patel, Del, & Anderson, 2004; Bornstein, 1989), conditions (Guadagno, Okdie, & Muscanell, 2013; Muscanell, Guadagno, & Murphy, 2014), and social or personal traits (Gudjonssona, Sigurdsson, Einarsson, & Einarsson, 2008; Guadagno, & Cialdini, 2002; Guadagno, & Cialdini, 2007) that allow these weapons to function and affect the group. Broadly, psychologists seek to expand the understanding of the weapons themselves, in particular how and why they function.

In contrast, communication scholars focus more on the operationalization of these weapons in real life. Again, cross-disciplinary efforts are common (Goldstein, Cialdini, & Griskevicius, 2008) because operationalized contexts are just as rich a medium to satisfy both the needs of social psychologists and communication researchers. Notably, however, the communication field does much more work to use the weapons in specific, rather than general, contexts such as campaigns (Perloff, 2017), online networks (Metzger, Flanagin, & Medders, 2010), advertising (Freling, & Dacin, 2010), and relationships (Boster, Shaw, Hughes, Kotowski, Strom, & Deatrick, 2009).

Relational groups. Some groups such as sororities and fraternities exist to facilitate relationships among members. Researchers sometimes refer to work in this vein as relational or expressive group communication (Keyton, 2000). The study of relational groups is predominantly the domain of communication scholars, although cross-disciplinary efforts do exist (see Wittenbaum, Hubbell, & Zuckerman, 1999).

The goal of this approach is to examine how individual relationships between members create and in turn affect a group (Keyton, 2006). Research interests vary because relational groups present a wide variety of subjects. Some group level interests include tension between personal and group values (Alavi, & McCormick, 2007; Crown,

2007; Jehn, 1994), distribution of information (Wittenbaum, Hollingshead, & Botero, 2004; Hollingshead, Jacobsohn, & Beck, 2007; van Swol, 2009), member's conflicting goals (Barnes, & Keleher, 2006; Brodbeck, Kerschreiter, Mojzisch, & Schulz-Hardt, 2007), and within-group conflict resolution (Schweiger, & Sandberg, 1989). On an individual level, researchers examine leadership (Barge, & Hirokawa, 1989; Wittenbaum, 2000), ostracizing (Wittenbaum, 1998; Wittenbaum & Bowman, 2004), and the convergence of both group and interpersonal influences (Ervin, Bonito, & Keyton, 2017). The study of relational groups involves a great deal of examination of specific communication behaviors and as such, there is a diversity in approaches both theoretical and methodological. The unifying theme however is the underlying emphasis and focus of the studies themselves.

Interpersonal themes in the study of groups. The common thread of the above perspectives is that interpersonal interactions generalize to group interactions. As a result, the social influence exerted by an individual appears in a group setting by simply increasing the number of recipients. In turn, the observation components of social learning theories generalize as well, learning occurs as many individuals observe and transmit together, i.e. instead of observing the actions of a single other, the individual observes the actions of many others. Like a spider web, the group develops out of strands, each strand a single interpersonal interaction that overlaps and ties together until it forms a whole. Therefore, the group begins and ends with the perspective of the individual and at no point does any kind of distinct entity that makes up 'the group' appear as a component of observation because 'the group' is the sum of these interactions not the source.

Social influence and the role of interpersonal relationships in defining the group is one piece of the literature on the study of groups. Other researchers examine groups as a whole unit, neither wholly separate from the individual nor wholly related.

Gestalt groups. In contrast to Allport (1924) and his individually focused group psychology, Le Bon (1885) argued that the crowd constituted a fundamental rejection of individual psychology. Later scientists interested in Le Bon's ideas such as Festinger, Pepitone, and Newcomb (1952) as well as Zimbardo (1969; 1971), developed this tradition. They argued that crowds represented a loss of individual identity and an immersion into a unique environment with its own set of theoretical rules, behaviors, and identities. As a result, many approaches to group behavior examine the group as a conceptual unit distinct from any individual members, essentially treating the group as a gestalt unit in itself. In this area, groups tend to appear as a set of processes aimed at different goals.

Forsyth's features of groups. The gestalt approach to group development remains rooted in the idea that groups have different features that rise above the individual level. Forsyth (2014) defines those features as interactions, goals, interdependence, structure, and cohesion. Each of these features allows for examination of different aspects of the group, all aimed at developing an understanding of how the group functions as a unit. The most common kind of analysis on this level is with phase models.

Phase models. Among the earliest attempts to explain group behavior are phase models, or models that describe the different points in the lifecycle of the group (Frey, Gouran, & Poole, 1999). Phase models generally come from a communication research

agenda because they are concerned primarily with the specific communication acts occurring within a group. However, organizational psychology exhibits a similar interest in phase models, although their efforts are relatively unique within the field of psychology (Levine, & Moreland, 1990; Guzzo, & Dickson, 1996; Sanna, & Parks, 1997; Ilgen, Hollenbeck, Johnson, & Jundt, 2005).

Unlike the previous sections, the paper does not provide an accompanying introduction to the usage of the theory in different research fields. This is because phase models generally have limited variance in use from one field to the next. Broadly, researchers regardless of discipline, either test, refine, or apply phase models to situations or simulations in an attempt to develop a clearer understanding of how groups behave (Forsyth & Burnette, 2005). The collaboration and overlap between organizational psychologists and the communication field (Hornsey et al., 2008) only increases the degree of similarity. While psychology and communication scholars are likely to create different kinds of phase models with emphasis on different aspects and processes, the overall goal is the same, to describe the phases of phenomena related to groups.

There are two general kinds of phase models. The first attempts to describe broad group processes that every group must go through irrespective of the specific nature of the group. The second kind of phase model attempts to describe the phases a group should adhere to in order to accomplish a specific goal or those that accompany a specific phenomenon, these are goal oriented phase models. Exemplars of the first kind of phase models are Tuckman's (1965) model and the multiple sequences model. Archetypal examples of the second are interaction process analysis, functional group communication theory, and the interact system model of decision emergence.

Tuckman's model. Among the first conceptualizations of the group is the norming-forming-storming-performing model of group development (Tuckman, 1965). This model looks at the different stages of group development, examining the various actions groups take throughout their lifecycle. Although today the model includes more stages, it broadly defines the various stages of development groups go through as they grow and eventually disperse (Tuckman, 1965; Tuckman & Jensen, 1977).

Tuckman's (1965) model is particularly remarkable for its broad applicability and robustness (Keyton, 2006; Frey, 1996). These traits lead to widespread use of Tuckman's model outside the communication and social psychology fields. Researchers studying human resources (Bonebright, 2010), nursing (Natvig & Stark, 2016), and gaming (Buchan, & Taylor, 2016) have all used the norming-forming-storming model.

The multiple sequences model. Another archetypal framework in the phase model tradition is the multiple-sequences model, which argues group communication does not occur in sequential steps. Rather, it occurs in tracks that groups can switch between as needed (Poole, 1983; Poole & Roth, 1989a; Poole & Roth 1989b). Poole (1983) defines four tracks: (a) task, (b) relation, (c) topic, and (d) breakpoints. In contrast to Tuckman, these tracks can all occur at different points without a set, or expected, pattern. Poole (1983) argues that groups respond to specific needs that arise during processes,

Goal oriented phase models. The antecedent of many phase models is Bales' (1950) interaction process analysis, which classifies different communicative acts within groups in terms of their relationship to group tasks. Theories and phase models born from this historical root often classified by researchers as the outcome-oriented approach as a result (Bales & Strodbeck, 1951; Frey, 1996).

The second goal oriented phase model is the interact system model of decision emergence. The interact model defines four stages of decision-making, orientation, conflict, emergence, and reinforcement (Fisher, 1970; Fisher & Hawes, 1971). Fisher's (1970) creation offers an important bridge between the broad phase models and the more focused descendants because it offers a broad approach to a wide problem, while simultaneously acknowledging that the model has limitations and does not describe every group.

The last, functional group communication theory, blurs the line between phase model and theory as it examines how group communication acts and features relate to task performance and quality of decision-making (Gouran & Hirokawa 1996). Functional group communication theory analyzes the features of communication in lieu of the communicative act itself, concerning itself with the purpose and use of communication within the group, constructing certain features that contribute to effective decision-making (Hirokawa, 1983).

The goal of these perspectives from Tuckman (1965) and Poole (1983) to Bales (1950), Fisher (1970), and Gouran and Hirokawa (1996) is to examine the broad phases of group interactions and the resulting collective behaviors. This paper focuses on one particular phase, norm formation.

Using the Two Approaches Together

The two styles of the previous section define, broadly, two overarching ways of approaching the study of groups. These two theoretical approaches are both appropriate, albeit in different contexts. It is entirely appropriate to examine the same group using

different means from different traditions. In many ways, this unified approach can be complimentary.

For example, when examining a professional baseball team a researcher might observe team meetings and examine the stages they undergo during these meetings using functional group communication theory. But they might also study the team's season long goal of winning a championship as a component of the shared fantasy from symbolic convergence theory. In similar fashion, they might examine how new players from a mid-season trade acclimatize to the new team using uncertainty reduction and in turn how the captain leads using Cialdini's (2016) weapons of influence. While such a work would be immense, it would extensively document how the group functions. Unfortunately, due to the scale of such an undertaking, it is often unfeasible and/or impractical, not to mention the other concerns such a study would raise.

As a result, pragmatism and accuracy both demand a degree of discretion when it comes to picking theories to apply. The question this raises is if a research team did manage to collect all that information about a baseball team, which piece or pieces of evidence would then give the best picture of the group. In reality, depending on the aims of the study, this answer is likely to be different. But even studies with similar aims can differ on methodology.

Imagine a group of researchers, each intending to examine the same baseball team, trying to resolve a dispute about which theory to use. Arguably, the first camp might say, the most important part of the team is why it exists in the first place, which is to win championships. The answer then would stem from symbolic convergence's shared fantasy. But another part of the research team might counter that how the group

goes about achieving this goal matters more, in which case functional group communication theory would be a better fit. Still another group of researchers might protest that while most people remember Babe Ruth, far fewer can name the rest of the lineup from the '27 Yankees, in other words, leadership is the most salient feature of the group.

The question then, is which overarching tradition should guide an investigation. Drilling down to which theory is likely to rest more on the specific aims of the study, but because researchers still need to know where to start investigating it is important to develop a deeper understanding of the assumptions underlying theories from both traditions. Critically, however, groups are not homogenously distributed. In other words, the best theory to describe several different groups may be several different theories. The goal, then, cannot simply be to find a universally better theoretical approach.

Going back to the example of the study of a baseball team, each part of the research team applied various theories, and depending on the aims of the study, each one provided a correct answer. Building off that, instead of trying to find a catch all theoretical answer, the goal of this paper is to provide information to inform the decisions regarding what theories to use when studying groups. In other words, if the question is how best to describe the baseball team, this paper aims to demonstrate some of the features of the team researchers can examine to help inform decisions about theories to use and consult when answering that question.

This is, of course, a larger goal than any single study can adequately hope to address. This paper is not the definitive statement on the subject, but rather a careful first step. It does not provide a framework that allows, in most cases, for the selection of a

specific theory. It aims to examine certain salient differences between groups best described by theories within the gestalt tradition versus groups best described by theories within the individualistic tradition.

This study does so by asking the following research question: To what extent does social identity formation through self-referential discussion lead to an increase in the salience of a heterogeneous or homogeneous social identity for groups that experience deindividuation compared to those that do not?

Unpacking this question requires first an understanding of social identity creation, then an exploration of the mechanics of social identity salience, and finally deindividuation. Along the way, this paper defines self-referential discussion and introduces the social identity approach as a way of tying all these disparate pieces together. The social identity approach focuses on two theories of groups unexplored in the preceding sections. The reason this paper introduces the social identity approach later is because unlike the preceding theories, the social identity approach is concerned with the mechanics underlying the creation of social groups and as a result is uniquely appropriate to bridging the gap between social identity formation and a group's resulting social identity.

Defining Key Terms

The question introduced in the previous section comes with quite a few terms. Unpacking those terms is critical to understanding the question.   As such, this section provides a broad overview of some of these terms. For some, extensive sections in the later parts of the paper detail these terms and the associated research in more detail. For them, in essence, this section provides a preview that gives enough information to set the

stage for the latter sections that provide research context and expansions of the original concepts introduced here. This section covers these key terms in the order they appear in the question, social identity formation first and deindividuation last.

Social identity formation. Social identity formation generally encompasses everything a group does to create a social identity, ranging from overt efforts to define the group as a whole too subtle and often silent regulatory behaviors (Turner et al., 1987). In this paper, social identity formation utilizes a wide definition because in many ways every interaction within a group setting and in some cases the lack of certain interactions, helps to define the group in the minds of the members. Especially because this paper discusses the two approaches to the study of groups, it encapsulates a broad framework for social identity formation because each approach studies this aspect of the group differently.

