GROUP NORM CHANGE AS AN EFFECT OF TYPE OF NORM DEVELOPMENT 
AND GROUP TASK PERFORMANCE

By

YOUNG-MI KWON

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To the Faculty of Washington State University:

The members of the Committee appointed to examine the dissertation of YOUNG-MI KWON find it satisfactory and recommend that it be accepted.

_________________________________________________
Craig D. Parks, Ph.D., Chair

_________________________________________________
Christine Horne, Ph.D.

_________________________________________________
Paul Kwon, Ph.D.
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Abstract

By Young-Mi Kwon, Ph.D.
Washington State University
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Chair: Craig D. Parks

The present study is proposed to investigate the conditions under which people want to change group norms in small groups. Literature suggests that people may want to change norms when they do not work well, either because the norms are problematic or because the environment has changed, but there is very little research on norm change in small groups. The current study examines how type of group norm development and the experiences of success or failure at group task performance affect group members' willingness to change their group norms. In Study 1, a group norm directed toward how to perform a group task was determined by group member opinions, an experimenter, or an inherited custom. After working on a first trial of the task, participants received success or failure feedback, and were asked whether they personally wanted to change the group norm or retain it. As expected, participants wanted to change the group norm when they failed compared when they succeeded. However, expected effect of type of norm was not found.

In Study 2, minimal group paradigm was employed to produce feeling of groupness which may be lack in Study 1. Type of group norm development and group task performance
were manipulated in the same way of Study 1. After receiving success or failure feedback, participants were asked whether they personally wanted to change the group norm or retain it, as well as whether they wanted to accept a new member to the group. Likewise Study 1, participants who received failure feedback were more willing to change the group norm than were those who received success feedback. More importantly, results indicated that participants wanted to change the group norm when it was determined by the experimenter rather than either group member opinions or an inherited custom. In addition, participants who believed the group norm was determined by group member opinions were more reluctant to accept a newcomer to the group compared to participants in other conditions.
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CHAPTER ONE

INTRODUCTION

1.1. General Introduction

People sometimes show different behavioral patterns depending on the situation or persons with whom they interact. This is often because different social situations require people to behave in a certain way. For example, when people interact with their boss at work, they are more likely to act professionally and avoid small-talk during a meeting, whereas they tend to be relaxed and have a personal conversation when they interact with their close friends at a bar. Even work groups may require different behaviors which reflect each group’s culture. When the group’s culture emphasizes individual members’ productivity, a member of the group is more likely to focus on his/her individual work and try to increase the productivity regardless of other members’ performance. If the person changes jobs and becomes a new member of another work group which emphasizes harmony and cooperation among group members, his/her behaviors to increase his/her own productivity may no longer be the best behavior if it damages harmony among group members. Then, he/she needs to figure out which behaviors are appropriate in the group by observing other members’ behaviors or asking veteran members what he/she should do to adjust his/her own actions to the group’s norms.

“Norm” means either what people commonly do or what people are allowed to do (Cialdini, Kallgren, & Reno, 1991). By putting an emphasis on the role of sanctions, Kerr and his colleagues define a norm as “an expectation about how one ought to act, enforced by the threat of sanctions or the promise of reward” (Kerr, Garst, Lewandowski, & Harris, 1997, p. 1300). As described in the above example, the contents of the norms can vary across groups as a result of each group’s culture and history. From this perspective, some researchers define group norms as
“regularities in attitudes and behavior that characterize a social group and differentiate it from other social groups” (Hogg & Reid, 2006, p.7) or “collective expectations about how to behave that are enacted in the patterned behavior of members over time” (Arrow & Burns, 2004, p.174). According to social identity theory (Tajfel & Turner, 1979), when an individual becomes a member of a group, he/she connects a part of his/her self-concept to group membership and identifies himself/herself as a part of the ingroup. To protect and maintain positive self-concept as a member of the group, he/she is motivated to attain a positive distinctiveness of his/her ingroup from all outgroups. From this motivation, he/she is likely to follow the prototype to behave in appropriate way in the ingroup and to reacts negatively toward a member who breaks the group norms and threatens the group’s positive identity (Schachter, 1951).

Feldman (1984) suggests that norms are enforced when they help facilitate group success and survival; allow group members to predict others’ behaviors and interact efficiently; avoid embarrassing interpersonal situations between group members; and express the important values of the group and making the ingroup distinctive from the outgroup. Therefore, understanding group norms is important not only for individual members’ adjustment but also for a group’s survival. Literature in sociology also suggests that there are different approaches to explain how norms form (see Horne, 2009). According to the approaches, norms are developed (a) by an authorized figure to regulate a group of individuals’ behaviors, (b) through a group of individuals’ discussion and negotiation, or (c) as a pattern of behaviors are repeatedly observed by others in a certain situation.

Even though people are motivated to maintain stability which allows them to predict things, a certain event can cause them to change their existing behavioral patterns. In the above example, if the person as a new member shows productivity-focused behaviors in the group
which emphasizes harmony and cooperation among group members, the existing members may want to impose sanctions against him/her and make him/her follow the group norms. However, if some of the veteran members doubt that the current group norms help the group’s survival, bringing the new member can be a good opportunity to think about the current status of the group (Choi & Thompson, 2005) and consider change if needed (Ziller & Behringer, 1960).

The present study investigates certain conditions under which groups want to change their norms. Specifically, it investigates how group success/failure experiences on task performance affect member willingness to change their group norm depending on the way how the norm was developed in groups. The current study examines individual members’ cognition and behavioral intention regarding group norm change.

1.2. Theoretical Background

1.2.1. Group norms research

Early studies in social psychology. The early empirical studies of norms in social psychology examined people’s conformity behaviors in groups. Sherif (1936) used the autokinetic phenomenon, which refers to the illusion of motion that results when a small, stationary light is observed in a dark room, and examined the characteristics of norms in a setting in which there is no established norm that affects participants’ behaviors. Participants were exposed to the autokinetic illusion repeatedly and asked to report how far they saw the light move. Sherif (1936) found that even though the participants had different patterns of responses, they showed a convergent response when they were in a group as they were affected by each other.

In Asch’s studies (1951, 1955), participants were asked to tell which of three lines was the same length as a standard line. In this experimental paradigm, only one person in the group
was the actual participant. The others were confederates who consistently selected the wrong line before the actual participant answered. Although the correct answer was easily recognizable, most of the participants reported the wrong answer, following the confederates.

Deutsch and Gerard (1955) distinguished the conformity behaviors found in Sherif (1936) from what Asch (1951, 1955) found. According to Deutsch and Gerard (1955), the former type is informational social influence which means “an influence to accept information obtained from another as evidence about reality” and the latter one is a normative social influence, “an influence to conform with the positive expectations of another” respectively (p. 629). In Sherif’s study, participants were not certain of their responses due to the ambiguity associated with the illusion; hence, they relied on other members to obtain accurate information. On the contrary, the task used by Asch was very clear and had a clear answer. However, the unanimity of other members produced social pressure which made the participants conform to the majority although their private beliefs were different. Kelman (1958) also distinguished internalization from compliance: Internalization is accepting the majority’s belief and conforming both in public and private, whereas compliance is public conformity while keeping one’s own private beliefs that are inconsistent to the conforming behavior.

**Group norm emergence in small groups.** Since the early research on group norms in small group setting, only a few studies have been conducted to examine group norms in social psychology. Bettenhausen and Murnighan (1985) observed interaction among group members to understand how groups emerge. They suggested that group members in a new situation will use their definition of the situation to retrieve an appropriate behavioral script for the situation. Five participants role-played representatives of one of five different engineering departments competing for funded research projects, and the task was to decide who would divide the fund
for 12 projects and how much they would receive when it was divided. By observing and analyzing the group interactions, the researchers proposed an interactive effect of individual members’ interpretation of the situation and behavioral scripts on group interaction: If group members have the same relational model of the situation and retrieve similar scripts, communication and interaction will be unproblematic and an explicit discussion is not necessary; however, if either one is different among members, interaction will be problematic or an explicit discussion will be required to establish the norms (Bettenhausen & Murnighan, 1985).

Graham (2003) observed ten computer-mediated learning teams and proposed a model of norm development. He describes norm development as the process by which group norms evolve from a general state with fuzzy boundaries to a more operationalized state with clearly defined boundaries. Group members have different perceptions of norm boundaries at first, but the discrepancy can be reduced by coordination and clarification among the members. According to the cycle of norm development proposed by Graham (2003), a norm developed through coordination and negotiation is strengthened by compliance or weakened by violation. Sanctioning a norm violator can strengthen the norm by emphasizing that the norm exists and will be enforced, while when the violation is not sanctioned, the norm is weakened. An unintentional norm violation is likely due to misalignment in individual team members’ perceptions of the norm boundaries. Then, group members try to figure out the different perceptions and clarify the norm boundaries to reduce different understandings and potential conflicts.