Self-referential discussion. Sometimes referred to as 'meta-discussion' this is any kind of discussion where the topic is the group itself. In this paper, self-referential discussion is simply a winnowed down version of social identity formation. In order to control certain variables, this paper restricts social identity formation in the small groups created to specific contexts. Self-referential discussion is nothing more than a convenient way of demarcating the difference between unrestricted interaction and the discussion that occurs specifically in this paper.

Heterogeneous and homogeneous identity. Heterogeneous and homogeneous social identity refers to the extent to which an individual member of the group perceives themselves as either a heterogeneous or homogeneous member of the group. Some groups form around shared traits and affiliations while others form around individual

contributions, but in situ groups can present both options at once (Postmes, Haslam, & Swaab, 2005). For example, while a pitcher plays a different role on a team than a catcher, they are both members of the overall team. A player can view themselves as either a team member or an extension of the role they hold in the team, in the first case emphasizing their homogeneity towards other members of the group and in the second emphasizing their heterogeneity.

Deindividuation. Deindividuation is a specific kind of social identity phenomena. In certain cases, an individual's social identity becomes critically important due to manipulations of the relative differences among members of a category (Reicher et al., 1995). Deindividuation is a powerful state of heightened social identification that makes identifying and associating behavior with a particular group much easier.

Social Identity Creation

When creating a social identity, norms form the basis for the new identity. Initially, norms and social identities are non-distinct, in other words the accepted social norms are the social identity of the group. Once norming gives rise to a social identity, a group exists.

The importance of social identities. A common theme throughout group research is the influence of the group. Reicher Spears, and Postmes (1995) write, "there is no generic group effect," (p. 173). They argue that groups do not have any automatic features, and the power of the group stems directly from the characteristics of the group. In other words, groups' social identities provide key insight into the behavior of groups and the behavior of individuals with group affiliations. Social identity creation is an important part of both interpersonal and gestalt perspectives (Hogg & Tindale, 2008). As

a result, when examining group behavior it becomes critically important to study the formation, content, and effects of various aspects of the social identity.

The role of social norms. Norms are the foundation of social identities and the application of a social identity in a situation. For example, a group of friends playing a pickup game might decide to emulate their favorite player, who is brash and outspoken. In turn, they act brash and outspoken. The team would also develop other norms, such as wearing helmets when batting. Each of these is a component of the overall social identity of the baseball team. Within groups, social norms not only create the basis of social identities, they aid in the formation of social identities. No matter how new a player is, they can quickly grasp simply norms like wearing a helmet that contribute to their new social identity.

Two classification schemes for norms. Researchers generally categorize norms in two ways (Postmes, Haslam, & Swaab, 2005; Hogg & Reid, 2006). The first focuses on content and the second focuses on codification. When looking at content, researchers tend to categorize norms by what meaning they convey to the group. This perspective examines the impact norms have from the perspective of what specific behaviors they encourage or discourage. When looking at codification, researchers tend to look at the formation of norms. This perspective examines the impact of formation on the norm itself, examining the various routes groups take to create norms and the various means they use to communicate or enforce those norms.

The content of norms. Content norms tend to sort into various classification schemes. Engleberg and Wynn (2013) propose one such scheme where norms focus on

interaction, procedure, status, or achievement. These four classifications broadly define norms by how the group uses them to define and inform behavior.

This classification scheme is specific to the role of the norm itself, examining how members of the group utilize the norm. Other classification schemes examine the typology of the norm, arguing that norms fall along continua. The focus theory of normative conduct lays out broad continua that describe the role of the norm (Cialdini et al., 1990).

The codification of norms. Analysis of the codification of norms tends to look at the ways in which groups convey or demarcate norms. Engleberg and Wynn (2013) again propose two broad categories of formation: implicit and explicit. Implicit norms refer to norms that group members have not formally agreed upon while explicit norms refer to those upon which group members have formally agreed.

Individuals' active interaction with both form and content of norms.

Individuals cannot adhere rigidly to every norm they encounter. Some social identities carry contradictory or poorly understood norms and in those cases, individuals must decide which norm to follow or how rigidly to adhere to the norm. Especially in cases where form and content contradict one another, individuals face a choice as to how they will interact with the norm.

Returning to the baseball team, it is extremely common for coaches, managers, or players to argue with the decision of the umpire during a game, yet the norms would

suggest that this argument is taboo because rulebooks carry punishments for such an activity (Lepperd, 2018). These arguments stem from two kinds of normative disagreement, first a disagreement over the codified rule, and second a disagreement over the injunctive rule against questioning the umpire's authority during a game.

As the example demonstrates, individuals are always negotiating the importance of norms. In context, if a manager must decide on the appropriateness of arguing a call, they must weigh the form of the norm (is the manner in which they want to voice their disagreement appropriate?) and the content of the norm (was the umpire's call incorrect?). In situ, these rules act as a check and balance against one another. In a broader sense, explicit and active negotiation of norms occurs every day. Individuals openly weigh different norms and decide the appropriate level of adherence and punishment for deviation. Groups develop different methods of solving these normative disputes and in turn, this aids in the creation of a gestalt social identity (Hogg & Reid, 2006; Smith & Postmes, 2011).

The source of social norms. The formation of a social identity begins with the development of social norms. Over time, norms become social identities. Postmes, Haslam, & Swaab (2005) argue that social identities and norms appear through either an inductive process or a deductive process. In this model, termed the interactive model of social identity formation (IMSIF), social identities stem from two sources, inductive and deductive. Deductive identity formation involves top-down group comparisons. This occurs when members of a novel group examine the superordinate groups to which they belong. The group is then a gestalt construct with the common bond of identity centered on a clear prototype.

Alternatively, social identities come from an inductive approach. Inductive formation grows from group members' interactions. Inductive creation of a group's identity is a bottom-up process in which interaction defines the group. Members negotiate individual norms and components of the social identity piecemeal until they reach a consolidated social identity (Postmes, Haslam, & Swaab, 2005). In this case, the group is a heterogeneous construct with the common bond of identity centered on member's personal identities.

Both of these approaches emphasize the relative importance of examining the way social identities appear, because an examination of the identity formation process reveals characteristics about the future of the social identity. The source of formation is important to discerning how the identity functions and how individuals perceive the components of the identity. For example, in a later study, Postmes, Spears, Lee, and Novak (2005) demonstrated that utilizing a deductive or inductive route to social identity formation has consequences for the social acceptability of adherence to specific norms within the umbrella of a social identity.

The influence of social identities on behavior. People are social animals. They base decisions on considerations of multiple social contexts, often overlapping. Yet groups do not remain static. The social identity of a political party a year after its inception is likely to be different from its identity ten or fifty years later. While occasionally outside influences change a social identity (for example a political party created to advocate for one issue that then succeeds in promoting that issue), by and large changes in a social identity over time stem from the group members applying different interpretations, standards, and regulation techniques to aspects of the social identity.

The existence of this shift, however, is important to understanding how a social identity influences behavior. Individuals do not rigidly conform to a social identity, and their behavior reflects this. Various theories exist to explain why social identities gain or lose salience for individuals. Some examine how individuals interact with social identities (Cialdini, Reno, & Kalgren, 1990; Ajzen, 1985; Ajzen, 1991; Ajzen, 2002), while others examine the role of identity from the group level (Turner & Killian, 1987; Tajfel & Turner, 1979). This paper utilizes the social identity approach because, while it stems from the group level of analysis, it offers the ability to bridge the gap using models built off its theoretical framework.

The Social Identity Approach

The social identity approach consists of two theories, social identity theory and self-categorization theory. Together, these theories provide an explanation for the importance of social groups as a component of social identity and the power of the group.

Social identity theory. The first of these two is social identity theory. Social identity theory rests on two central ideas. First, when members join and accept a group they determine the meaning of the group through comparison to the relevant out-group. Second, members try to define the in-group they belong to positively, especially in relation to the out-group. People do not want to join inferior groups and seek to enhance the prestige of the ones to which they do belong.

Tajfel and Turner (1979) point out that this competition is not an endpoint, but a beginning to understanding the process of group behavior and individual behavior in relation to the social category. Intergroup conflict and individual behavior stem in part from the social realities individuals find themselves tied to, but these issues are

contextually dependent. Groups with negative associations do not always engage in competition with another group to enhance the prestige of their own, members may defect from the group, reframe defects as positive attributes, or claim other positive attributes (Haslam et al., 2011; Ellemers, Spears, & Doosje, 1999; Reicher & Haslam, 2006). All of these functions are relational. They shift depending on the relevant out-group in comparison.

Critically, social identity theory also advances that when social identities are salient, individuals operate at the group level when considering issues of identity. The group becomes a marker of the individual's power and importance.

Salience of social identity. Social identity theory advances that social and personal identities are at odds. When one gains salience, the other loses salience (Turner, Hogg, Oakes, Reicher & Wetherell, 1987). A person is either an individual or a member of a group.

However, while most groups operate cleanly on this spectrum, it is possible to create groups that emphasize individual identity salience as a component of the group's identity (Postmes, Haslam, & Swaab, 2005). The inductive route to social identity formation from the model discussed earlier argues that an inductive route to formation rests on the contributions of individual members. As a result, under specific conditions individuals may join a group that grants them a great deal of freedom to express individual identity and even find that the group celebrates individual identity. Notably, the inductive group does not sidestep the antagonism of social and personal identity. Rather, it redefines what is salient in a given context and what that salience means for the group.

Self-categorization theory. Social identity theory raises the point that individuals must accept a group membership before the effects appear. The shift in mental processes from thinking about the self to thinking about the group that causes the activation of group behavioral patterns (Turner, 1982). This shift from the self to the group is depersonalization.

Depersonalization. Depersonalization refers to the specific point when an individual begins to refer to himself or herself as a social identity first, personal identity second (Turner et al., 1987). For example, John Doe is a member of the police. When on duty, he introduces himself as a police officer and is depersonalized. When off duty, he introduces himself as John Doe and is not depersonalized. Notably, this is an individual's decision to self-categorize a social identity over a personal one. Depersonalization reflects another concept, self-stereotyping.

Self-stereotyping. When individuals depersonalize themselves, they are self-stereotyping. This refers to moments where a social identity or membership causes individuals to engage in behavior typical of that social identity (Turner et al., 1987). Self-stereotyping changes individual's immediate norms and social values. Haslam, Reicher, and Platow (2011) give the example of a churchgoer who then attends a football game, "in church the person may be (and want to be) meek and mild; at the game he or she may be (and may want to be) rowdy and raucous" (p. 53). Depersonalization and self-stereotyping change how the individual relates to the world and how the world relates to the individual, they shift the perspective from the individual's identity to their salient group identity.

Still, neither of these processes answers why any specific action falls into the purview of one group or another. In context, neither answers why it is not normative for the churchgoer to act rowdy and raucous or the football fan to act meek and mild. Further, neither self-stereotyping nor depersonalization answers why a specific identity gains salience at any point over another.

Comparative and normative fit. Identities gain salience in two ways, comparative and normative fit. Normative fit deals with the content of the group member's actions. Group members must do what other members expect of them in context. The churchgoers who appear in football face paint sporting a foam finger is unlikely to activate any kind of depersonalization in themselves and other members of the group are unlikely to treat them as a group member.

Comparative fit deals with the principle of meta-contrast, which essentially states that groups find distinctions through differences (Haslam et al., 2011). Groups want to have little difference between members of a category and great differences between categories, in other words the football fans should seek to emphasize the intergroup differences between their team and another and seek to emphasize the intragroup unity of their own team. Comparative fit also informs the position that best defines the group or the prototype

Prototypes. The prototype is the shared understanding of the 'ideal' group member. Critically, the prototypical member is not the average member. Further, the prototypical member of a group changes depending on the relevant, salient, out-group (Turner et al., 1987). For example, Hopkins, Regan, and Abell (1997) demonstrate that the national identity of the Scottish changed in comparison to other national identities. A

prototypical member of a group depends on the stance of the out-group, and typically shifts further away from the out-group.

Further, within the social identity approach, prototypicality has implications for social desirability and influence. The higher an individual's prototypicality, the more favorable others tend to evaluate them in contexts where high prototypicality is desirable (Haslam et al., 2011).

Social Identity Formation and Salience

The social identity approach offers a means of examining norms through an important pair of models. The first of these is the social identity model of deindividuation effects (SIDE), which offers a unique means of forcing identity salience to the forefront (Reicher et al., 1995). Through use of deindividuation manipulations with expectations guided by SIDE, it is possible to observe long-term effects deriving from differences in norm formation.

The second model, the interactive model of social identity formation (IMSIF) offers a means of examining norm formation through the same lens as deindividuation, providing a unified theoretical basis for expectations regarding outcomes (Jans, Postmes, & Van der Zee, 2012). Further, and more importantly, IMSIF offers a coherent look at two kinds of groups, both of which draw interest specifically because they offer a means of bridging the gaps this paper previously highlighted in exploration of theories on norms.

Finally, IMSIF answers a critical gap within the social identity approach itself, giving the theories a means of examining groups that form in the much more decentralized fashion of the early theoretical approaches to the group. In sum, while

IMSIF maintains the understanding of social behavior elucidated by the social identity approach, it also offers insight into groups where members take central stage (Postmes, Haslam, & Swaab, 2005; Postmes, Spears et al., 2005). IMSIF cannot, however, narrow and control the parameters of group formation. In fact, it does almost the opposite, allowing for the combination of both formation styles. To limit the number of extraneous variables and exert control over the formation process, computer-mediated communication is introduced.

Computer-Mediated Communication

Computers introduce complications into the natural socialization process of groups that would suggest decreased opportunity for the natural formation of groups in both perspectives. Yet CMC also increases polarization, which indicates a shifting group prototype and, necessarily, the presence of a group (Prentice-Dunn & Rogers, 1980; Prentice-Dunn & Rogers, 1982; Prentice-Dunn & Rogers, 1989). In particular, the introduction and widespread commonality of anonymity in computer-mediated communication (CMC) represents a complication to the study of group behavior because of the way that it interacts with social identities. This section introduces some early model based approaches to CMC as well as the influential deindividuation theory before exploring contemporary research interests and introducing the social identity model of deindividuation effects (SIDE) as a means of exploring anonymity within the umbrella of the social identity approach.

Why computer-mediated communication? Before discussing the features of CMC, this section provides rationale for the use of CMC. Observation of the mechanics of group formation is difficult simply because the salience of group membership

constantly shifts. Even if a social identity is active, the specific social identity itself may change at a moment's notice. For example, if a group of friends gathers to play baseball they may adopt the social identity of their team. But in the event of an injury, a member who works as a doctor is likely to adopt that social identity at the expense of their team's identity. One method of ensuring that this does not occur is the use of a deindividuation manipulation, something that increases the salience of a particular social identity. This increased salience ensures that member's behavior and communication stems from their social identities.

This inquiry, because of the relative frequency and ease of creating reliable deindividuation manipulations in CMC (Lea & Spears, 1991; Reicher et al., 1995), concerns itself with online groups. In contrast, many offline methods of creating deindividuation suffer from being somewhat unreliable (Spears & Postmes, 2013), dangerous (Drury & Reicher, 2000), or so salient (Reicher, 1982; Reicher, 1984), they can have a confounding effect on the group's identity and communication. In sum, it is much more convenient to introduce deindividuation through CMC than any offline method.

Early models. Early work on CMC emanated from ideas of media richness (Daft & Lengel, 1986; Daft, Lengel & Trevino, 1987). Most researchers assumed that the reduced social cues available in the online space would have significant consequences for the resulting behaviors (Lea & Spears, 1991; Prentice-Dunn & Rogers, 1989). Two exemplars of the different approaches taken by social psychology and communication are the theory of electronic propinquity and the cuelessness model (Korzenny, 1978; Rutter, 1984).

The theory of electronic propinquity. Korzenny's (1978) theory of electronic propinquity explores how social proximity functions through mediated communication channels. Much like other communication researchers, Korzenny (1978) focused primarily on the act of communication itself, suggesting that users' adaptation to a channel would be the most powerful predictor of propinquity. While early testing of the theory did not support it (Korzenny & Bauer, 1981), later evidence suggests that this tenet, users' familiarity and skill with the channel, holds true for CMC groups (Walther & Bazarova, 2008).

The cuelessness model. Social psychologists also focused on media richness in CMC, particularly in the context of a lack of social cues. According to the cuelessness model, the availability and opportunities to express a social identity would decrease along CMC networks because these networks stripped users of the ability to imbue messages with as many social cues as face to face communication allowed (Rutter, 1984; Rutter 1987). Challenges to the cuelessness model (Lea & Spears, 1991) would eventually cause it to fall out of favor along with the idea that CMC necessitated reduced social proximity (Lea, O'Shea, Fung, & Spears, 1992; Sassenberg & Jones, 2012).

Deindividuation theory. One of the driving theoretical approaches to CMC was deindividuation theory, which argues that CMC should create a loss of identity (Festinger, Pepitone, & Newcomb, 1952). Early social identity work refuted deindividuation in offline settings (Reicher, 1982; 1984) but CMC reinvigorated the debate because it created outcomes extremely suggestive of deindividuation (Lea & Spears, 1991). In particular, the anonymity in CMC networks created a problem because the behavior of users often mirrored the expectations laid out by deindividuation theory

(Festinger, Pepitone, & Newcomb, 1952) and the consequences of deindividuation in the offline context (Zimbardo, 1971).

  The problem of anonymity. The preceding sections all outline challenges that CMC presents which researchers sought to address through use of theorizing and the creation of models. The most important, and enduring, of these challenges comes in the form of anonymity. Anonymity creates unique conditions that tie into each of the three ideas presented above; it reduces social cues, constricts media propinquity, and creates conditions that allow for deindividuation. Yet while research supports the finding that anonymity can increase the incidence of 'flaming' (an early term for aggressive and uninhibited behavior on CMC networks) (O'Sullivan, & Flanagin, 2003), it also supports the idea that anonymity can increase social proximity (Lea, Spears, & De Groot, 2001), cooperation (Lea, Spears, & Watt, 2007; Lea, Rogers, & Postmes, 2002), and prosocial behavior (Le Hénaff, Michinov, Le Bohec, & Delaval, 2015).

  Differences across disciplines. Part of the divide on anonymity comes from the division between communication and social psychology research agendas. As mentioned before, social psychologists tend to place far more emphasis on the psychological aspects of behavior while communication researchers place more emphasis on understanding communicative acts (Hornsey et al., 2008). In the case of anonymity, this leads to a slight division. Communication researchers are much more interested in the effects of anonymity on communication itself while social psychologists seek to understand anonymity's interaction with behavior and social cognition. Clearly, there is overlap in terms of behavioral effects and communication acts. The difference in this area of study, when and where those differences become salient, is typically located in the area of

identity. Social psychology often pairs identity considerations with anonymity while communication researchers take a deeper look at the consequences of anonymous communication and preferences of individuals. Of course, these differences are in many cases skin deep as researchers in both fields often grapple with the same issues.

Consequences of anonymity for social interaction. Generally, the study of social interaction and anonymity begins with the study of how anonymity affects communication patterns and norms. Communication researchers in this area are interested in social desirability (DeAndrea, Tom Tong, Liang, Levine, Walther, 2012), incivility (Santana, 2014; Rowe, 2015; Coe, Kenski, & Rains, 2014; Hmielowski, Hutchens, Cicchirillo, 2014), users' evaluation of one another's comments (Anderson, Brossard, Scheufele, Xenos, & Ladwig, 2013; Walther, DeAndrea, Kim, & Anthony 2010; Lee & Jang, 2010), disclosure (Snyder, 2004), and support systems (Campbell & Wright, 2002; Kang, 2017; Leonard & Toller, 2012). Beyond interaction, organizational communication researchers examine issues of identity (Rains & Scott, 2007), taxonomies of organizations (Scott, 2013), and organization's need for secrecy (Scott & Rains, 2005; Scott, 2013; Cruz, 2017).

Interdisciplinary efforts often involve computer scientists and collaboration across disciplinary lines looking at anonymous networks in terms of how desirable anonymity is over time (Stutzman, Gross, & Acquisti, 2013), the effect it has on the social norms of the network (Bernstein, Monroy-Hernández, Harry, André, Panovich, & Vargas, 2011), and how users create anonymized communication (Leavitt, 2015). Other interests include education in a variety of fields (Roselli & Brophy, 2006; Gallagher-Lepak, Reilly, & Killion, 2009), support systems (Lim & Guo, 2008), and news frames (Borah, 2013).

Social psychologists share many of the same research interests. For example, notable points of intersection are incivility (Moore, Nakano, Enomoto, & Suda, 2012; Rösner & Krämer, 2016), identity (Scott, Rains, & Haseki, 2011), and evaluation of others' messages (Christie & Dill, 2016). Interests relatively unique to social psychology include minority influence (McLeod, Baron, Marti, & Yoon, 1997), collective action (Postmes, 2007; Postmes & Brunsting, 2002), and power dynamics (Spears, Postmes, Lea, & Wolbert, 2002; Spears & Lea, 1994), particularly those related to gender (Tang & Fox, 2016; Alhabash, Hales, Baek, & Oh, 2014).

A great deal of the research within the social psychology field comes from the social identity model of deindividuation effects (SIDE). Much of this research is interdisciplinary, with a number of contributions from the communication field. These studies refine (Lee, 2004; Lee 2008; van der Land, Schouten, Feldberg, Huysman, & van der Hooff, 2015), empirically test (Kim, Kim, & Park, 2016; Chan, 2010), or broaden the operational context (Carr, Vitak, & McLaughlin, 2013; Uhrich, S. & Tombs, A. 2014; Yilmaz & Peña, 2014; Festl, Scharkow, & Quandt, 2015) of SIDE research.

Anonymity in this paper. Anonymity connects to SIDE intrinsically, if not explicitly, because the most common manipulation to produce a deindividuation manipulation is anonymity. Such is the use of anonymity in this paper. This paper utilizes the social identity approach as a framework for investigating the dual nature of groups. In order to determine the features of the group it is important to render the social identity of the group salient to the participants. As described by SIDE a cognitive deindividuation manipulation, operationalized as anonymity, will be sufficient to accomplish this goal. The reasons for this are explored below.

Overview of the Social Identity model of Deindividuation Effects

In a sense, SIDE is nothing more than a generalization of the social identity approach to a CMC setting. This is because the fundamental goal of SIDE is to explain the impact manipulations common to the CMC setting have on social identity. SIDE has large implications for the study of groups in a CMC setting as it explains the impact that manipulations sometimes inherent to CMC have on the way groups communicate by shifting the salience of social identity and the consequences of identity expression for members of the group (Postmes, Spears, Sakhel, & de Groot, 2001; Sassenburg & Postmes, 2002).

The most important implication is that the groups in a CMC setting often gain an increased salience of social identity without the presence of another group (Postmes, Spears, & Lea, 2002). What this means is that research on CMC groups does not need to invoke an out-group to demonstrate the importance of the group. Thus, studies involving CMC do not require the presence of the out-group for the in-group to demonstrate polarization and salient social identity tendencies.

Two routes to deindividuation. The social identity approach is a fundamental rejection of Allport's (1924) individually focused idea of group psychology. In other words, SIDE posits that the individual in a group is a different creature to the individual alone (Haslam et al., 2011). Deindividuation manipulations cause changes in identity salience by this mechanism. They either accentuate or minimize the differences between members of a category (Reicher et al., 1995). Minimization decreases distinctiveness when applied to members of the same category. In contrast, maximization decreases distinctiveness when applied to members of opposing categories. Deindividuation

manipulations, in turn, are nothing more than actions that maximize or minimize distinctions.

SIDE advances that deindividuation manipulations occur because of various factors that accentuate the salience of social identity in a CMC context while the salient social identity is the social identity of the crowd (Reicher et al., 1995; Postmes, Spears & Lea, 1998; Spears, & Lea, 1992; 1994). From a theoretical standpoint, this means that deindividuation is not a distinct concept. Instead, it is a specific kind of social identity experience. This experience occurs in two ways, cognitive or strategic.

The cognitive route to deindividuation. The cognitive route to deindividuation involves deindividuation manipulations that occur on the individual level. These manipulations bear a great deal of similarity to the previous theoretical approach to deindividuation, many of the manipulations that occur are the same from an operational standpoint with critical differences from a theoretical standpoint.

Cognitive deindividuation concerns itself with the means of an individual's representation. Cognitive deindividuation occurs when an individual is anonymous in a way that enhances the salience of social identity at the expense of personal identity salience (Spears & Postmes, 2013). What this means is that the opportunity to express, and availability of, personal identity decreases in favor of opportunities to express and availability of social identity.

Anonymity itself is unnecessary for this to occur (Spears & Postmes, 2013), however anonymity and reduced visual representation are the most common means of achieving cognitive deindividuation manipulations (Postmes & Spears, 1998). Depersonalization, while not identical to deindividuation, shares a great deal of similarity

with cognitive deindividuation specifically because cognitive deindividuation

manipulations often go hand in hand with depersonalizing mechanisms (Spears &

Postmes, 2013).