**Type of norm formation.** A literature review on group norm research suggests that there are different sources of norm formation in small groups. For example, in Weick and Gilfillan’s (1971) study, a group norm was implanted by an experimenter and group members in the initial
generation were forced to follow the group norm while working on the task. In studies in which there was no explicit enforcement of a group norm (Asch, 1951, 1955; Jacobs & Campbell, 1961; MacNeil & Sherif, 1976; Sherif, 1936), participants sometimes observed and followed other group members’ behaviors (including confederates) because the behavior was considered as appropriate due to its informational/social influences, though Bettenhausen and Murnighan (1985) and Graham (2003) both suggested that group members are more likely to discuss and coordinate an “appropriate” behavior for the current situation. The idea of different types of norm formation has been discussed in the sociology literature (Horne, 2009; Opp, 1982; Ullmann-Margalit, 1977). According to Horne (2009), there are three different approaches to explain norm formation and development: consequentialist approach, meaning approach, and typicality approach. Each approach has emphasis on a certain behavior’s consequences, attached meaning, or frequency. According to the Consequentialist approach, norms are formed and enforced to regulate behaviors of certain groups of individuals. To increase the probability of behaviors which benefit the group of individuals and to decrease the probability of behaviors which harm the group, individuals who follow norms get rewards while those who break the norms are punished. The second approach is the Meanings approach which suggests that norms emerge based on individuals’ discussion and negotiation (see Fine, 2001; Horne, 2009). According to this approach, individuals try to understand and interpret a given context and figure out meanings of a behavior in the context to determine whether it is appropriate or not. Since individuals may have different personal experiences and perspectives, they go through interaction and negotiation to reach an agreement about appropriate behavior in the context. The last approach, the Typicality approach, emphasizes how frequently or typically a behavior is observed in a certain situation (Horne, 2009). According to this approach, norms emerge when a
specific behavior repeatedly occurs in a certain situation and develops into a pattern (Opp, 1982). In other words, when individuals repeatedly observe the same pattern of behaviors from others in a certain situation, they are more likely to believe that the behaviors are social norms in that context.

Type of norm can also differ depending on the source of development. Opp (1982) categorized norms as institutional norm, voluntary norm, and evolutionary norm. The first type, “institutional norm” means norms which are formed and enforced by certain individuals or institutions to regulate individuals’ behaviors. Some norms such as laws or rules are usually developed by authorized individuals or institutions such as a legislature or a ruler. In the same way, in a small group, group norm can be developed by a leader of the group or a third party to regulate the group members’ behaviors in certain ways. The second type, “voluntary norm” emerges based on individual voluntary engagement in interaction and negotiation. In a newly formed small group, when confronted with a collaborative task, group members may want to discuss and make an agreement on how to divide up the work and how to coordinate before they start working. Lastly, “evolutionary norm” emerges in an evolutionary and unplanned way as individuals accept and internalize the norm. This type of norm has been studied in early social psychology research on conformity (Asch, 1951, 1955; Sherif, 1936) and has been called a “descriptive norm” by Cialdini and colleagues (Cialdini et al., 1991). Even though a descriptive norm is neither enforced by an authorized entity nor determined by group members’ negotiation, it still affects individuals’ behaviors through social pressure and influences (Opp, 1982). Bicchieri (2006) also suggests that some descriptive norms become conventions when lots of people in a society follow the norms and maintain them for a long time.

1.2.2 Group norm change
Considering that groups are adaptive and dynamic systems which go through changes across time (McGrath, Arrow, & Berdahl, 2000), one of the important features of group norms is their potential for change (also see Axelrod, 1986). In other words, even after norms have formed in a group, they can vanish, fade away, or change under certain circumstances. Although empirical research on norm change is very scarce, findings from early conformity research suggest implications of group norm change.

**Early studies on group norm change.** As mentioned earlier, few early studies were conducted to observe conditions in which an arbitrary norm in small groups changes over time. Jacobs and Campbell (1961) had a group of participants performed the autokinetic movement task used in Sherif’s (1936) study, but some of them were experiment confederates who gave extreme judgments to establish an arbitrary norm in the group. After participants in a group gave a set of 30 trials of judgments, “the oldest member of the group was taken out” while a new member was introduced to the group (Jacobs & Campbell, 1961, p. 650). Throughout this process, the confederates were replaced first and the “older” naïve participants were then replaced by new members. The researchers found that the arbitrary norm was perpetuated for four or five generations even after the last confederate was removed from the group. It implies that a norm can strongly and persistently remain in a group once being established even if the norm does not reflect the reality very well. At the same time, however, the researchers found that once the arbitrary norm started to decay gradually, participants’ judgment rapidly moved from the extreme judgment (the arbitrary norm) toward the moderate judgment found in the control groups in which no confederate existed. This finding implies that a norm which does not reflect the reality very well is eventually thrown out or changed to the natural norm which is more appropriate to environment.
While pointing out the extreme level of arbitrariness of the implanted norm in Jacobs and Campbell’s (1961) study, MacNeil and Sherif (1976) conducted research to compare different levels of arbitrariness in the autokinetic movement task. In the least arbitrary condition, a natural norm was formed as naïve participants gave 30 trials of judgment in the first generation. After each set of 30 trials, one of the oldest members was replaced by a new member. In the moderately arbitrary condition, a moderately arbitrary norm was formed as three confederates in the first generation gave moderate estimates. In the most arbitrary condition, the confederates gave extreme estimates. The confederates and older members were replaced by new members in the usual way. The researchers found that after all confederates were taken out, the more arbitrary the norm, the less likely the norm was to be transmitted to the just-succeeding generation of naïve participants. Again, these findings imply that norms which do not fit in reality diminish because they do not function very well in the given situation.

Weick and Gilfillan (1971) compare two alternative norms that differ on difficulty of application. In their study, participants in three-person groups were asked to present a number between 0 and 10 so that the sum of the three numbers matches a target number given by an experimenter while communication among group members is not allowed. Among at least 25 strategies to play the “common target game”, the experimenter assigned either easy or difficult strategies as an arbitrary norm to the groups of first generation. In each succeeding generation, one “older” member was replaced by a new member. Weick and Gilfillan (1971) found that while the difficult strategy was changed to other easier strategies by the fourth generation of participants, the easy strategy was perpetuated across generations even though there were equally easy strategies available. These findings imply that even if certain norms do fit well in the
situation and work well, norms which are easier to follow and apply are more preferred and last longer in groups.

Possible conditions of norm change. Some researchers have also suggested certain conditions under which norms may change at different levels such as changes in costs and benefits associated with a certain behavior (Horne, 2001), confrontation with a new situation (Ullmann-Margalit, 1977), membership change in groups (Arrow & Burns, 2004; Choi & Levine, 2004), existence of minority dissent (Kincade, 2004; also see Choi & Levine, 2004), and failure in task performance (see Choi & Levine, 2004). When a group fails in achieving a goal, group members may reflect on the current group norms to figure out the cause of the failure, and change a problematic or inefficient norm to increase their chances of success in the future. Even when a group succeeds at a task, group members may still want to change the norm, if they expect to take on a new task in the future, or if they want to achieve an even higher goal in the future. Even small groups change to maintain intergroup differentiation (Hogg & Reid, 2006). In contrast, when two small groups are merged into one larger group, members from both groups need to change group norms to reduce differences between two. Group membership change is one of the factors that influence the current group norm. When group members are replaced by new people, group norms change to match the preferences of new members more closely (Arrow & Burns, 2004). Even a small number of newcomers also impact group norms by motivating oldtimers to reflect on the current norms and structure. According to the group socialization model (Moreland & Levine, 1992), a group applies pressure on newcomers to change in such a way that they best serve the group’s needs and goals, and at the same time, bring the newcomers in line with group norms.
the same time, new members apply pressure on the group to change in such a way that it best reflects their own needs and goals. Existence of dissent or a minority has similar influence. As Kincaid (2004) showed, at times, a minority which dissents from the current prevailing group norms can persuade a majority and change the norms. A set of data also suggests that people are more willing to change their group norms when the existing group norms do not work well, when their group failed in the task, and when the environment changed and the existing group norms do not fit the new situation (Kwon & Parks, in preparation). Among the outlined conditions, the current study focuses on situations in which groups fail in task performance and situations where membership change affects group norm change.

**Group task performance and group norm change.** After a group works on a task, feedback of either success or failure in task performance implies whether current group norms are appropriate and efficient or inappropriate and inefficient in the current situation. When a group has succeeded in a task, group members may believe that the norms are fine as they are and feel no need to change them. Any change may even seem to threaten the potential positive outcomes in the future. By getting evidence that their group norm is working well, group members are more likely to adhere to the current norms and be reluctant to change them. In contrast, feedback of failure may be a sign of a problem in group process. Group members may feel that their group is not in a good condition and that they need to identify the problems and fix them. They are more likely to check different aspects of their group such as members’ abilities and efforts, communication style, or group norms. Although failure feedback does not necessarily imply the norm is problematic, if group members doubt the group norms work well in the current situation, they are more likely to inspect them, and change them to succeed in the task next time.
Membership change can be considered as either a threat or a possible resource to the group depending on how the group has worked (Ziller & Behringer, 1960). In other words, although the newcomer can disrupt the ongoing group process in a negative way, at the same time, he/she can be a source of change which is required to resolve the problematic group process. Choi and Thompson (2005) found that when group members experienced membership change and interacted with a newcomer they performed better in a creativity task than those who did not experience membership change. They argue that bringing in the new member facilitates reflection about what the group has been doing, which in turn enhances creative performance. Ziller and Behringer (1960) found that when a confederate newcomer suggested a different strategy to work on a task, his opinion was more likely to be accepted by group members when the group failed in a previous round of the task compared to when the group succeeded. Similarly, Choi and Levine (2004) found that groups receiving feedback of failure on a first round of a task were more likely to change their task strategy by accepting a confederate newcomer’s suggestion on the second round compared to those who received feedback of success.