    The strategic route to deindividuation. Strategic deindividuation, in contrast to

cognitive, is not concerned with the expression and availability of identity to the

individual themselves but rather the expression and availability of that identity to

everyone else. This kind of deindividuation occurs when an individual has the

opportunity to express social identity that they otherwise would not be able to (Spears &

Postmes, 2013).

    Sometimes this occurs through solidarity, when deindividuation manipulations

bring disparate or powerless groups together by means of giving them social support

(Spears, Lea, Conelliussen, Postmes, & Ter Haar, 2002). Other times this occurs when

anonymity to a more powerful group renders the individual capable of expressing aspects

of a social identity without fear of reprisal (Postmes et al., 2001). Of course, both of

these also can occur in reverse, as members shed aspects of identity to fit in with a group

(Spears, Lea, Postmes, & Wolbert, 2011).

    The current research, however, is less concerned with the strategic route to

deindividuation. While the distinction between the two routes is important to draw for

context and a clear understanding of the phenomena involved, strategic deindividuation is

less common than cognitive in the context of social identity formation (Postmes, Spears

et al., 2005). Cognitive deindividuation, in contrast, is often a feature of many CMC

identity formation contexts because website designers can create sites with cognitive

deindividuation in mind (although that decision is usually not so explicitly theoretical)

(Ren, Kraut, & Kiesler, 2007; Ren, Harper, Drenner, Terveen, Kiesler, Riedl, & Kraut, 2012).

SIDE and social identity formation. SIDE itself has no implications for social identity formation. Without a social identity, no deindividuation manipulations are possible because deindividuation consists of a manipulation of the salience of social identity. If identity is in the process of formation, then obviously no social identity exists.

Once formed, however, the mechanism by which the group created the social identity does interact with SIDE. Deindividuation accentuates the features of the group. In other words, the prototypical behavior of the group becomes more pronounced. Members of a group, especially outside of a laboratory, may disagree on self-categorization, what constitutes prototypical, and the categorization of others (Spears & Postmes, 2013; Drury & Reicher, 2000; 2005).

The manner of that disagreement, however, depends in part on the character of the group. Some groups tolerate a great deal of dissent, while others prioritize unity. Of course, this often changes as circumstances change for the group. For a large and diverse group consensus may not emerge and active negotiation as well as disagreement can continue for an extended period. Existing work demonstrates this effect in crowds.

Reicher's work on social identity and crowd psychology. Deindividuation has the effect of accentuating the norms and bringing them to the forefront of behavior. With use, norms change. Further, these changes to the group have consequences on the context. Reicher's (1984) work on the St. Pauls race riot underscores exactly how drastically context shifts change norms. The St. Pauls riot occurred in 1980 as police

raided a café in St. Pauls, Bristol, England. The district was struggling under racial and economic tension at the time, and investigators generally attribute the cause of the riot to these factors.

Reicher points out that protestors only became rioters after police removed the prototypicality of the moderates. Once police uniformly regarded all protestors as dangerous and violent, the prototype shifted because the police's influence allowed them to achieve a strategic deindividuation manipulation (1984; 2001). The prototype shifted along with the social identity and the protestors became rioters. Notably, the identity did not disappear, the rioters created clear limits, with lines drawn on the edges of the riot through placement of physical objects and signs. Even when police came directly to these barriers, rioters did not engage until they passed through (Reicher, 1984; Reicher, 2001).

The above example along with Drury and Reicher's (2000; 2005) further work with crowds delineates a strategic route through the group's reactions to the actions of the out-group. This is often the case. However, cognitive deindividuation can have similar effects as groups lose the ability to express identity in contrast to the position of the group (Hancock & Merola, 2005; Ivory, Fox, Waddell, & Ivory, 2014).

Routes to Social Identity Formation and Deindividuation

Groups can reach the same social identity through different channels. Those different channels have a long-term effect on group psychology that becomes salient under conditions of deindividuation. As a result, deindividuation creates a means of determining how a group formed without observing formation.

Interactive model of social identity formation. The question of categorization is central to the creation of identity. For the formation of a social identity, it is critical that members agree on categorization of themselves and others within the social group. Turner (1982) proposed a deductive route to categorization where members engage in a deliberative process and examine the superordinate category characteristics to determine fit (Reicher, 2001).

For the unstructured crowd in a situation demanding a novel social identity, a deductive route can still occur. In this case, because of the unstructured nature of the group and the lack of established methods of deliberating on various aspects of identity, individuals infer a social identity from observation of prototypical group members (Reicher, 1982; Reicher, 2001). Notably, the concept of what is prototypical at that stage is largely unformed so this observation rests on the perceptions of crowd members.

Still, just because the social identity (and the accompanying set of social norms) is yet unformed does not mean it holds no influence, as Reicher (2001) notes "crowd members do not simply ask 'what is appropriate for us in this context?' but 'what is appropriate for us *as members of this category* in this context?'" (p. 15). At no point does the influence of the categorization, and by extension the social group, disappear.

But some crowds form around highly individual social identities. Strong leaders create social identities that can mirror of their own. Even Le Bon (1885) acknowledges this when he writes about the conductor, a singular member with almost total power over the mindless drone-like members of the crowd. Inductive formation is a distributed and grounded form of this idea. Instead of a singular conductor, every member of a group can exert influence on the overall social identity. In inductive cases, the social identity is

the sum of these individual efforts. In most group, the process of social identity

formation is both at once, a mixture of individual efforts and questions of categorical fit.

The question then, is to what extent inductive and deductive influences represent

a better picture of the social group. This is, of course, nothing more than the

disagreement over the proper approach to group behavior outlined previously on an

applied level. On one side are those who come from the work of Allport (1924), placing

the individual at the focus of the inquiry. On the other side are those who descended

from the ideas of Le Bon (1885) and Festinger (1954), arguing that individual in the

crowd creates a fundamentally different psychological state than the individual alone.

The interactive model of social identity formation is an attempt to reconcile these

perspectives through the lens of the social identity approach (Postmes, Haslam, & Swaab,

2005). The basic introduction to this model is above, but to recap it extends the same

arguments advanced by Turner (1982) and Reicher (2001). It points out that the

inductive and deductive routes to categorization also create inductive and deductive

routes to social identity formation (Turner, 1982; Reicher, 1982; Reicher, 2001; Postmes,

Haslam, & Swaab, 2005). Postmes, Haslam, and Swaab (2005) argue that both routes

exist in parallel. In short, groups can form around individual contributions and

superordinate associations, both are valid routes to creation of a group. These two routes

have important consequences for the group in the context of a deindividuation paradigm.

Consequences of inductive and deductive social identity formation.

Deindividuation studies repeatedly demonstrate that manipulations done after individuals

enter into a group accentuate category salience while those self-same manipulations done

before have the opposite effect (Reicher et al., 1995; Wang, 2007; Lee, 2004; Lee, & Jang, 2010; Tanis & Postmes, 2007; Villanova, Beria, Costa, & Koller, 2017). Notably, inductive and deductive groups are both groups, so while deindividuation increases some variables in the same fashion, it also accentuates the different compositions of these groups. Below, this paper explores why that occurs.

In a follow up to the social identity formation study, Postmes, Spears, Lee and Novak (2005) found that for inductively created social identities, depersonalization is not a source of social influence. The opposite is true for deductively created social identities, in these groups depersonalization is a source of social influence. Further work demonstrates the mechanism underlying this difference stems from the decision-making patterns of the groups involved. Deductively created identities tend to value the group while inductively created identities value the individuality of the members of the group. This occurs because inductive social identities encourage a degree of individuality within group members or salience of heterogeneity while deductive social identities encourage a degree of social agreement and unanimity amongst members or homogeneity (Postmes, Spears et al., 2005; Jans et al., 2012).

Deindividuation increases social identity salience. So post deindividuation, groups try to find a consensual interpretation of a social identity, one upon which all members agree. The heterogeneous group achieves this in ways that reflect the individuality of members while the homogenous group achieves this in ways that reflect the group's communal identity. Thus, post deindividuation manipulations, inductively

created identities produce a greater degree of heterogeneous social identity salience within a group. Deductively created identities produce a higher degree of homogenous social identity salience within a group (Postmes, Haslam, & Swaab, 2005).

Actual change in the social identity can occur because of deindividuation. While a group, especially a crowd, does not always have the chance to redo social identity formation in response to every new stimuli, aspects of a social identity do change depending on context (Postmes et al., 2000; Sassenberg & Postmes, 2002; Drury & Reicher, 2000). Further, social identity formation is ongoing and never ending.

Reicher (2001) points out in his critique of emergent norm theory exactly this, understanding identity depends on understanding context. As a result, individual members are always evaluating potential shifts or realignments to the identity in the context of the social group. As deindividuation accentuates the social identity, the result therefore is not merely accentuation of the social identity but accentuation of the homogeneity of the group itself as members converge on an identity (Jans, Leach, Garcia, & Postmes, 2015). For inductive groups, deindividuation then accentuates the heterogeneity of the group's identity as members still converge, but through a greater measure of disagreement and personal contributions (Postmes, Haslam, & Swaab, 2005).

The result, when examining the features of the social identity, is generally almost indistinguishable. Indeed, social identity salience in both cases can be identical as well. The critical difference rests in how each group reaches those positions. In other words, deindividuation increases what is already present. It brings to the forefront the primary nature of the group, deductive or inductive.

Self-Referential Discussion

But the inquiry is still too broad. Even the two routes, deductive and inductive, still encompass broad areas of social identity formation. Further, as Postmes, Haslam, and Swaab (2005) point out, groups usually use both routes simultaneously to determine identity. This inquiry is less concerned with establishing a deeper understanding of the theoretical social identity formation routes and more concerned with expanding an understanding of the processes groups use in live settings.

One such process is self-referential discussion. Sometimes referred to as "meta-discussion" this is any kind of discussion where the topic is the group itself. In the context of the social identity approach, self-referential discussion is simply a winnowed down version of social identity formation.

Lack of clarity for self-referential discussion as a route to social identity formation. But the first problem is not what occurs during self-referential discussion but rather how to classify self-referential discussion. It is unclear if self-referential discussion is deductive or inductive because the fit between self-referential discussion and either route depends on context.

As neither a deductive nor an inductive route to social identity formation. In many contexts, self-referential discussion is inductive, because the social identity does not come from an outside source or from association with a superordinate group. The group conducting self-referential discussion engages in a self-contained process of identity formation (Jans et al., 2012). In textbook fashion, this inductive route to social identity formation rests on the contributions of individual members (Postmes, Spears et

al., 2005) who explicitly demarcate personal opinions and positions that filter to the larger group. Further, members can outline positions that inherently support the heterogeneity of the group and drive the entire process further towards an inductive, individually based process (Haslam et al., 2011).

But during self-referential discussion members do not ignore the influence of the group nor do they escape it. They do not engage in the process without a consideration of the group. Members actively engage with the group and contributions become the property of the group and not the individual. To restate Reicher's (2001) point, the process becomes deductive when members ask, "what is appropriate for us *as members of this category* in this context?" (p. 15).

Further, the structure of the self-referential process directly matches with Turner's (1982) deductive route to categorization because it carries order, shape, and depends on deliberation concerned primarily with the general category identity. While categorization is not analogous to social identity creation, the two processes carry a great deal of overlap because arbitration of membership can constitute social identity creation or change (Reicher, 2001). Simply deciding who is or is not a member is often a deductive social identity creation process (Postmes, Haslam, & Swaab, 2005).

Self-referential discussion does not cleanly fall into either category. Depending on context, either assessment becomes appropriate. But in live contexts, members do not conduct the discussion entirely in reference to the group, nor do they conduct the discussion as a function of their individuality.

The problem of context. The previous section illustrates the difficulty of classifying self-referential discussion. Various studies classify self-referential discussion

into either route using some of the justifications listed above. Some adopt the inductive

argument (Smith et al., 2015; Moscovici, 1980; Smith & Postmes, 2011; van Zomeren,

Spears, Fischer & Leach, 2004) and others argue the opposite (Reicher & Hopkins, 2001;

Drury & Reicher, 2000, 2005; Swaab, Postmes, van Beest, & Spears, 2007).

This divide occurs primarily due to disagreements about relevant context.

Researchers often consider the presence of the out-group and the salient social identity an

indicator of a deductive discussion. Many argue the process is deductive when it begins

at the intergroup level, as the presence of another group prompts the discussion (Drury &

Reicher, 2000, 2005; Reicher, 2001). Therefore, category salience is high and members

must actively confront the out-group's interpretation of the in-group's social identity

(Swaab et al., 2007; Reicher, 1982).

In contrast, some adopt the inductive argument because when no salient out-group

appears the participants drive the process (Smith et al., 2015; Smith & Postmes, 2011).

Focusing on the intragroup communication and context often indicates that no salient

social identity drives the process, and as a result, the discussion is inductive. But this

divide is rather unsatisfactory because research repeatedly demonstrates through the

cognitive route to deindividuation that no intergroup impetus is required for discussion to

prompt a shift in social identity (Postmes et al., 2000; Postmes et al., 2001; Sassenberg &

Postmes, 2002), or to promote category salience (Reicher et al., 1995; Tanis & Postmes,

2007; Lea, Spears, & Watt, 2007).

This explanation essentially prioritizes the deductive context over the inductive

when both are present, as a result minimizing the influence of the individual in favor of

the group. The problem with this approach is that it does not cleanly follow other

findings. Research demonstrates that inductive group formation can occur through non-verbal means with limited interaction (Broekman, Gordjin, Koudenburg, & Postmes, 2018), or between clearly deductively associated individuals (Khan, Hopkins, Reicher, Tewari, Srinivasan, & Stevenson, 2016), suggesting even contexts where the formation of the group is completely deductive the resulting group can still be inductive. Ignoring the context that individuals bring into a group means a return to the idea that crowds dictate behavior unilaterally and that members cannot resist the overwhelming influence of the group (Reicher, 2001). As a result, for CMC groups where deindividuation is extremely common, it is critical to broaden the understanding of what contexts indicate inductive or deductive social identity formation.

But it is unclear that either of these answers is better than the other, or better than another answer altogether. Yet it is clear that self-referential discussion does not always cleanly fall into one category or another, always due to context. The issue, then, is how to distinguish between deductive or inductive contexts in situ. The resolution to this particular distinction, however, involves the use of CMC and SIDE. Breaking down the pieces that create self-referential discussion provides a means of addressing the lack of clarity regarding the relevant context.

Proposed resolution to the problem of context. Reviewing the divide outlined above, both inductive and deductive contexts stem from different viewpoints of the relevant context. As pointed out before, self-referential discussion could simultaneously consist of two parts, an inductive and a deductive. As a result, it is possible to assume the potential for inductive and deductive identity formation coexists in conversation. Broken down, one of these contexts is form, the other, content. Much as other scholars

previously explored the form and the content of norms (Hogg & Reid, 2006; Cialdini et al., 1990), self-referential discussion also contains form and content. Form being the terms, limits, and means of the discussion while content is the discussion itself.

The form of self-referential discussion exhibits deductive features. Members make judgments from the category and the superordinate association they share. The process begins (in the laboratory setting) through the impetus of the out-group, at the urging of the researchers. Participants then conduct a deductive process of discussion regarding their social identity. The content of the self-referential discussion exhibits inductive features. Members contribute individual positions and opinions in an attempt to resolve disputes and settle on a consensual social identity.

What this means is that the initial phase and form of self-referential discussion will be deductive while the content and process itself will be inductive. In sum, self-referential discussion is a deductively induced and guided process of inductive identity formation. In other words, members deduce, from information given by researchers and context, the way they will go about inductively creating the social identity for their social group. This paper is not the first to argue the same conclusion regarding the division of form and content. Koudenburg, Postmes, and Gordijn, (2017) make a similar argument prioritizing a slightly different use of form, that of conversational features such as non-verbal cues.

The use of CMC does automatically standardize the form of the discussion to an extent, nominally creating deductive conditions. Yet as Koudenburg, Postmes, and Gordijn (2017) point out individuals generally only notice *violations* on the implicit level. As a result, CMC alone does not provide a deductive pathway. In other words,

standardizing the means of interaction does not prevent the formation of inductive groups (Koudenburg, Postmes, Gordijn, & Van Mourik Brokeman, 2015). Thus, providing both a deductive and inductive context on the explicit level provides an even playing field.

Context in live groups. As Postmes, Spears, Lee, and Novak (2005) point out, "it is unlikely that in any group encountered in real life will social identity be entirely induced or deduced," (p. 761). As a result, it is inherently a difficult proposition to try to generalize the results of studies invoking only one kind of identity formation process to real world groups. This means that the casual observer cannot make easy use of theoretical models of group behavior as a means of understanding live groups without accounting for this limitation. Or, to return to the baseball example, it is impossible to clearly demarcate the nature of the team without prioritizing the analysis of either inductive or deductive levels, e.g. looking at the players or the club's culture.

The goal of this research is to help resolve this issue, guiding the observer on which context to prioritize, by providing insight into the nature of groups in a limited context when both deductive and inductive influences are even and when social identity salience is high. In other words, if the group has the opportunity to form in both directions and equal impetus to do so, which influence wins out? In situ, a group of friends gathers at a local park for a pick-up game of baseball and appoints co-captains. One co-captain supports naming his side the Yankees and emulating their style while another co-captain tries to build the team around the players' traits, assuming neither captain exhibits significantly greater social influence, in which direction does the team develop?

The State of the Problem

The underlying causes of group interaction effects generally are understood poorly compared to the understanding of outcomes associated with group interactions (Meleady, Hopthrow, & Crisp, 2013). In particular, group discussion as a component of the social identity formation process remains an understudied aspect of group psychology (Wittenbaum & Moreland, 2008; Hogg & Reid, 2006). As well, the ever-increasing importance and abundance of groups in the online sphere only highlights questions about the mechanisms underlying group communication. In this dichotomy, discussion is among the more prevalent forms of interaction and perhaps the most apt when looking to develop direct comparisons to groups outside the laboratory.

This paper attempts to resolve one such question. Self-referential discussion is a critical piece of social identity formation not just as a group forms but as a group continues to negotiate and redefine itself. It appears in crowds (Drury & Reicher, 2000; 2005), in questions of leadership (Haslam et al., 2011), in disagreements over category fit (Reicher, 2001), in both inductive and deductive social identity formation efforts (Postmes, Haslam, & Swaab, 2005; Hogg & Reid, 2006), and throughout the group's lifecycle (Meleady et al., 2013). In sum, discussion plays an important role in many group processes.

But precisely because self-referential discussion is so broad, it is so difficult to define. When attempting to do so, context plays a crucial and determinant role, after all "there is no generic group effect" (Reicher et al., 1995, p. 173). As discussed above, relevant context stems from two primary sources: form and content.

The question, then, is which portion exerts greater influence, content or form. SIDE offers a means of making this determination because it accentuates the

consequences of the route. For inductive groups it accentuates heterogeneity. For deductive groups it accentuates homogeneity salience (Postmes, Haslam, & Swaab, 2005; Postmes, Spears et al., 2005; Jans et al., 2012; Swaab et al., 2007). Therefore, deindividuation presents a viable means of sifting for dominant contextual influences in live discussion.

This leads to the question: To what extent does social identity formation through self-referential discussion lead to an increase in the salience of a heterogeneous or homogeneous social identity for CMC groups that experience deindividuation compared to those that do not?

Research Questions

The purpose of this experiment is to determine relevant contexts for IMSIF based groups in situ. The means of accomplishing that is to utilize a method that allows for the combination of two different contexts, form and content, in the same group, then to utilize a deindividuation manipulation to examine the differences in the salient social identity as a marker of the dominant, or more influential, context.

Guiding Question: To what extent does social identity formation through self-referential discussion lead to an increase in the salience of a heterogeneous or homogeneous social identity for CMC groups that experience deindividuation compared to those that do not?

RQ1: Does social identity formation occur through self-referential discussion?

RQ2: Does social identity formation through self-referential discussion lead to a salient heterogeneous social identity?

RQ3: Does social identity formation through self-referential discussion lead to a salient homogeneous social identity?

RQ4: Does deindividuation change the salience of social identity for CMC groups formed using self-referential discussion?

Method

Participants

Participants were recruited through a convenience and snowball sample of students at a mid-sized private university located in the Midwest. Sampling involved sixty participants (n = 60) divided evenly between deindividuation (n = 30) and control (n = 30) conditions. Each condition included an equal number of groups (n = 10). Groups consisted of three randomly assigned participants each (n = 3). Members did not have prior history with the group or with other members. As a result of the snowball sample and random assignment it was possible for members with prior history of one another to participate in the same group, however this did not occur. No group exceeded an hour from the start of the experiment to the conclusion. No group completed the experiment in under 15 minutes. Groups in both conditions took an average of 28 minutes to complete the experiment including the closing survey. Participants ranged in age from 18 to 23.

Procedures

Through a Facebook post (Appendix A), participants were invited to participate in the study. Participants were free to invite others to complete the intake survey and participate in the study as well so long as they fit the study criteria.

Participants completed a short quiz on color preferences (Appendix B). This is a sorting mechanism similar to those used in previous group research (Haslam et al., 2011). Ostensibly, these preferences form the basis for subsequent sorting into groups. In reality, group assignment was random. Groups consisted of three members each.

Control. Participants in the control group then received a short informational sheet informing them of the purpose of the study (Appendix C). Beyond introducing the participants to the experiment, the content of this message accomplished two things. First, it primed the form of the discussion as deductive. Second, it primed the content of the discussion as inductive.

Then participants conducted a self-referential discussion using IRC (Internet Relay Chat). Finally, members participated in a stag hunt game (Appendix D). The game provided a continued method of interaction after group formation, so it was unimportant who won and as a result winners were not recorded.

After completion of the game, members took a survey (Appendix G). The survey consisted of fifteen questions, although only Questions 1, 6, 8, and 11 were scored. These questions came from Leach van Zomeren, Zebel, Vliek, Pennekamp, Doosje, Ouwerkerk, and Spears' (2008) Hierarchical Model of In-Group Identification. Other questions (unscored) were adapted from the Revised Group Cohesiveness Scale and Group Attitude Scale (Treadwell, Lavertue, Kumar, & Veeraraghavan, 2001; Evans & Jarvis, 1986) to increase the realism of the survey and obfuscate the relevant questions from participants.

Question 14 served as a manipulation check. It came from the single item measure of Social Identification (SISI) utilized in SIDE and social identity research

(Postmes, Haslam, & Jens, 2013). The check served to ensure that all groups developed a salient social identity during the experiment and was used for both control and deindividuation conditions.

Deindividuation Condition. The second condition introduced a deindividuation manipulation. This manipulation caused a slight variation in procedures. Groups took the same color survey (Appendix A) and were still assigned randomly. However, they did receive a slightly different information sheet (Appendix E). This adjustment reflected the different method of playing the game that participants in the deindividuation condition experienced.

Unlike the control group, the deindividuation condition used an anonymous computer network with fake names (e.g. Player A) instead of real names. They received a different instruction sheet to reflect this change (Appendix F). As with the control group, the purpose of the game was to sustain interaction, this time through a medium that causes cognitive deindividuation, so winners were not recorded.

At the conclusion of the game, members completed the same survey as control (Appendix G). This survey was identically assessed; only four of the questions (1, 6, 8, and 11), were scored and question 14 was a manipulation check.

Measures

This section covers several key definitions used in this paper as well as features of the main variables and conditions of the data itself. It defines these constructs and then provides statistical information about measures used in the experiment.

Defining Key Constructs. For a minimal group paradigm, norm creation and social identity creation functionally constitute the same process because no previous

incarnations of either exist. As the group creates norms for itself, they define the meaning of the social identity.

Social identification, as per the social identity theory definition, referred to the extent that a person adopts and identifies with a particular social identity in the form of a group membership (Turner et al., 1987).

Self-definition referred to the classic social identity understanding advanced by Leach, van Zomeren, Zebel, Vliek, Pennekamp, Doosje, Ouwerkerk, and Spears (2008) as a measure of both individual self-stereotyping and in-group homogeneity. Self-definition is a reliable measure of the salience of homogeneity at both the individual and group level due to this multicomponent assessment. That allowed it to serve as an effective means of measurement in this experiment.

Independent and Dependent Variables. The independent variable was a cognitive deindividuation manipulation. The dependent variable was participants' scores on the Likert scale assessment of self-definition taken from Leach van Zomeren, Zebel, Vliek, Pennekamp, Doosje, Ouwerkerk, and Spears' (2008) Hierarchical Model of In-Group Identification. The dependent variable in this experiment was mixed. In other words, it varied at both the individual and between groups level. The different groups were not expected to demonstrate the same average nor were individuals within groups expected to demonstrate the same scores for measures of homogeneity salience. Additionally, group members were indistinguishable and sampled from the same population. As a result, group members were treated as replications of one another between and within the groups (Kashy & Hagiwara, 2012).

Non-independence. Finally, as with a great deal of small group research, it was possible that the scores would exhibit non-independence because one individual's assessment of a perceptual category is potentially a predictor of other group member's assessment of a perceptual category (Kashy & Hagiwara, 2012; Kashy & Donnellan, 2012). As members of these groups were indistinguishable, a modified actor-partner interaction model (APIM) calculation adapted for groups was appropriate to remove any non-independence from the data.