**Group norm change as interaction of group task performance and type of norm formation.** Even though the effect of task performance feedback on group members’ willingness to change group norms seems obviously strong, this effect may be moderated by features of the norms. The current study focuses on the type of norm formation and its impact on group members’ willingness to change group norms. For this study, I have brought Opp’s (1982) idea of type of norm depending on the source of norm development – institutional norm, voluntary norm, and evolutionary norm.
In Weick and Gilfillan’s (1971) study, an arbitrary norm was assigned by an experimenter for the first generation of participants. This type of norm can be considered as an institutional norm because an authorized person has enforced the norm. In contrast, in Jacobs and Campbell’s (1961) study and MacNeil and Sherif’s (1976) study, an arbitrary norm emerged as confederates in a first generation suggested a certain estimate and naïve participants conformed to the arbitrary norm. Since there was no explicit discussion or negotiation on norm development, this type of norm can be classified as a descriptive norm or an evolutionary norm. However, the current study emphasizes the influences of the descriptive norm on the succeeding generations who perceive the norm as an inherited norm from the past. Thus, this type of norm will be called an “inherited norm” throughout the current study.

Even though there was no voluntary norm examined in those studies, one study has provided evidence that a voluntary norm may have a different impact on group members’ willingness to change the norm compared to an institutional norm. Choi and Levine (2004) examined the effect of group choice of task strategies and group performance on the extent to which group members change their strategy by accepting a newcomer’s suggestion. In this study, male participants worked on a team air-surveillance task (TAST) in three-person groups. Half of them had a chance to choose a task strategy while an experimenter assigned a task strategy to the other half. After performing on a first found, the participants were told that their team score was either 65 (failure condition) or 85 (success condition) with 75 representing a good score. Before the second round, one of the group members was replaced by a new member who had completed individual training and suggested changing the group’s task strategy. The researchers found that the newcomer’s suggestion was more likely to be accepted by veteran members when the
original task strategy was assigned by the experimenter and when the group failed in the first round of the task.

As Choi and Levine (2004) argue, once group members choose one among different alternatives, “choice produces commitment and therefore resistance to change” (p. 274). According to cognitive dissonance theory (Festinger, 1957), once individuals have made a choice among alternatives, they are motivated to change their cognitions or attitudes, which results in strong preference and positive attitudes toward the one they have selected. Kiesler (as cited in Choi & Levine, 2004) also argued that once individuals make a decision they feel responsibility for their own decision and thus they feel commitment to their decision. Therefore, if a group norm is developed based on group members’ opinions, group members will be more likely to feel commitment to the norm as a group. Even if any individual member has a different opinion on the group norm, he/she may feel influenced to follow the norm because it is his/her group’s decision.

In contrast, when a group norm is developed regardless of group members’ opinions, commitment to the norm will be weaker. Especially when the norm is assigned by an experimenter, some individuals may feel resistance to the forced norm if they feel that there is no reason to conform to the norm. Based on reactance theory (Brehm, 1966), it is assumed that if those individuals perceive the assigned norm as a threat to their freedom to choose, they tend to behave in the way to regain the freedom. Therefore, individuals may follow the institutional norm as a form of compliance or obedience, but they are less likely to internalize and to feel commitment to the norm. Similarly, when a group norm is introduced because it has been used in a similar situation, group members may feel less commitment because their individual opinions were not applied to the norm formed. However, if individuals do not have a clear idea on how to
behave in a given situation, an inherited norm can work as a guide which produces informational conformity. Some individuals may follow the norm to comply with convention. Nevertheless, when individuals have enough information to understand the situation and discover a better alternative than the given inherited norm, they may prefer the alternative as a new norm (see Weick & Gilfillan, 1971).

All of this suggests that the effect of task performance on group members’ willingness to change a group norm will be moderated by the way in which the norm was developed. When a group gets positive feedback on task performance, group members will be more likely to feel confident that their current group norm is working regardless of their individual preference or commitment to the norm. To maintain the group’s good performance in the future, group members will be less likely to change their group norm. In contrast, when a group gets a negative feedback on task performance, group members will be more likely to believe that the current norm does not work very well in the task situation. When the norm is either an institutional norm or an inherited norm, group members will easily change the norm because they do not feel commitment to the norm. However, when the norm is a voluntary norm developed based on group members’ opinions, their psychological commitment to the norm may further increase their behavioral commitment to the norm by sticking with it to justify their sunk costs (“psychological entrapment”: see Bazerman, Giuliano, & Appelman, 1984; Dietz-Uhler, 1996; Kameda & Sugimori, 1993). As a result, those who have committed to the voluntary norm will be more reluctant to change the norm even after experiencing the failure.

Additionally, if group members have a chance to bring a newcomer who possibly suggests changing the group norm, they would react in different way depending on how the group norm was developed and how they performed on the task. As earlier discussed, a
newcomer can be perceived as a source of threat when exiting group members want to maintain the group in the current condition and expect the newcomer to disrupt it. On the other hand, bringing a newcomer can be a good chance to those who want to change the current condition (see Choi & Levine, 2004; Choi & Thompson, 2005; Ziller & Behringer, 1960). In other words, the more group members are willing to change the group norm, the more they are likely to accept a newcomer to their group.

1.3. Hypotheses

On the basis of the theoretical background, hypotheses are developed as below.

**Hypothesis 1.** Main effect of Type of Norm: When a group norm has formed based on group members’ opinions (Voluntary norm condition), participants will be less likely to change their group norm, and less likely to accept a newcomer, compared to when a group norm has been assigned by an experimenter (Institutional norm condition) or formed based on a commonly used method (Inherited norm condition).

**Hypothesis 2.** Main effect of Task Performance: Participants who receive feedback of success (Success condition) after a first round of the task will be less likely to change their group norm, and less likely to accept a newcomer, compared to those who are told that they have failed (Failure condition).

**Hypothesis 3.** Interaction effect of Task Performance and Type of Norm: When participants receive feedback of success after a first round of the task, they will be less likely to change their group norm compared to when they have failed regardless of the type of norm. However, when they have failed in the first round of the task, those who have used voluntary norm will be less likely to change their group norm and to accept a newcomer than will those who have used either institutional norm or inherited norm (See Table 1.1. and Figure 1.1.).
CHAPTER TWO

PILOT STUDY

A pilot study was conducted to develop a group task and possible group norms that can be applied to the task situation.

2.1. Method

2.1.1. Participants

105 WSU students (24 males and 81 females) enrolled in introductory psychology classes participated in the study and got a research credit toward fulfillment of a course requirement.

2.1.2. Materials and procedure

The task was to search for information using an almanac book and answer a list of questions. The questions were multiple choice questions with four possible answers. Sixty questions were developed in advance and divided into three versions which consist of 20 questions for each. Then, three more versions were developed with the same 20 questions each but in the opposite order. This procedure resulted in six different versions of the task which consist of 20 questions each.

Based on the idea that a specific task strategy, method, or procedure can become a group norm once group members are aware of it (see Choi & Levine, 2004; Weick & Gilfillan, 1971), six different methods which can be used to work on the task were introduced as below:

[Method A] Every member works on all the questions individually and submits individual work. When a person finishes, he or she just waits for everyone else to finish.

[Method B] Every member works on all the questions individually. When a person finishes, he or she just waits for everyone else to finish. Then, the answers are compared with each other, and the best answer for each question is selected.

[Method C] Every member works on all the questions individually. A member who finishes quickly then helps other members.
[Method D] Members divide the questions among themselves so that each person works on a few questions.

[Method E] Members divide the questions among themselves so that each person works on a few questions, but a member who finishes quickly then helps other members.

[Method F] Members divide the questions among themselves so that each person works on a few questions. Then, they give their answers to other members, and the other members check their work before submission.

As participants arrived, they were guided to individual cubicles. They were told that they were going to participate in a pilot study whose purpose is to check experiment materials for an upcoming study. They were then asked to work on two practice task questions using the Almanac: “Variety magazine ranked 50 top-grossing American movies. Among the following movies, which one was ranked fifteenth?” and “Among the following U.S. states, which state has a different highway speed limit in urban interstates?”

Then, they were asked to imagine a situation in which they are going to work on a similar task with 21 questions in a three-person group and three members’ performance will be summed up to determine the group’s performance. As the six different methods were presented, the participants were asked to evaluate each method as well as rank them according to their preferences. After evaluating the six methods, they received one of the six versions of task and asked to work on the task for 20 minutes. When they were done, they were thanked, debriefed, and dismissed.

2.2. Results

On the two practice task questions, only 1.9% and 3.8% of participants skipped the questions, which shows that the participants understood the task quite well.

Based on the participants’ performance on the six versions of the task and their perception of difficulty level, 21 questions were selected to construct an “Information Search Task” for the current study (see Appendix A).
Lastly, among the six methods, method B ($M = 5.15$, $SD = 1.68$), method E ($M = 4.92$, $SD = 1.67$), and method F ($M = 5.54$, $SD = 1.69$) were most preferred by the participants (see Table 2.1.). Those three methods were selected as three alternative norms in the current study: Method A (which was method B in the pilot study) is that every member works on all the questions individually and selects best answers when everyone is done; method B (method E in the pilot study) is that members work on divided portion of questions and help other member to finish his/her part; method C (method F in the pilot study) is that members work on divided portion of questions and check other members’ work.
CHAPTER THREE

STUDY 1

The purpose of Study 1 was to test how the prior group performance and the way in
which a group norm was developed influence member willingness to change the group norm
prior to the next task.

3.1. Method

3.1.1. Participants

Eighty three WSU students (28 males and 55 females) enrolled in introductory
psychology classes participated in the study in partial fulfillment of a course requirement. Two
participants were excluded from the analysis because one found out about the deception and the
other left during the experiment, resulting in 81 participants (26 males and 55 females) in total
for data analysis.

3.1.2. Design

The experimental design was a 3(Type of Norm: Voluntary vs. Institutional vs. Inherited) X 2(Task Performance: Success vs. Failure) between-subjects factorial design.

Type of Norm was manipulated by having participants complete an individual practice
task and then select a preferred task strategy from among three options. Method “B” (Members
divide the questions among themselves so that each person works on a few questions, but a member who
finishes quickly then helps other members) was always assigned as the group norm, but the
explanation for why it was selected differed depending on the condition. In the Voluntary
condition, participants were told that method “B” was selected because it was the most popular
among group members. In the Institutional condition, participants were told that method “B” was
selected by the experimenter regardless of group members’ opinions. In the Inherited condition,
participants were told that method “B” was selected regardless of group members’ opinions because it has been a popular method wish past study groups (See Appendix C).

Task Performance was manipulated by providing bogus feedback on participants’ performance on a first round of the task. In the Success condition, participants received feedback indicating that their group’s score on the first round was 85, while those in the Failure condition received a group score of 65. To make sure that this feedback indicates success and failure respectively, all participants were told that a score of 75 represents good performance on this task (See Appendix D). This manipulation was same with the one used by Choi and Levine (2004).

As dependent measures, participants were asked if they want to change their group norm before starting a second round of the task and if they want to bring a new member who wants to change the current norm.

3.1.3. Procedure

When participants arrived, they were seated in individual cubicles. They were told that the goal of the experiment is to investigate relationships among group norms, group member differences, and task performance in a virtual group with no face-to-face interaction among group members. They were also told that they will work in a three-person group; in actuality, all participants worked individually and their perceptions and feelings were measured at an individual level. They then filled out an “individual differences survey” consisting of resistance to change scale (Oreg, 2003), an unconventionality scale from the HEXACO personality inventory (Lee & Ashton, 2004), and a conformity scale from the Jackson personality inventory – revised (Jackson, 1994).
Then, a practice task including two questions along with task instructions and the Almanac book was given to the participants. After working on the practice task, participants were sown three methods they could use during performance of the group task (methods B, E, and F from the pilot study) and asked to rank the three alternatives according to their preferences. Responses were collected, and the experimenter waited for a few minutes to simulate aggregation of participant choices. The participants then got a “group norm sheet” which indicated that method B (“Members divide the questions among themselves so that each person works on a few questions, but a member who finishes quickly then helps other members.”) was to be their group norm, based on group member preferences (Voluntary norm condition), experimenter choice (Institutional norm condition), or the method having been used by previous groups (Inherited norm condition). Then, they were asked to fill out a questionnaire to measure their perceptions and evaluations of the group norm.

“Information search task: Round 1” was then given to the participants. They were asked to follow the group norm. Participants were told that each of the three members would work on one third of the 21 questions for 20 minutes, but in actuality, all participants were asked to cover the first seven questions. If participants finished the seven questions in 20 minutes, the experimenter asked them to work on two more questions to help the other members. If participants did not finish seven questions in 20 minutes, the experimenter told them that she would ask other members to complete the remaining questions. After 20 minutes has passed, the experimenter collected the first round of work, and told the participants that she would evaluate their work and calculate a group score. While they waited, they were asked to fill out a questionnaire measuring their expectations and perceptions of their performance.
After five minutes, the experimenter gave a feedback sheet to the participants that provided bogus feedback on their group performance on the first round of the task. Depending on the conditions, participants received feedback that their group did a good job (a group score of 85; Success condition) or a poor job (a group score of 65; Failure condition). Then, a questionnaire was given to measure desire to change the group norm before working on the second round of the task and willingness to accept a new member who suggests changing the group norm. The experimenter then told the participants that she was waiting for other participants to be ready for the second round and asked them to complete a questionnaire while they were waiting. By accepting the request, the participants filled out a questionnaire to examine whether they were suspicious about the deceptions. Then, the experimenter told them that the questionnaire was actually the last part of the study and they were done. Lastly, they were debriefed and thanked (See Figure 3.1. for procedure of Study 1).

3.2. Results

3.2.1. Manipulation Check

Manipulation check of type of norm. A manipulation check for Type of Norm was assessed using five items: “To what extent do you think the norm will be effective?” (1 = Very Ineffective, 7 = Very Effective), “To what extent do you think the norm will be powerful?” (1 = Very Powerless, 7 = Very Powerful), “To what extent do you feel personally committed to this norm?” (1 = Not Committed At All, 7 = Very Committed), “To what extent do you personally agree with this norm?” (1 = Strongly Disagree, 7 = Strongly Agree), “To what extent do you think you will like working in your group?” (1 = Not At All, 7 = Very Much). A one-way analysis of variance showed that there was no significant difference among the three conditions on these five items (p = .680, .902, .439, .532, and .116, respectively).
**Manipulation check of group performance.** A manipulation check for group performance was assessed using three items: “To what extent do you think your group performed well in the first round?” (1 = Very Poorly, 7 = Very Well), “To what extent do you think the norm was effective when your group performed the task?” (1 = Very Ineffective, 7 = Very Effective), “To what extent did you like working in this group?” (1 = Not At All, 7 = Very Much).

A Type of Norm X Group Performance analysis of variance yielded a significant main effect of group performance on the first item, $F(1, 75) = 184.18, p < .01$. Participants in the Success condition ($M = 5.58, SD = .84$) reported that they performed well on the first round of the task compared to participants in the Failure condition ($M = 3.05, SD = .87$). There was a significant main effect of group performance on the second item as well, $F(1, 75) = 38.49, p < .01$, indicating that participants in the Success condition ($M = 5.32, SD = 1.00$) thought the norm they used was effective compared to those in the Failure condition ($M = 3.78, SD = 1.19$). In the same way, a significant main effect of group performance on the third item indicated that participants in the Success condition ($M = 5.48, SD = .82$) reported that they liked working in the group compared to participants in the Failure condition ($M = 3.88, SD = 1.47$), $F(1, 75) = 34.85, p < .01$.

**3.2.2. Group Identification**

Group identification was assessed using six items from the questionnaire completed after the participants received the feedback on their group performance on the first round of the task:

“To what extent do you agree with the norms of your group?” (1 = Fully Disagree, 7 = Fully Agree), “To what extent do you like belonging to your group” (1 = Not At All, 7 = Very Much), “To what extent do you think you are the important member in your group?” (1 = Not At All, 7 = Very Much), “To what extent are you proud of your group?” (1 = Not At All, 7 = Very Much),
“To what extent do you feel identification with other members in your group?” (1 = Not At All, 7 = Very Much), “what is your global impression of your group?” (1 = Very Unfavorable, 7 = Very Favorable). Participants’ responses to these items were averaged to yield a group identification score (Cronbach’s $\alpha = .82$).

A Type of Norm X Group Performance analysis of variance yielded a significant main effect of group performance, $F(1, 75) = 46.72, p < .01$. Participants in the Success condition ($M = 4.97, SD = .83$) reported higher group identification than those in the Failure condition ($M = 3.71, SD = .79$). Neither a main effect of Type of Norm nor the interaction effect was significant, $F < 1$.

### 3.2.3. Willingness to change group norm

Regarding participants’ willingness to change group norm, three questions were asked:

“To what extent do you think changing the group norm will enhance your group’s performance on the second round?” (1 = Not At All, 7 = Very Much), “To what extent do you think changing the group norm will harm your group’s performance on the second round?” (1 = Not At All, 7 = Very Much), “If your group has a chance to change the group norm before the second round, to what extent do you want to change the group norm?” (1 = Not At All, 7 = Very Much). Although the three questions measured different mechanisms, the three pairs of responses were correlated ($r_s = -.522, .630, -.594$, respectively), suggesting the appropriateness of a multivariate analysis.

A Type of Norm X Group Performance multivariate analysis of variance (MANOVA) showed that there is a significant effect of group performance on the three measures, Pillai’s Trace = .180, $F(3, 73) = 5.34, p < .01$. Neither of a main effect of Type of Norm nor an interaction was significant, $F$s < 1. A series of one-way analysis of variance of group performance on each of the three measures was conducted as follow-up tests to the MANOVA.
The results revealed significant effects of group performance on the second and the third measures. In specifically, participants in the Success condition \((M = 4.28, SD = 1.50)\) were more likely to think that changing the group norm will harm their group’s performance on the second round compared to those in the Failure condition \((M = 3.32, SD = 1.25)\), \(F(1, 79) = 9.73, p < .01\). It explains the result on the third question indicating that participants in the Success condition \((M = 2.85, SD = 1.72)\) did not want to change their group norm compared to the participants in the Failure condition \((M = 3.88, SD = 1.87)\), \(F(1, 79) = 6.62, p < .05\).