As a result, the first step upon obtaining data was to run the modified interclass correlation (ICC) assessment used with an APIM. While this assumption of non-independence for a data set developed around a perceptual category did carry some risk of a type II error when running the ICC, the consequences of a type I error are a decreased validity in results (Grawitch & Munz, 2004) and were severe enough to justify the possibility of a type II error.

The ICC was run for each group in the experiment. The significance level for this test was relatively liberal, as suggested in Grawitch and Munz (2004), at 0.1 (in this specific test, higher values indicated greater significance, had the ICC exceeded 0.1 it would have been significant). However, the ICC did not return a significant mark for the majority of the groups. In other words, variance within groups and variance between groups did not differ by a significant amount for most groups in the dataset and as such, no correction was performed on the data set. Comparison between control and deindividuation groups was then accomplished by way of a between samples t-test.

Survey Questions. The main set of questions tested participant's perception of in-group homogeneity salience and individual self-stereotyping. The primary difference

between these two pairs of questions was the phrasing, the first asked about the participant while the second asked about the group as a whole (e.g. I am similar to the average person in my group vs. people in my group are very similar to each other). As no outgroup existed for the experiment, the survey questions did not distinguish between in and out groups. Instead, they reference the group participants joined for the duration of the experiment as suggested in Leach, van Zomeren, Zebel, Vliek, Pennekamp, Doosje, Ouwerkerk, and Spears (2008).

Although two pairs of questions were used in the survey, both pairs come from the same scale and so are often used in tandem. These two pairs of questions utilized together served as a means of measuring self-definition, as defined above. Notably, their coefficient as a set exceeded the 0.7 level suggested in Leach, van Zomeren, Zebel, Vliek, Pennekamp, Doosje, Ouwerkerk, and Spears (2008) for the entire data set (α = .815), the control group (α = .833) and the deindividuation condition (α = .714).

Individual Self-Stereotyping. These two questions measured the extent of participants self-stereotyping. They measured how similar participants felt themselves to be with the rest of the group. Questions were rated on a 1-7 point Likert scale. Descriptive statistics for the individual self-stereotyping questions are on Tables 1 (control) and 2 (deindividuation condition). Prior studies indicate 0.7 as an acceptable minimum alpha coefficient for these two questions (Leach van Zomeren, Zebel, Vliek, Pennekamp, Doosje, Ouwerkerk, & Spears, 2008). In this study, the alpha was much higher for the whole data set (α = .843) and for the control group (α = .879) but was not as high for the deindividuation condition (α = .737) although it did still succeed the check.

Table 1

Individual Self-Stereotyping Control Group Descriptive Statistics

Questions	N	Minimum	Maximum	Mean	Std. Deviation
I have a lot in common with the average person in my group.	30	2	7	5.30	1.236
I am similar to the average person in my group.	30	2	7	5.47	1.167

Table 2

Individual Self-Stereotyping Deindividuation Condition Descriptive Statistics

Questions	N	Minimum	Maximum	Mean	Std. Deviation
I have a lot in common with the average person in my group.	30	3	7	6.33	.994
I am similar to the average person in my group.	30	4	7	6.07	.907

In-Group Homogeneity. These two questions measured the extent of participant's perceived level of similarity between all group members. They measured how similar participants felt the group members a whole were to one another. Questions were rated on a 1 to 7 point Likert scale. Descriptive statistics for the individual self-stereotyping questions are on Tables 3 (control) and 4 (deindividuation condition). Prior

studies indicate 0.7 as an acceptable alpha coefficient for these two questions (Leach van

Zomeren, Zebel, Vliek, Pennekamp, Doosje, Ouwerkerk, & Spears, 2008), in this study

the coefficient exceeded that amount across the entire data set (α = .878) the

deindividuation condition (α = .835) and the control group (α = .895).

Table 3
In-Group Homogeneity Control Group Descriptive Statistics

Questions	N	Minimum	Maximum	Mean	Std. Deviation
In my group people have a lot in common with each other.	30	1	7	5.23	1.501
People in my group are very similar to each other.	30	1	7	5.00	1.414

Table 4
In-Group Homogeneity Deindividuation Condition Descriptive Statistics

Questions	N	Minimum	Maximum	Mean	Std. Deviation
In my group people have a lot in common with each other.	30	1	7	5.97	1.497
People in my group are very similar to each other.	30	1	7	5.80	1.297

Manipulation Check. The question for the manipulation check came from a different scale than the other questions, however as the Hierarchical Model of In-Group Identification demonstrates inter-scale reliability with a number of other scales (Leach van Zomeren, Zebel, Vliek, Pennekamp, Doosje, Ouwerkerk, & Spears, 2008), this study also tested for similar reliability between the first four questions and the manipulation check. The test demonstrated strong reliability between the manipulation check and the rest of the questions for the entire dataset ($\alpha = .869$) the control group ($\alpha = .871$) and the deindividuation condition ($\alpha = .825$).

The manipulation check was successful. As the Single Item measure of Social Identification (SISI) has a high degree of reliability (Postmes, Haslam, & Jens, 2013), the bar for passing the manipulation check was 5. All conditions were expected to pass the manipulation check, and all conditions exceeded 5 (see Table 5), although none exceeded 6. The difference between the control and the deindividuation condition was not significant at the $p < .05$ level ($p < .066$).

Table 5
Single Item Social Identity Measure Descriptive Statistics

Questions	N	Minimum	Maximum	Mean	Std. Deviation
I identify with my group (Control).	30	1	7	5.23	1.478
I identify with my group (Deindividuation condition).	30	1	7	5.93	1.413
I identify with my group (Both).	60	1	7	5.58	1.476

Results

Salience of Heterogeneous and Homogenous Identity

The primary test of the experiment related to the salience of identity, specifically the kind of salient identity. These two types of identity were heterogeneous and homogenous. As the names suggest, heterogeneous identity depended on awareness of differences while homogenous identity depended on awareness of similarities. This measure applied both to participant's perceptions of self and to perceptions of others.

Descriptive Statistics. Scores on the identity questions were on a 1 to 7 point Likert scale with values ranging from 1-7 observed on all questions. To test the saliency of each kind of identity, the survey questions were averaged to create a new numeric scale variable. The averaged scores ranged from 2-7 for the entire dataset. Lower scores indicated a salient heterogeneous identity while higher scores indicated a salient homogenous identity. Table 6 contains a breakdown of descriptive statistics for the control and deindividuation groups.

Table 6
Averaged Scores Descriptive Statistics

Averages	N	Minimum	Maximum	Mean	Std. Deviation
Averaged Scores (Deindividuation)	30	3.75	7.00	6.041	0.879
Averaged Scores (Control)	30	2.00	7.00	5.25	1.091

Averaged Scores (Both)	60	2.00	7.00	5.646	1.060

Does social identity formation occur through self-referential discussion?
Research question 1 asked if social identity formation could occur through self-referential discussion. In other words, would the manipulation check demonstrate a salient social identity for each group? Per Table 5's measure of both conditions, a salient identity formed in both conditions (control M. = 5.23, SD = 1.478; deindividuation M. = 5.93, SD = 1.413). Social identity formation did occur through self-referential discussion.

Does social identity formation through self-referential discussion lead to a salient heterogeneous social identity? Research question 2 asked if self-referential discussion would lead to a salient heterogeneous social identity. Heterogeneous social identity is characterized by the salience of differences, group members are keenly aware of what different attributes each member brings to the group. All four assessed questions tested members' perception of heterogeneity and the average of those questions assessed overall perception of heterogeneity. A low average score indicated a salient heterogeneous social identity. Group members averaged 5.646 (SD = 1.060) across all questions per Table 6. Therefore, social identity formation through self-referential discussion did not lead to a salient heterogeneous social identity.

Does social identity formation through self-referential discussion lead to a salient homogeneous social identity? Research question 3 asked if self-referential discussion would lead to a salient homogeneous social identity. Awareness of

similarities characterizes homogeneous social identity. All four assessed questions tested member's perception of homogeneity and the average of those questions assessed overall perception of homogeneity. A high average score indicated a salient homogeneous social identity. Group members averaged 6.041 (SD = 0.879) across all questions per Table 6. As a result, social identity formation through self-referential discussion did lead to a salient homogeneous social identity.

Does deindividuation change the salience of social identity for CMC groups formed using self-referential discussion? The results of a between samples t-test demonstrated that there was a significant difference (p < .003) between the control and deindividuation condition. Deindividuation averaged 6.041 with a standard deviation of 0.879. Because the questions all measure the same variable, breaking down averages per each question was not done. Control averaged 5.25 with a standard deviation of 1.091. Deindividuation, per these results, led to an increase of 0.791. The increase is not large, but clearly present. This indicates that social identity formation through self-referential discussion led to an increase in the salience of a homogeneous social identity for CMC groups that experienced deindividuation compared to those that did not.

Discussion

This section will cover the implications of the experiment in the context of the two theoretical approaches used throughout the literature review. It begins with a discussion of the results, placing them in the context of the two approaches discussed in the literature review. Then it discusses specific implications regarding the social identity approach and the models utilized in structuring the paper before highlighting some

general considerations of the results as a whole. The discussion section concludes with an overview of the limitations of the study.

Does social identity formation occur through self-referential discussion?

Results indicated that social identity did form through self-referential discussion. Group formation after a clear categorization occurred per social identity theory (Tajfel & Turner, 1979). This was consistent with the overwhelming majority of social identity research (see Hogg & Tindale, 2008; Haslam et al., 2011) as well as group research in general (see Frey et al., 1999). However, the finding of note was the fact that unclear categorization could prompt social identity formation as well. Most of the research reviewed in the examples mentioned relies on clearly defined social identities for experimentation purposes. When participants have the opportunity to define their own social identity and the features of that social identity, the reliability of social identity theory becomes much less clear.

A growing body of literature stemming from the Interactive Model of Social Identity Formation (IMSIF) explores this subject (Koudenburg, Postmes, Gordjin, & Van Mourik Brokeman, 2015; Koudenburg, Postmes, & Gordjin, 2017; Broekman, Gordjin, Koudenburg, & Postmes, 2018) with the understanding that the social identity approach alone is not the ultimate predictor of group behavior. Generally these studies find that identity formation is not only possible but quite common even in situations where identity is not explicitly communicated, and in the case of one study involving no verbal communication between participants (Koudenburg, Postmes, & Gordjin, 2017) possible with only tenuous affiliations like location and actions. The present study examined

CMC groups exclusively, demonstrating that the findings of these studies extend into the computer-mediated space as well as the offline space.

Implications for Groups as a Collection of Interpersonal Relationships. The process of group formation that occurred also invoked the other group theories discussed in the literature review. This paper draws a clear parallel between the processes described in symbolic convergence theory (Bormann, 1972) and the processes of identity consolidation and formation that developed in the small groups studied. Members entered into the groups with different ideas of what the social identity should entail and then engaged in the process of developing a mutual interpretation. Upon the completion of that process, a gestalt social identity emerged that did not exist prior to social engagement.

In general, the high awareness members exhibited of one another's opinions and attitudes indicated the influence of theories of social learning. Alongside symbolic convergence theory, social comparison theory (Festinger, 1954) discusses how this process can result in the creation of a group (Barsade, 2002). Group members commonly engaged in a process of not only negotiation of the shared fantasy, but also consideration of how other members acted and interpreted the potential rules to create a collective social identity, adding additional weight to the utility of social comparison theory as a method of examining group formation. While members did not have the opportunity to seek out others with similar views, they modeled the group on shared traits through observation, a process described in social comparison theory.

Implications for Gestalt Groups. From a gestalt group perspective, the research design mirrored the norming-forming-storming-performing model of group development

(Tuckman, 1965). While no formal interaction analysis occurred, it was telling that most group members engaged in the process of creating norms prior to interacting with one another. It was common for the first messages from members to involve the suggestion of a norm as opposed to the discussion of the group's identity or discussion of the upcoming game. Some groups continued to experience the rest of the stages as they worked through the game while others took a much less structured approach and instead engaged in a process more akin to the unordered tracks of the multiple sequences model. What was evident, however, was that groups began with the norming-forming stages before branching out into different pathways.

Groups also demonstrated clear progression through the tracks described in the multiple sequences model (Poole, 1983) as they collectively worked through the task of each round in the game and then encountered a breakpoint after tallying scores at the end of each round. Members confronted the decisions they made, in some cases cooperation and in others betrayals, and revised how they intended to approach the next round of the game. From a theoretical perspective, the clear adherence to aspects of both the multiple sequences (Poole, 1983) and Tuckman's (1965) models demonstrated that self-referential discussion groups shared features with more commonly studied counterparts in alternate contexts and formation conditions.