### 3.2.4. Willingness to accept a newcomer

Participants’ willingness to accept a newcomer was measured using three items: “If your group has a chance to bring a new member from the other group, to what extent do you want to accept the person to your group?” \(1 = \text{Not At All}, 7 = \text{Very Much}\), “If your group has a chance to bring a new member from the other group which has been using a different norm from your group, to what extent do you want to accept the person to your group?” \(1 = \text{Not At All}, 7 = \text{Very Much}\), “If your group has a chance to bring a new member from the other group which has been using a different norm from you or group, and if the person wants to change your group’s norm, to what extent do you want to accept the person to your group?” \(1 = \text{Not At All}, 7 = \text{Very Much}\). Responses were averaged to create a “willingness to accept a newcomer” score (Cronbach’s \(\alpha = .89\)).

A Type of Norm X Group Performance analysis of variance showed that neither main effects nor an interaction was significant, \(F < 1\).

### 3.2.5. Effect of individual choice

In the experiment, when the three norms were introduced, participants were asked to rank them by personal preference. The individual choices made at this phase could possibly motivate
participants to feel commitment to their decision regardless of which group norm was ultimately selected (see Festinger, 1957; Kiesler; 1971). Table 3.1 shows the frequency of individual choice among method A, B, and C. Pearson Chi-Square test revealed that there was no significant difference in the participants’ choice between the experimental conditions, suggesting that method itself did not affect participants’ perception of the group norm. Rather, whether they could use their most preferred method or less preferred method as a group norm could affect their perceptions and willingness to change the group norm.

**Perceptions of group norm.** A Type of Norm X Individual Choice analysis of variance was conducted for the Type of Norm manipulation check items in order to test participants’ perceptions of the group norm as a function of individual choice. The test yielded a significant main effect of Individual Choice. Participants who selected method B thought it would be more effective ($M = 5.91, SD = .90$) than those who selected other methods ($M = 4.71, SD = 1.24$) did, $F(1, 75) = 17.58, p < .01$. Participants who selected method B ($M = 5.43, SD = .95$) also thought that it would be more powerful compared to those who selected a different norm ($M = 4.26, SD = 1.35$), $F(1, 75) = 14.20, p < .01$. Participants who selected method B ($M = 5.78, SD = .80$) reported that they felt personally committed to the norm more than participants who did not select B ($M = 4.52, SD = 1.63$), $F(1, 75) = 13.02, p < .01$. They also reported that they personally agreed with the norm when they chose method B ($M = 6.22, SD = .85$) compared to when they chose other methods ($M = 4.38, SD = 1.60$), $F(1, 75) = 26.38, p < .01$. Neither an interaction effect nor a main effect of Type of Norm was significant.

**Perceptions of group performance.** To examine the effect of individual choice on participants’ perceptions of group performance, a Type of Norm X Group Performance X Individual Choice three-way analysis of variance was tested for the three items for manipulation
check of group performance. A main effect of Group Performance was significant on the three items. In other words, participants in the Success condition ($M = 5.58$, $SD = .04$) thought their group performed well compared to those in the Failure condition ($M = 3.05$, $SD = .87$), $F(1, 69) = 138.15$, $p < .01$. In addition, participants thought the norm was more effective when they were in the Success condition ($M = 5.32$, $SD = 1.00$) than when they were in the Failure condition ($M = 3.78$, $SD = 1.19$), $F(1, 69) = 28.91$, $p < .01$. The main effect also showed that participants in the Success condition ($M = 5.48$, $SD = .82$) reported they liked working in the group more than did those in the Failure condition ($M = 3.88$, $SD = 1.47$), $F(1, 69) = 28.95$, $p < .01$.

**Group identification.** A Type of Norm X Group Performance X Individual Choice analysis of variance on the group identification score yielded an interaction between Type of Norm and Individual Choice, $F(2, 69) = 3.32$, $p < .05$. When the Type of Norm was inherited, participants who selected method B ($M = 3.64$, $SD = .67$) showed lower group identification than those who selected something else ($M = 4.66$, $SD = .99$). No differences were found with a voluntary norm ($Ms = 4.50$ and 4.20 respectively) or institutional norm ($Ms = 4.24$ and 4.32 respectively) (see Table 3.2. and Figure 3.2).

**Willingness to change group norm.** A three-way analysis of variance was run on the items assessing willingness to change and it yielded a main effect of Individual Choice on the first question (“To what extent do you think changing the group norm will enhance your group’s performance on the second round?”), $F(1, 69) = 9.84$, $p < .01$. Participants who select Non-B ($M = 4.38$, $SD = 1.63$) were more likely to think that changing the group norm would enhance their group’s performance compared to those who selected B ($M = 3.09$, $SD = 1.51$).

**Willingness to accept a newcomer.** A three-way analysis of variance on the “willingness to accept a newcomer” score yielded marginally significant interaction effect
between Group Performance and Individual Choice, \( F(1, 69) = 3.84, p = .054 \). Simple main effects revealed that when participants received success feedback on their group performance, participants who selected method B as individual choice were more willing to accept a newcomer than those who did not select method B, \( F(1, 77) = 7.34, p < .01 \) (\( Ms = 4.94 \) and 3.78, respectively), while participants in the Failure condition did not, \( F(1, 77) = .82, ns \) (see Table 3.3 and Figure 3.3).

3.3. Discussion

The current study did not find the effect of type of norm development which was expected based on theoretical background and findings from Choi and Levine (2004) study. Considering the experimental setting in which participants do not see their “group members” at all throughout the experiment, the lack of effect of type of norm could result from the lack of feeling of “groupness”. In the Voluntary norm condition, especially, participants should perceive the group norm as their group’s collective decision. Without feeling of groupness, participants who selected method A or C as their individual choice would not consider the norm (method B) as determined by their group voluntarily. The effect of type of norm should be investigated again in a next study which employs a procedure to increase participants’ perception of groupness.

Even though feeling of groupness was not induced strongly enough, manipulation of group performance had significant influence on participants’ perceptions and intention. The results indicated that when participants received feedback that they succeeded in the first round of the task, they were more likely to think the group norm was effective compared when participants received negative feedback on their group performance. It confirmed earlier notion that group members would interpret success feedback as a sign that the current group norm is working appropriately and sufficiently for the current group task. The results also indicated that
when participants succeeded in the group task, they reported that they liked working in the group and showed higher group identification compared when participants failed in the task. Enhanced favor toward the group and group identification can be explained by social identity theory (Tajfel & Turner, 1979; 1986). According to social identity theory, once individuals become members of a group and internalize the group membership as part of their self-concepts, any value associated with the group affects their self-esteem and self-evaluation in a corresponding way. In an attempt to enhance self-esteem, people tend to identify themselves to the successful group while keeping their distance from the failed group (see Cialdini, Borden, Thorne, Walker, Freeman, & Sloan, 1976; Snyder, Lasagard, & Ford, 1986).

The current study also found that participants in the success condition were more likely to think that changing the group norm will harm their group’s performance in the upcoming round and less willing to change their group norm compared to those in the failure condition. This result supports the hypothesis of effect of group performance. When a group has succeeded in a task, any change will be perceived as a potential threat which interrupts and harms group process which currently has no problem to fix. Conversely, failure in the group task makes group members to think there is a problem to rectify to succeed in the upcoming task, resulting in increased necessity of changing the group norm. This pattern of results is consistent with the previous findings (Choi & Levine, 2004; Ziller & Behriger, 1960).

However, unlike the prediction, participants’ willingness to accept a newcomer did not significantly vary depending on the experimental conditions. Although participants in the Failure condition tended to show stronger willingness than those in the Success condition, the difference was not significant ($p = .102$). It does not support the previous notion that veteran members are more willing to accept a new member when they experienced failure (Choi & Levine, 2004;
Ziller & Behringer, 1960). The lack of the significant results may come from the weak feeling of “groupness”.

New members can be considered as possible threat because of their characteristics such as lack of knowledge and skills, and understandings of group norms and goals (Ziller, 1965). For those who identify with and care about their ingroup, bringing a new member can be an important issue which possibly affect group functioning. They may want to consider related factors such as the group’s current state as well as a possible role of the new member. However, if group members do not have strong identification with or commitment to the group, the influence of bringing a new member may not seem very significant to them unless the prospective member is expected to impede their individual performance. In the next study, it should be examined whether group members show different attitudes toward a potential new member depending on how they feel about their group and the group’s current state.

Lastly, in addition to the originally designed independent variables, I analyzed the effect of individual choice participants made before a certain method was determined as a group and found unexpected results. Participants who preferred method B at individual level considered the group norm (method B) as more effective and powerful and reported stronger personal commitment and agreement with the norm compared to participants who did not choose method B as their first preference. Considering the results from the pilot study showing that people showed similar preference among the three methods, participants’ positive feeling associated with method B should be derived by the feeling accompanying individual choice rather than by the method itself.

Interaction of the type of norm and individual choice indicated that in the Inherited norm condition, participants who selected method B showed lower group identification than those who selected other method, while this difference was not shown in the Voluntary norm condition and
the Institutional norm condition. This finding may result from a characteristic of inherited norms. Inherited norms, which resemble descriptive norms, “motivate by providing evidence as to what will likely be effective and adaptive action” (Cialdini et al., 1991, p. 203). Since an inherited norm indicates appropriate or correct behavior in a given situation, if a participant selected method B as his/her individual choice and heard that it was determined as a group norm because it has been used in this type of task, the manipulation of inherited norm confirms that he/she made a correct decision. This confirmation may lead him/her to believe that he/she is a capable individual who does not need to depend on other group members’ uncertain capabilities. Therefore, participants in the Inherited norm condition who selected method B individually could feel less interdependence and identification with their group compared to those who selected a “wrong” method.

Another interaction between group performance and individual choice was also found on participants’ willingness to accept a newcomer. When participants succeeded in the group task, participants who selected method B as individual choice were more willing to accept a newcomer than those who did not select method B were, while participants in the Failure condition did not show this difference. If participants attributed their group’s successful performance to the effective group norm, it is possible that participants who selected method B tended to believe that they were capable of selecting an effective way to work on the task and to evaluate their own contribution bigger than other group members. Conversely, participants who did not selected the “correct” method could possibly feel that they were not very capable of this type of task and their group performance somewhat depended on other group members’ capabilities. In the former situation, bringing a new member may not be very threatening because the participants believe that they can perform well regardless other members including the
newcomer. However, in the latter situation where participant do not have confidence with their own performance, adding a new member may be considered as a threat because the existence of newcomer may interrupt other members’ performance or because the newcomer may threaten their self-esteem by performing even better than them. The current study does not provide enough evidence to interpret this result. Therefore, further research should be conducted to investigate this mechanism.

It is important to note that in the current study, participants’ feeling of groupness was not strong enough to produce group-level perceptions and motivations. In a situation where group membership is salient, different result should be shown as a change in group process implies potential threat to successful group functioning and group members would be more motivated to defend their group’s positive identity.
CHAPTER FOUR
STUDY 2

4.1. Introduction

As discussed in the previous chapter, the lack of effect of type of norm could result from a weak manipulation of “groupness” in the experimental procedure. To induce a stronger feeling of groupness in the no interaction setting, a minimal group paradigm (MGP; Tajfel, Billing, Bundy, & Flament, 1971) was employed in Study 2. According to social identity theory (Tajfel & Turner, 1986), mere categorization of individuals into groups is enough to affect their perceptions of ingroup and outgroup as well as their behaviors. More specifically, merely being categorized as a member of a group can make an individual favor his/her own group while discriminating against outgroup members. A key idea of the minimal group paradigm is that when participants are assigned into groups according to unimportant categories such as preferences for modern painters or the results of a coin flip (cf. Diehl, 1990) or name of university (cf. Jetten, Spears, & Manstead, 1996), this trivial categorization still affects participants’ behaviors. In the current study, the minimal group paradigm was used to manipulate ingroup vs. outgroup situations and to examine whether this manipulation is strong enough to influence participants’ perceptions of the group norm.

4.2. Method

4.2.1. Participants

One hundred twenty three WSU students (22 males and 101 females) enrolled in introductory psychology classes participated in the study and got a research credit to help fulfill a course requirement. Out of 123 participants, six were excluded from analysis (one who discovered a deception in the procedure, four for failure to understand the instructions, and one
who left early due to a health problem), resulting in 117 participants (22 males and 95 females) in total for data analysis.

4.2.2. Design

As with Study 1, the experimental design was a 3(Type of Norm: Voluntary norm vs. Institutional norm vs. Inherited norm) X 2(Task Performance: Success vs. Failure) between-subjects factorial design.

Type of Norm was manipulated in the same way as in Study 1, by providing different explanations for how the norm (method B) was determined. A difference was made in the Voluntary norm condition though. To make participants in that condition believe that the other two group members each chose method for plausible reasons, along with the “group norm sheet”, participants received two other sheets of paper showing that the two other members ranked method B first (one member ranked method B, A, and C in order and the other member ranked method B, C, and A in order) and wrote specific reasons why they preferred method B to other methods. These sheets were in actuality made up by two research assistants in advance to control the effect of other members’ responses to participants.

Task Performance was manipulated in the same way as Study 1 by providing bogus feedback on participants’ performance on a first round of the task. In the Success condition, participants received feedback indicating that their group’s score on the first round was 85, while those in the Failure condition received a group score of 65.

As dependent measures, participants were asked if they want to change their group norm before starting a second round of the task and if they want to bring in a new member who wants to change the current norm.

4.2.3. Procedure
When six participants arrived, they were guided to sit in individual cubicles. After they read instructions, they were asked to indicate which TV show they prefer between “Glee” and “CSI”. After the experimenter collected their responses, she distributed ID cards which indicates participants’ ID number, group name (Glee team vs. CSI team), and member name (member A, B, or C). Although it was a trivial category, the perception that participants were assigned to a group based on their personal preference should be enough to induce participants’ feeling of groupness according to the minimal group paradigm (Tajfel et al., 1971). The rest of the procedure was identical to Study 1 except for the additional change in the manipulation of Voluntary norm condition.

Participants next filled out an “individual differences survey” consisting of three scales. They worked on the same practice task used in Study 1. A few minutes after the experimenter collected the practice task, the participants got a “group norm sheet” which indicated that method B was determined as their group norm either based on group members’ opinions (Voluntary norm condition), by the experimenter (Institutional norm condition), or because the method had been used in this type of studies (Inherited norm condition). As earlier described, in the Voluntary norm condition, participants received a chance to take a look at the other two group members’ reasons for choosing method B. To make this procedure more plausible, the experimenter collected participants’ own response and pretended to hand it to other group members.

Then, the participants were asked to fill out “Questionnaire 1” including questions which were developed for a manipulation check. “Information search task: Round 1” was given to the participants, and they were told to follow the group norm (method B: “Members divide the questions among themselves so that each person works on a few questions, but a member who
finishes quickly then helps other members.”) during task performance. Participants were told that each of the three members would work on one third of the 21 questions for 20 minutes, but in actuality, all participants were asked to work on the first seven questions. If they finished seven questions in 20 minutes, the experimenter asked them to cover the last two questions to help other members. On the other hand, if participants did not finish seven questions in 20 minutes, the experimenter told them that she will ask other members to cover the remaining questions. After collecting the first round of the task, the experimenter told the participants that she will evaluate the task and calculate a group score and asked them to fill out “Questionnaire 2” to measure their expectation and perceptions on their performance.

After five minutes, the experimenter gave a feedback sheet to the participants to provide bogus feedback on their group’s performance on the first round of the task. Depending on the conditions, participants were told their group did a good job (a group score of 85; Success condition) or a poor job (a group score of 65; Failure condition). Then, “Questionnaire 3” was given to measure willingness to change their group norm before working on the second round of the task and willingness to accept a new member who suggests changing the group norm. The participants also filled out “Questionnaire 4” to examine whether they were suspicious about deceptions used in the procedure. Lastly, they were debriefed and thanked.

4.3. Results

Before reporting what I have found, I would like to discuss potential limitation in this type of study. Although more individuals participated in Study 2 (117 used in analysis) than Study 1, 20 individuals per each experimental condition may not be enough to get powerful results. As well known among researchers, conducting a group study requires intense resources such as experimenters’ time to run each session with one group and space to bring participants to.
If one participant in a group shows an unexpected behavior affecting other participants in the group, data from the group cannot be included in data analysis. I tried to control this unexpected influence from individuals to others and collected as much data as I could within the restrictions. I think, though, with a bigger sample I could expect more powerful results.

4.3.1. Manipulation Check

Manipulation check of type of norm. A manipulation check for Type of Norm was assessed using five items: “To what extent do you think the norm will be effective?” (1 = Very Ineffective, 7 = Very Effective), “To what extent do you think the norm will be powerful?” (1 = Very Powerless, 7 = Very Powerful), “To what extent do you feel personally committed to this norm?” (1 = Not Committed At All, 7 = Very Committed), “To what extent do you personally agree with this norm?” (1 = Strongly Disagree, 7 = Strongly Agree), “To what extent do you think you will like working in your group?” (1 = Not At All, 7 = Very Much).

A one-way analysis of variance yielded a main effect of Type of Norm on the first question, $F(2, 114) = 3.38, p < .05$. Participants in the Inherited norm condition ($M = 5.59, SD = 1.09$) believed that the norm will be more effective than those in the Voluntary norm condition ($M = 5.18, SD = 1.25$) and Institutional norm condition ($M = 4.85, SD = 1.42$). A post hoc Tukey test showed that there was a significant difference between the Inherited norm condition and the Institutional norm condition at $p < .05$, but not in other pairs of comparison. Although the participants reported that they will like working in their group more in the Voluntary norm condition ($M = 5.21, SD = 1.11$) and Inherited norm condition ($M = 5.13, SD = 1.24$) than in the Institutional norm condition ($M = 4.69, SD = 1.42$), the difference was not statistically significant, $F(2, 114) = 1.88, p = .158$. There was no significant difference among the three conditions on the other three items, $Fs < 1$. 
Manipulation check of group performance. A manipulation check for Group Performance was assessed using three items: “To what extent do you think your group performed well in the first round?” (1 = Very Poorly, 7 = Very Well), “To what extent do you think the norm was effective when your group performed the task?” (1 = Very Ineffective, 7 = Very Effective), “To what extent did you like working in this group?” (1 = Not At All, 7 = Very Much).