In sum, social identity formation not only occurred, it brought forth a variety of behaviors from the groups that carried distinct features of both deductive and inductive groups. Further, formation generated a process of identity creation similar to the shared fantasy described in symbolic convergence theory (Bormann, 1972), prompted progression through stages of group development phase models, and upheld the finding

that group formation occurs even with unclear social identities (Postmes, Haslam, & Swaab, 2005) while extending this research into the CMC context.

Does social identity formation through self-referential discussion lead to a salient heterogeneous social identity?

Results indicated that self-referential discussion did not lead to a salient heterogeneous social identity. The design of the experiment (as well as theoretical boundaries) precluded the simultaneous salience of heterogeneous and homogeneous identity. It was expected then, that either research question 2 or 3 must be negative.

Heterogeneous social identity reflects the approach of groups as a collection of interpersonal relationships. The focus remains on the individual both from a salient identity standpoint and as the focal point of study. However, for most of the interpersonal theories the creation and production of an overarching group identity is not a metaphorical crossing of the Rubicon into gestalt territory. Instead, and what the results here mirror, is the acknowledgement and reaffirmation that groups exist as interpersonal relationships still give rise to a group and correspondingly markers of gestalt interaction alongside personal interaction. Postmes, Haslam, and Swaab (2005) make this point, stating that most groups involve some degree of both homogeneous and heterogeneous identity markers.

Implications for Groups as a Collection of Interpersonal Relationships. Tellingly, groups did retain the influence of inductive formation. Many of the groups that took a longer time to finish the experiment did so not because they were inefficient communicators but because they temporarily set aside the task to get to know one another

better. This carries the hallmarks of relational or expressive groups and the social interactions they foster (Keyton, 2006). Further, as group members followed the prompt to bring past experiences into the rule creation process (per Appendixes B and C) they were capable of invoking the various theories of social influence. Participants used the weapons of influence (Cialdini, 2016) to argue for or against a rule and discussed attitudes of friends and acquaintances outside the group in the vein of social impact theory (Latané, 1981). Throughout the experiment, discussion reflected the result of the survey. Simply, the presence of a heterogeneous identity remained even as it took on less importance than the homogenous identity. Ultimately, interpersonal interactions outside the gestalt could and did occur within the groups.

Does social identity formation through self-referential discussion lead to a salient homogeneous social identity?

Results indicated that self-referential discussion led to a salient homogeneous social identity. As mentioned above, either research question two or three, both on the subject of identity salience, were expected to have a negative answer. It was not, however, a given that the other would have a positive answer. The resulting positive answer indicated that a distinctly homogeneous social identity trend emerged among the sample.

Implications for Groups as a Collection of Interpersonal Relationships. Homogeneous identity indicated strong support for theories of social learning. While symbolic convergence theory had the most impact on group formation, the process of social comparison suggests that members would develop a relatively homogeneous

concept of the group simply by comparing themselves to one another over time. This result indicates that such a process was likely to have occurred in the groups during the experiment because social comparison results in a high degree of awareness of member's similarities.

It is less of a clear indication that optimal distinctiveness was a feature of the groups, however, as members had no outgroup to attempt to compare themselves against. Notably though, members did invoke the specter of possible outgroups during discussion. Suggested rules often accompanied stories of what bad group members did in the past. The prompt indicated that members should bring forth personal experiences, but did not specify that those experiences needed to be negative. Still, members who did bring up experiences frequently followed them with rules designed to prevent something similar from occurring. While outside the scope of the experiment, it is likely that this involved the processes described in optimal distinctiveness theory as members sought to distinguish themselves from these negative examples.

Perhaps the most compelling piece of evidence in favor of optimal distinctiveness' role is the simple fact that groups did not average an overwhelming degree of similarity. Optimal distinctiveness posits that members will seek to find an optimal level of difference from others, not so much that they belong to an outgroup but not so little that they are lost in the crowd (Brewer, 1991). These results indicated that just that occurred as members found a place of homogenous identity that helped them become part of the in-group while retaining a level of autonomy and identity separate from the gestalt.

Implications for Gestalt Groups. These results indicated that a general predisposition toward gestalt analysis given general questions regarding group behavior is likely to be more useful than an interpersonal preference. While it is possible to interpret the same results through the lens of a multitude of theories and theoretical approaches, when looking to provide the most accurate view of the group theories that lean toward the gestalt level of analysis will provide more information. The clear caveat here is that depending on the objective of a study and the manipulation this may not be true.

The Social Identity Approach In Situ. However, it is true that homogeneity salience grants insight regarding the best method of examining groups in situ. As the complexity of group formation increases, the applicability of gestalt methods of analysis rises as well. The results also demonstrated that this is not a function exclusive to large groups either. Not only was the formation mechanism notably more open-ended than many other studies on small groups (see Forsyth, 2000; Forsyth & Burnette, 2005; Laughlin, 2012), the groups in the experiment gravitated toward homogenous identity. This indicates that formation through self-referential discussion, a process closer to the complexities of real-world group creation than the comparatively simple process of categorization, still lends itself well to gestalt group theories like those of the social identity approach. This is consistent with prior findings on real-world identities using the social identity approach (Reicher, 1984; Spears & Postmes, 2013; Drury & Reicher, 2005).

Ultimately, group members gravitated toward similarities rather than differences. The perception of homogenous social identity indicates that when a clear social identity

exists, it is likely to serve as the most effective measure of any individual group member's attitudes. In social identity terms, self-stereotyping is a particularly strong force and the development of a prototypical identity may be the most important identifying feature of the group.

Does deindividuation change the salience of social identity for CMC groups formed using self-referential discussion?

The results demonstrated a clear change in the salience of social identity between the CMC groups because of deindividuation. Deindividuation led to an increase of 0.791 in averaged scores for participants.

Implications for Groups as a Collection of Interpersonal Relationships. The relatively small degree of change is notable from a relational group perspective. The game participants played encourages some level of social conflict and unanimity among group members. They had the option to cooperate with others or attempt to win the game by themselves through defection from group tasks. Homogenous groups encourage member unanimity (Jans et al., 2012) and while it is difficult to make a distinct comparison without another experiment the small size of the shift prompts questions regarding the interpersonal dynamics within the groups themselves. It is highly likely that the groups did not experience a larger shift because the game encouraged a large degree of interpersonal conflict and discussion. This suggests that even groups designed in laboratory settings for the express purpose of analysis using gestalt theories can benefit from the application of theories from the interpersonal lens. A complementary approach is likely the most useful approach.

This mirrors the typical approach taken by researchers looking to use uncertainty reduction for the study of groups (Hogg & Tindale, 2008). Uncertainty reduction studies present a unique opportunity to look at the effects of mixing theories for the purposes of studying highly specific phenomena from multiple angles. While the focus of this paper is not uncertainty reduction theory in particular, it does present a blueprint of successful integration of theoretical approaches to examine in the future.

Implications for Gestalt Groups. No matter the size of the shift, the fact remains that the increase in homogeneity salience did occur. Ultimately, the presence of a change in identity salience alone indicates the utility of gestalt approaches. If a change occurs between groups then analysis at the group level bent toward identifying and observing that change is simply more effective than most interpersonal-centric counterparts are because it will capture the essence of that change.   The addition of the direction, an increase, lends validity and credence to the social identity approach as well as both of the two models utilized in the paper, SIDE and IMSIF.

The social identity model of deindividuation effects. The results were consistent with SIDE. Deindividuation produced a shift in the salience of social identity, supporting the main tenet of the model. This was evident by the presence of a clear, significant, and directional difference between the control and deindividuation conditions.

Although not statistically significant, deindividuation also had a couple of secondary effects consistent with SIDE as well. Deindividuation produced an increase in the awareness of a social identity, evidenced by the results of the manipulation check. Deindividuation also produced a smaller standard deviation for the deindividuation

condition compared to the control. This smaller standard deviation indicated a tighter distribution of scores, consistent with a slightly more consolidated social identity.

Further, the cognitive deindividuation manipulation was a success. Anonymity successfully served as the mechanism to enable deindividuation throughout the experiment. The ability to produce deindividuation without the presence of an outgroup was also notable as the creation of novel groups without predefined identity traits in the experiment meant that any kind of strategic deindividuation manipulation was simply not possible. It was impossible to invoke an outgroup when the in-group was unclearly defined prior to the experiment. As a result, it was clear that anonymity alone succeeded as a cognitive deindividuation manipulation and that cognitive manipulations alone were responsible for the results of the experiment.

The clearest implication of this result is that deindividuation was a functional manipulation as described in SIDE and not classic deindividuation theory. The increase in identity salience confirmed the widespread finding that classic deindividuation theory is incorrect (Villanova et al., 2017) and that deindividuation accentuates the salience of group features already present (Tanis & Postmes, 2007; Wang, 2007). It also reinforces the validity of SIDE for the same reason (Reicher et al., 1995).

Interactive model of social identity formation. The results were consistent with IMSIF as well. Both control and deindividuation conditions were capable of producing groups with a social identity, per the manipulation check. Additionally, every group passed the manipulation check regardless of the saliency of either heterogeneous or homogenous social identity, consistent with the prediction that either formation style could result in the creation of a group identity. Generally, interaction provided the basis

of strong group formation even when members were aware of intragroup differences. Further, gestalt group formation occurred alongside the expected minimization of intragroup differences and accompanying maximization of intragroup similarities.

This experiment also demonstrated IMSIFs assertion that no group is entirely either deductive or inductive (Postmes, Haslam, & Swaab, 2005). Groups differed on the extent of perceived identity homogeneity, and notably deindividuation did not push the average score above the low six on the Likert scale. The most compelling piece of evidence in support of this position however, was the size of the change in identity salience. The change was not large, indicating that deindividuation was unable to subsume entirely the heterogeneous aspect of the group.

Theoretical Implications

The results accomplished what this paper set out to do, provide a careful first step on the road to mapping certain features of groups useful to identify which theory or theories would best describe them. As mentioned in the literature review, this is by no means definitive. The specific purpose was to help distinguish between potential fit for theories belonging to the two overarching traditions associated with group theory. Not, however, to provide a guide to any specific theory as the answer to that question rests on the aims of the specific study and research question at hand.

What these results do suggest is simply that in states of equilibrium, individuals within a group will tend to cling to gestalt signifiers of group identity over individual markers. As a result, it typically will be more accurate to examine a group in terms of homogenous features over heterogeneous features. Even the results of this experiment do

not support a universal assertion of one over the other. Participants demonstrated a perceptual preference for homogeneous group identity, but not to the exclusion of individual identity.

Applied Implications

From a theoretical standpoint, the present study offers insight as to the applicability and utility of various theories relevant to the study of groups. But perhaps more useful is the practical applications of the present study to less theoretical and more grounded contexts. When researchers do not have access to data regarding group formation, it becomes difficult to apply certain theories. The present study offers a method around that complication in CMC groups. By studying the identity salience of the group, researchers can glean information about the genesis of a particular group.

Of course, this kind of issue is almost exclusively going to occur outside the laboratory. Indeed, real world groups often present a unique challenge to researchers because they not only provide too much information to allow for easy study but information prior to a study is somewhat inaccessible. Using the present findings as a guide, researchers can not only narrow down the appropriate theory for a given group but also circumvent the need to track down old information on the group.

In Live Contexts. Groups come in a wide range of conditions and contexts. Perhaps the most pertinent finding of the present research is less to do with the application of theory and more so the observation that when group formation is less structured, a wider range of possibilities occurs. Groups take different routes to reach the

same destinations with members taking longer or shorter time frames, tracks, and developing wildly different norms all while coalescing into highly salient groups.

For example, when confronted with the challenge of setting a batting order two baseball teams might approach the problem in different ways, both reflective of their formation and resulting identity. The team built of individual players and highly salient of group heterogeneity would seek to maximize each person's individual skillset, pairing a strong base runner with a batter capable of consistently fouling to create opportunities. In contrast, the homogeneous team formed around a gestalt identity would try to maximize the overall success of the roster, emphasizing a traditional batting order aimed toward encouraging players to fulfil certain roles such as that of the cleanup hitter.

The resulting rosters might appear identical. The strongest hitter on both teams is likely to appear in the same spot on the roster for different reasons, in the heterogeneous group batting cleanup because he or she thrives on batting with runners on base while in the homogeneous group he or she represents the best opportunity to provide points batting in that role. The result in both cases is the same. But as the groups progress toward identical conclusions they trace different pathways.

Where researchers need to be wary is situations when the result of these different pathways is a different endpoint. Perhaps a team decides that all cleanup hitters must play first base and as a result wastes the talents of superb outfielder. Alternatively, a player recognizes his individual strength is batting and neglects to practice his defense, hurting the team as a result. The consequences of an improperly utilized player for the baseball team are hardly that drastic (except for the fans), but it is simple to imagine other groups where the consequences are much greater than a lost game. In those groups,

rapidly developing awareness of the group's specific identity could be the difference between averting a catastrophe or suffering through one.