A Type of Norm X Group Performance analysis of variance yielded a significant main effect of Group Performance on the first item, $F(1, 111) = 218.27, p < .01$. Participants in the Success condition ($M = 5.57, SD = .73$) reported that they performed well on the first round of the task compared to those in the Failure condition ($M = 3.28, SD = .95$). A pattern of interaction between Type of Norm and Group Performance on the first item did not reach statistical significance, $F(2, 111) = 2.295, p = .105$.

Analysis of the second item showed a significant main effect of Group Performance, $F(1, 111) = 69.50, p < .01$, indicating that participants in the Success condition ($M = 5.55, SD = .99$) thought the group norm was effective compared to participants in the Failure condition ($M = 3.85, SD = 1.20$). Neither an interaction effect nor a main effect of Type of Norm on the second item was significant, $Fs < 1$.

A two-way analysis of variance revealed two main effects on the third item. First, a main effect of Type of Norm was marginally significant, $F(2, 111) = 2.81, p = .064$, indicating that participants in the Voluntary norm condition ($M = 5.05, SD = 1.23$) and Inherited norm condition ($M = 4.82, SD = 1.49$) liked working in the group compared to participants in the Institutional norm condition ($M = 4.44, SD = 1.54$). A significant main effect of Group Performance indicated that participants in the Success condition ($M = 5.47, SD = 1.23$) reported that they liked working in the group compared to participants in the Failure condition ($M = 4.08, SD = 1.29$), $F(1, 111) =$.
37.27, \( p < .01 \). Interaction was not significant, \( F(2, 111) = 1.842, p = .163 \). Figure 4.1 shows similar pattern of participants’ responses on the first and third item.

### 4.3.2. Group Identification

As in Study 1, group identification score was calculated by averaging participants’ responses on the six items (Cronbach’s \( \alpha = .84 \)).

A Type of Norm X Group Performance analysis of variance revealed that a main effect of Type of Norm was marginally significant, \( F(2, 111) = 2.74, p = .069 \). Participants in the Voluntary norm condition (\( M = 4.67, SD = .90 \)) and in the Inherited norm condition (\( M = 4.64, SD = 1.07 \)) showed higher level of group identification than did participants in the Institutional norm condition (\( M = 4.33, SD = 1.14 \)). A main effect of Group Performance was significant, \( F(1, 111) = 78.37, p < .01 \). Participants who received success feedback (\( M = 5.20, SD = .88 \)) felt a higher level of group identification compared to those who received failure feedback (\( M = 3.90, SD = .76 \)). Interaction between Type of Norm and Group Performance was not significant, but the pattern was similar to one found on the group performance manipulation check items, \( F(2, 111) = 2.32, p = .103 \) (see Figure 4.2).

### 4.3.3. Willingness to change group norm

On the question “To what extent do you think changing the group norm will enhance your group’s performance on the second round?”, a Type of Norm X Group Performance analysis of variance revealed significant main effects of Type of Norm and Group Performance. Regarding the main effect of Type of Norm, participants were more likely to think that changing the group norm will enhance group performance on the second round when they were in the Institutional norm condition (\( M = 4.36, SD = 1.66 \)) compared to Inherited norm condition (\( M = 3.69, SD = 1.67 \)) or Voluntary norm condition (\( M = 3.41, SD = 1.60 \)), \( F(2, 111) = 3.75, p < .05 \).
A post hoc Tukey test showed that there was a significant difference between the Voluntary norm condition and the Institutional norm condition ($p < .05$), but other pairs were not significantly different. The main effect of Group Performance showed that participants were more likely to think that changing the group norm will enhance group performance when they failed in the first round ($M = 4.22, SD = 1.63$) than when they succeeded ($M = 3.41, SD = 1.64$), $F(1, 111) = 7.67, p < .01$. Interaction effect was not significant, $F < 1$.

On the second question “To what extent do you think changing the group norm will harm your group’s performance on the second round?”, a Type of Norm X Group Performance analysis of variance only revealed a significant main effect of Group Performance, $F(1, 111) = 9.67, p < .01$. Participants in the Success condition ($M = 4.26, SD = 1.54$) were more likely to think changing the group norm will harm their group performance on the next round compared to those in the Failure condition ($M = 3.34, SD = 1.64$). Neither a main effect of Type of Norm nor an interaction effect was significant, $Fs < 1$.

Lastly, a Type of Norm X Group Performance analysis of variance on the third question “If your group has a chance to change the group norm before the second round, to what extent do you want to change the group norm?” revealed main effects of Type of Norm and Group Performance. The main effect of Type of Norm indicated that participants in the Institutional norm condition ($M = 3.62, SD = 1.74$) wanted to change the group norm more willingly than participants in the Inherited norm condition ($M = 2.97, SD = 1.91$) and in the Voluntary norm condition ($M = 2.64, SD = 1.58$) did, $F(2, 111) = 3.43, p < .05$. A post hoc Tukey test showed that there was a significant difference between the Voluntary norm condition and the Institutional norm condition ($p < .05$), but not in other pairs. As expected, the main effect of Group Performance showed that participants in the Failure condition ($M = 3.51, SD = 1.73$) were
more willing to change the group norm than participants in the Success condition \((M = 2.64, SD = 1.74)\) were, \(F(1, 111) = 7.97, p < .01\). The interaction was not significant, \(F < 1\).

4.3.4. Willingness to accept a newcomer

As in Study 1, participants’ willingness to accept a newcomer was measured using three items: “If your group has a chance to bring a new member from the other group, to what extent do you want to accept the person to your group?” \((1 = Not At All, 7 = Very Much)\), “If your group has a chance to bring a new member from the other group which has been using a different norm from your group, to what extent do you want to accept the person to your group?” \((1 = Not At All, 7 = Very Much)\), “If your group has a chance to bring a new member from the other group which has been using a different norm from you or group, and if the person wants to change your group’s norm, to what extent do you want to accept the person to your group?” \((1 = Not At All, 7 = Very Much)\). Participants’ responses to the three items were averaged to create a “willingness to accept a newcomer” score (Cronbach’s \(\alpha = .74\)).

A Type of Norm X Group Performance analysis of variance yielded significant main effects of Type of Norm and Group Performance. The main effect of Type of Norm indicated that participants in the Voluntary norm condition \((M = 3.85, SD = 1.15)\) were less willing to accept a newcomer compared to participants in the Institutional norm condition \((M = 4.46, SD = 1.10)\) or in the Inherited norm condition \((M = 4.56, SD = 1.46)\), \(F(2, 111) = 3.90, p < .05\). A post hoc Tukey test showed that there was a significant difference between the Voluntary norm condition and the Inherited norm condition \((p < .05)\), but other pairs were not significantly different. The main effect of Group Performance showed that participants in the Failure condition \((M = 4.55, SD = 1.23)\) were more willing to accept a newcomer than those in the
Success condition \((M = 4.02, SD = 1.27)\) were, \(F(1, 111) = 5.60, p < .05.\) A pattern of interaction was not significant, \(F(2, 111) = 1.54, p = .219.\)

For an exploratory purpose, I combined the Institutional and the Inherited conditions together to create Involuntary norm, and compare it to the Voluntary norm condition. A Type of Norm (Voluntary vs. Involuntary) X Group Performance analysis of variance yielded a marginally significant interaction effect, \(F(1, 113) = 4.57, p = .079.\) Simple main effects show that when they failed, participants in the voluntary norm condition \((M = 3.83, SD = 1.17)\) were less willing to bring a newcomer than did those in the involuntary norm condition \((M = 4.91, SD = 1.10)\), \(F(1, 113) = 13.97, p < .01,\) while participants in the Success condition did not show the difference \((Ms = 3.86 and 4.10, \text{ respectively})\), \(F < 1\) (see Figure 4.3).

4.3.5. Effect of individual choice

As with Study 1, in the current study, participants were asked to make an individual choice among the three methods based on their personal preference. The effect of individual choice was expected to be somewhat reduced due to the increased sense of groupness, but it is still an interesting influence to look at.

Perceptions of group norm. A Type of Norm X Individual Choice analysis of variance was used to test participants’ perceptions of the group norm depending on their individual choice. The test yielded a significant main effect of Individual Choice, just as was found in Study 1. Participants who selected method B thought the norm (method B) would be more effective \((M = 5.80, SD = 1.02)\) than those who selected other methods \((M = 4.78, SD = 1.30)\) did, \(F(1, 111) = 19.56, p < .01.\) Participants who selected method B \((M = 5.53, SD = .96)\) also thought that the norm would be more powerful compared to those who selected Non-B \((M = 4.50, SD = 1.28)\), \(F(1, 111) = 21.92, p < .01.\) Participants who selected method B \((M = 5.55, SD = 1.31)\) reported
that they felt personally committed to the norm more than participants who did not select B ($M = 4.57, SD = 1.59$), $F(1, 111) = 12.01, p < .01$. They also reported that they personally agreed with the norm when they chose method B ($M = 6.41, SD = .76$) compared to when they chose other methods ($M = 4.29, SD = 1.61$), $F(1, 111) = 70.71, p < .01$.

A main effect of Type of Norm was marginally significant on the perception of effectiveness of norm (first question), indicating that participants in the Inherited norm condition ($M = 5.59, SD = 1.09$) and in the Voluntary norm condition ($M = 5.18, SD = 1.25$) thought the norm was more effective than those in the Institutional norm condition ($M = 4.85, SD = 1.42$) thought, $F(2, 111) = 3.00, p = .054$. Other effects were not significant.