Limitations

This study's limitations primarily were confined to the limited nature of the experiment and features of the sample itself that created weaknesses in the data analysis. This section provides an overview of those limitations.

Generalizability. The present study has limitations in regards to the generalizability of the findings. These limitations stem from the scope and interaction time of the experiment.

Scope. The scope of the study is narrow. Based on these, results it is impossible to definitely state that group formation under other conditions would behave the same because deindividuation as a manipulation becomes much less predictable when introduced outside of CMC contexts. For example, inducing deindividuation using concealing robes and hoods also could invoke the specter of the Ku Klux Klan as in Reicher's (1982) original study on the subject. Other potential means of inducing deindividuation also invite complications of this sort rendering this sort of simulated environment difficult to cleanly replicate offline using the same kind of anonymity-induced deindividuation as the manipulation. That aside, if the potential complication is insignificant or contextually negligible then these results will transfer to offline settings.

Interaction Time. The interaction time in this experiment was limited. Participants met, formed groups, and adjourned after the experiment in sessions that were less than a day. Potentially different results could occur if groups took more time to bond

and interact. This might have led to the creation of more rules or a stronger social identity. It could also have had the opposite effect. Group members might have discovered upon further interaction more about other participants that would lead them to focus on salient differences as opposed to salient commonalities. Without a longer study, it is not possible to generalize these results to long-term groups.

Data Analysis. This study did have some clear limits with regards to data analysis. Because of the focused and relatively simple nature of the analysis, these limits were primarily restricted to logistical concerns.

Manipulation Check. Notably, both conditions experienced a salient social identity, but in this study, the deindividuation formation manipulation increased the salience of social identity relative to the control. In this case, the salience of that social identity is the dependent variable, salience of homogeneity, and not the check of group formation itself. Potentially this demonstrates that social identity formation was simply more prone to occurring in the deindividuation condition. Critically, however, the results did demonstrate that social identity forms in both conditions.

Further, the difference between the two conditions was not significant ($p < .066$). It was close enough, however, that with more participants or clearer data that ambiguity could be clarified. Though the difference was nearly significant, it was also a weak shift. The increase was 0.7 and while it is enough to raise interest and ideally prompt future study, is not cause for alarm concerning the rest of the dataset.

Future Directions

This experiment offers a preliminary look at a narrow range of groups. Groups with more extensive history, less controlled formation, larger and more or less defined sets of rules all present potential complications to blindly asserting the utility of this experiment as a guidepost for the application of theory to real life. While it is possible to alleviate this problem with additional testing of different conditions the truth is that searching for such a guide is probably futile. The far more practical exercise is to identify features of groups that can serve as important markers to aid in the application of theory. In that, the present experiment demonstrates that prioritizing examination of group level features is likely to bear more practical applications than prioritizing the individual will.

Longitudinal Studies. As noted in the limitations section, this study cannot demonstrate the persistence of these effects over time. A longitudinal study observing groups formed under similar conditions, could. Similar to Postmes, Spears, and Lea's (2002) work on anonymity the method of interaction could expand from a simple game to a more goal-oriented effort that would increase the incentive for groups to cooperate. This would not only be necessary for the prevention of significant attrition throughout the course of the experiment but could serve as an easier way to foster continued interaction between group members.

Expanded Contexts. Future inquiry ought to include expansion of the contextual factors that went into the creation of the group. Not only is it important to help validate these results in a variety of contexts, but the identification of other significant factors influencing group creation is vital to understanding the underlying mechanics themselves. Just as deindividuation behaves differently as a manipulation depending on the context

(Reicher, et al. 1995) other factors influencing group creation may behave differently depending on group construction. Identifying these factors, or lack thereof, is one future direction for studies utilizing a variety of contextual differences in the creation of small groups.

Existing Groups. Many of the most important groups to study are those that already exist. Researchers looking to gain a better understanding of the workplace, family, or (returning to the example from the beginning) a professional baseball team have a unique opportunity to examine the mechanisms of group formation in situ. As teams form, evolve, and dissolve within these organizations and social contexts the value of understanding how persistent group formation effects are increases.

Do members with prior history have a keener understanding of in-group differences or similarities? Does a newly salient identity trump the effects of prior interaction? Do new members take on the same perception of identity as existing members for heterogeneous and homogeneous identities? Will self-referential discussion perform the same when members have prior history with one another? All of these are potential questions to expand this research into the most important context, live situations and real world groups.

Conclusion

Returning to the example used throughout this paper, this study demonstrates an important facet of our hypothetical baseball team. First, no team forms entirely around one tradition. Any style of formation naturally includes elements of the other. The team that builds around the identity of the Yankees probably does not include a Babe Ruth, and

so must compensate by bringing forth the talents of the players they do have. That said, even while playing as the Yankees, group members will find ways to express individual traits. This is true even if expressing those traits means picking a famous player with a similar style and emphasizing similarities between the legend and the group member.

Second, groups and teams lean toward homogenous identity traits in an equilibrium. For a pickup game of baseball, a team is likely to coalesce toward the idea of playing like the Yankees if they have the opportunity to do both that or form around their individual traits. Even as players express individual skills and traits they are inclined to do so using the vehicle of the team and the shared language of a particularly admired player, manager, or moment from within the cultural identity of the team.

The beginning of this paper laid out the importance of studying groups and particularly the social identities that form within those groups. It did so primarily by looking at the past, but it is evident that groups will continue to play a large role in our collective future as well. That future demands stewardship. It demands understanding. It demands not only the continuous growth of scholarship within the field, but also the continuous refinement of that scholarship. Researchers across disciplinary lines rose to these demands admirably by creating the wealth of theory discussed above and applying it across a wide range of contexts, disciplines, and subjects. In doing so, they blessed the field with a set of tools that offer numerous means of studying groups.

Tools, however, are as useful as the hands that wield them. If we intend to extract the maximum utility from future work, then researchers need to understand when and why to apply these theories. This paper helps provide a means of doing just that, giving researchers another means to help apply theory in an efficient and effective manner.

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Appendix A

Text for recruitment message posted to Facebook:

Hello everyone,

I am recruiting participants for a thesis researching small group formation. Participation in this study will entail completion of the attached survey, participation in an online group for approximately thirty minutes, and completion of another survey. If you are interested and aged 18 or over, please complete the attached survey. Thank you!

Appendix B

Please select a color from the following options:

    1. Blue

    2. Red

    3. Green

    4. Yellow

Please select a color from the following options:

    1. Purple

    2. Orange

    3. Brown

    4. Pink

Please select a color from the following options:

    1. Violet

    2. Teal

    3. Black

    4. White

Please select a color from the following options:

    1. Silver

    2. Gold

    3. Grey

    4. Indigo

Appendix C

Thank you for agreeing to participate in this study. This study is an examination of group bonding. You will be sorted into groups based on your color preferences, although it is unlikely that every member of the group gave the same answer to each question.

Once in your group, please engage in a discussion of the guidelines, traits, and ideals you would like your group to follow along with your fellow members. As you do so, please maintain a civil and respectful discussion. Keep in mind that the manner in which you discuss and resolve these issues is also likely to become the standard way your group discusses other issues. At the end of this discussion, your group needs to come up with a minimum of three rules for members to follow. You may have more than three rules. There is also no restriction or emphasis on what rules you devise.

However, it is important that as you discuss these guidelines, traits, and ideals you consider and involve your individual experiences. Groups bond best when members feel comfortable expressing their individuality.

Appendix D

Stag Hunt

Your group will now participate in a game. The winner of the game is the player with the most points after the last of four rounds. In the event of a tie, multiple players win.

Each player will secretly receive an identity via private message indicating your in-game identity as Player A, B, or C. Note that the order is random and does not correspond to member's identities. Once you receive your in-game identity, please read the following instructions.

You are a group of hunters tracking a stag in the woods. However, hunting a stag is difficult work and requires the cooperation of your entire group. If all players decide to hunt the stag you will all receive three points. But you can only catch the stag if everyone participates, if less than three players hunt the stag then the stag escapes and everyone who attempted to hunt the stag will receive nothing.

Fortunately, the woods are also full of rabbits. Rabbits are worth one point. But rabbits do not require as much work as the stag and any player can catch a rabbit alone. If you choose to pursue the rabbit, you will receive one point no matter what any other players decide. Regardless of other player's decisions, anyone who decides to hunt a rabbit will receive one point.

Each hunter decides what game to pursue individually and in secret. Once each hunter decides, everyone will submits his or her decisions secretly. After everyone submits his or her decision, all players reveal their decisions and receive the rewards for any successful hunt(s).

Throughout the game, and before you make a final decision, you may engage in discussion with your fellow group members.

Appendix E

Thank you for agreeing to participate in this study. This study is an examination of group bonding. You will be sorted into groups based on your color preferences, although it is unlikely that every member of the group gave the same answer to each question.

Once in your group, please engage in a discussion of the guidelines, traits, and ideals you would like your group to follow along with your fellow members. As you do so, please maintain a civil and respectful discussion. Keep in mind that the manner in which you discuss and resolve these issues is also likely to become the standard way your group discusses and resolves other issues. At the end of this discussion, your group needs to come up with a minimum of three rules for members to follow. You may have more than three rules. During the game, your identities will be obscured and players will be anonymous. As a result, while you are free to devise any rules you deem appropriate, you may not impose rules that require members to reveal their identities publicly. You may also wish to consider that players will be anonymous when creating rules, as this may prevent you from enforcing rules.

However, it is important that as you discuss these guidelines, traits, and ideals you consider and involve your individual experiences. Groups bond best when members feel comfortable expressing their individuality.

Appendix F

Stag Hunt

Your group will now participate in a game. The winner of the game is the player with the most points after the last of four rounds. In the event of a tie, multiple players win.

Each player will secretly receive an identity via private message indicating your in-game identity as Player A, B, or C. Note that the order is random and does not correspond to member's identities. Once you receive your in-game identity, please read the following instructions.

You are a group of hunters tracking a stag in the woods. However, hunting a stag is difficult work and requires the cooperation of your entire group. If all players decide to hunt the stag you will all receive three points. But you can only catch the stag if everyone participates, if less than three players hunt the stag then the stag escapes and everyone who attempted to hunt the stag will receive zero points.

Fortunately, the woods are also full of rabbits. Rabbits are worth one point. But rabbits do not require as much work as the stag and any player can catch a rabbit alone. If you choose to pursue the rabbit, you will receive one point no matter what any other players decide. Regardless of other player's decisions, anyone who decides to hunt a rabbit will receive one point.

Each hunter decides what game to pursue individually and in secret. Once each hunter decides, everyone will submits his or her decisions secretly. After everyone submits his or her decision, all players reveal their decisions and receive the rewards for any successful hunt(s).

Throughout the game, you may engage in discussion with your fellow group members through the chat box.

Appendix G

Please complete the following survey by circling a number below each question.

1. I have a lot in common with the average person in my group.

Strongly disagree   1   2   3   4   5   6   7   Strongly

Agree

2. There are positive relationships among the group members.

Strongly disagree   1   2   3   4   5   6   7   Strongly

Agree

3. I do not feel a part of the group's activities.

Strongly disagree   1   2   3   4   5   6   7   Strongly

Agree

4. Problem solving processes would be disrupted if one or two members are absent.

Strongly disagree   1   2   3   4   5   6   7   Strongly

Agree

5. The group members feel comfortable in expressing disagreements in the group.

Strongly disagree   1   2   3   4   5   6   7   Strongly

Agree

6. I am similar to the average person in my group.

Strongly disagree   1   2   3   4   5   6   7   Strongly

Agree

7. The group members seem to be aware of the group's unspoken rules.

Strongly disagree   1   2   3   4   5   6   7   Strongly

Agree

8. In my group people have a lot in common with one each other.

Strongly disagree   1   2   3   4   5   6   7   Strongly Agree

9. In spite of individual differences, a feeling of unity exists in my group.

Strongly disagree   1   2   3   4   5   6   7   Strongly Agree

10. It appears that the individual and group goals are inconsistent.

Strongly disagree   1   2   3   4   5   6   7   Strongly Agree

11. People in my group are very similar to each other.

Strongly disagree   1   2   3   4   5   6   7   Strongly Agree

12. Minimal attempts are made to include quieter members of this group.

Strongly disagree   1   2   3   4   5   6   7   Strongly Agree

13. There is a feeling of unity and togetherness among group members.

Strongly disagree   1   2   3   4   5   6   7   Strongly Agree

14. I identify with my group.

Strongly disagree   1   2   3   4   5   6   7   Strongly Agree

15. I feel included in the group.

Strongly disagree   1   2   3   4   5   6   7   Strongly Agree