**Perceptions of group performance.** To examine the effect of individual choice on participants’ perceptions of group performance, a Type of Norm X Group Performance X Individual Choice three-way analysis of variance was conducted for the three items on the manipulation check for group performance. On the first question “to what extent do you think your group performed well in the first round?”, only a main effect of Group Performance was significant, $F(1, 105) = 200.16, p < .01$. On the second question “To what extent do you think the norm was effective when your group performed the task?”, the main effect of Group Performance was significant as expected, $F(1, 105) = 73.04, p < .01$, as was the main effect of Individual Choice, $F(1, 105) = 10.83, p < .01$. In other words, participants who selected method B ($M = 4.98, SD = 1.36$) thought the norm was more effective than did those who selected Non-B ($M = 4.49, SD = 1.39$).

A three-way analysis of variance on the last question “To what extent did you like working in this group?” yielded significant main effects of Group Performance and Individual Choice. The main effect of Group Performance showed that participants who succeeded in the
first round of the task ($M = 5.47$, $SD = 1.23$) liked working in the group more than did those who failed in the first round ($M = 4.08$, $SD = 1.29$), $F(1, 105) = 38.89$, $p < .01$. The main effect of Individual Choice indicated that participants who selected method B ($M = 5.00$, $SD = 1.43$) liked working in the group more than did participants who selected another method ($M = 4.60$, $SD = 1.43$), $F(1, 105) = 4.68$, $p < .05$. More interestingly, the two-way interaction between Type of Norm and Group Performance was marginally significant, $F(2, 105) = 2.48$, $p = .089$. According to post hoc tests, participants’ tendency to dislike working on their group differed depending on how the group norm was developed only when they failed, $F(2, 56) = 4.73$, $p < .05$. More specifically, participants were less likely to like working in their group in the Institutional norm condition ($M = 3.42$, $SD = .96$) compare to the Voluntary norm condition ($M = 4.60$, $SD = 1.27$) or the Inherited norm condition ($M = 4.20$, $SD = 1.36$). A post hoc Tukey test showed that there was a significant difference between the Voluntary norm condition and the Institutional norm condition at $p < .05$, but not in other pairs of comparison. This difference did not appear when the participants succeeded, $F < 1$ (see Table 4.1 and Figure 4.4). Also, the two-way interaction between Type of Norm and Individual Choice was marginally significant, $F(2, 105) = 2.70$, $p = .072$. Post hoc tests showed that participants in the Inherited norm condition were more likely to report that they liked working in the group when they selected method B ($M = 5.50$, $SD = 1.34$) than when they selected other method ($M = 4.24$, $SD = 1.38$), $F(1, 37) = 8.36$, $p < .01$. However, this difference depending on individual choice was not shown in the Voluntary norm condition ($Ms = 5.00$ and 5.09, respectively) and in the Institutional norm condition ($Ms = 4.40$ and 4.46, respectively), $Fs < 1$ (see Table 4.2 and Figure 4.5).

**Group identification.** A Type of Norm X Group Performance X Individual Choice analysis of variance on the group identification score yielded significant main effects of Type of
Norm and Group Performance. It also produced a marginally significant main effect of Individual Choice, $F(1, 105) = 3.33, p = .071$. Participants who selected method B ($M = 4.64, SD = 1.11$) reported higher group identification score than did those who select another method ($M = 4.48, SD = 1.00$). A two-way interaction between Type of Norm and Group Performance was also marginally significant, $F(2, 105) = 2.55, p = .083$. The pattern of interaction was the same as shown in Figure 4.2. Post hoc tests showed that when the participants failed, participants in the Institutional norm condition ($M = 3.43, SD = .38$) reported lower group identification than those in the Voluntary norm condition ($M = 4.18, SD = .66$) and in the Inherited norm condition ($M = 4.08, SD = .93$), $F(2, 56) = 6.58, p < .01$. A Tukey post hoc test revealed that there is significant difference between a pair of the Institutional norm condition and the Voluntary norm condition as well as a pair of the Institutional norm condition and the Inherited norm condition at $p < .05$, but not in other pairs of comparison. This difference in group identification depending on the Type of Norm did not appear when the participants succeeded, $F < 1$.

**Willingness to change group norm.** A three-way analysis of variance on the first item “To what extent do you think changing the group norm will enhance your group’s performance on the second round?” yielded significant main effects of Type of Norm and Group Performance ($ps < .05$). The main effect of Individual Choice was marginally significant, indicating that participants who selected non-B ($M = 4.03, SD = 1.68$) were more likely to think changing the group norm will enhance their group performance than were participants who selected method B ($M = 3.53, SD = 1.66$), $F(1, 105) = 3.57, p = .062$. The three-way interaction was marginally significant, $F(2, 105) = 2.76, p = .068$. As post hoc tests, a Group Performance X Individual Choice two-way analysis of variance was conducted for each of three types of norm. In the Voluntary norm condition, neither main effects nor a two-way interaction was significant, $ns$. In
the Institutional norm condition, only a main effect of Group Performance was marginally significant, $F(1, 35) = 3.28, p = .079$. When the norm was assigned by the experimenter, participants were more likely to think that changing the group norm will enhance group performance when they failed ($M = 4.89, SD = 1.33$) than when they succeeded ($M = 3.85, SD = 1.81$). Lastly, in the Inherited norm condition, a two-way interaction between Group Performance and Individual Choice was marginally significant, $F(1, 35) = 3.62, p = .065$. Simple main effects showed that when participants received success feedback on group performance, participants who selected method B as individual choice ($M = 2.56, SD = 1.42$) were less likely to believe that changing the group norm will enhance their group performance than were those who did not select method B ($M = 4.00, SD = 1.56$), $F(1, 35) = 3.63, p = .065$, while participants in the Failure condition did not show this difference ($Ms = 4.33$ and $3.82$, respectively), $F < 1$ (see Table 4.3 and Figure 4.6).

On the second item “To what extent do you think changing the group norm will harm your group’s performance on the second round?”, a three-way analysis of variance yielded main effects of Group Performance and Individual Choice ($ps < .01$). The main effect of Individual Choice showed that participants who selected method B individually ($M = 4.27, SD = 1.59$) were more likely to think changing the group norm will harm their group performance on the second round than did those who did not select method B ($M = 3.46, SD = 1.62$), $F(1, 105) = 10.60, p < .01$. More importantly, a two-way interaction between Type of Norm and Individual Choice was significant, $F(2, 105) = 4.76, p < .05$. As post hoc tests, a one-way analysis of variance was conducted for each of three types of norm. When the group norm was assigned by the experimenter, participants who chose method B ($M = 5.00, SD = 1.13$) tended to think that changing the group norm will harm their group performance compared to those who did not
choose B ($M = 3.00, SD = 1.38$), $F(1, 37) = 22.04, p < .01$. This difference depending on participants’ individual choice was not significant in the Inherited norm condition ($Ms = 4.33$ and 3.57, respectively) and in the Voluntary norm condition ($Ms = 3.50$ and 3.83, respectively), $ns$ (see Table 4.4 and Figure 4.7).

On the last question asking participants’ willingness to change group norm, a three-way analysis of variance yielded a marginally significant main effect of Type of Norm, and significant main effects of Group Performance and Individual Choice. The main effect of Type of Norm indicated that participants in the Institutional norm condition ($M = 3.62, SD = 1.74$) were more willing to change their group norm compared to participants in the Inherited norm condition ($M = 2.97, SD = 1.91$) and in the Voluntary norm condition ($M = 2.64, SD = 1.58$), $F(2, 105) = 2.65, p = .075$. The main effect of Group Performance showed the consistent pattern that participants who failed in the first round ($M = 3.51, SD = 1.73$) were more willing to change the group norm than those who succeeded ($M = 2.64, SD = 1.74$) were, $F(1, 105) = 9.25, p < .01$. Lastly, the main effect of Individual Choice showed that participants who selected non-B individually ($M = 3.41, SD = 1.81$) reported stronger willingness to change the group norm than participants who selected method B ($M = 2.61, SD = 1.64$) did, $F(1, 105) = 7.42, p < .01$. A pattern of three-way interaction was not significant, $F(2, 105) = 1.51, p = .226$. None of two-way interactions were significant, $Fs < 1$.

**Willingness to accept a newcomer.** A three-way analysis of variance on the willingness to accept a newcomer score yielded significant main effects of Type of Norm, Group Performance, and Individual Choice. The main effect of Type of Norm indicated that participants in the Voluntary norm condition ($M = 3.85, SD = 1.15$) were less willing to accept a newcomer compared to participants in the Institutional norm condition ($M = 4.46, SD = 1.10$) or in the
Inherited norm condition ($M = 4.56, SD = 1.46$), $F(2, 105) = 3.79$, $p < .05$. A Tukey post hoc test showed that the difference between the Voluntary norm condition and the Inherited norm condition was significant at $p < .05$ while the difference between the Voluntary norm condition and the Institutional norm condition was marginally significant, $p = .061$. The main effect of Group Performance showed that participants in the Failure condition ($M = 4.55, SD = 1.23$) were more willing to accept a newcomer than those in the Success condition ($M = 4.02, SD = 1.27$) were, $F(1, 105) = 7.34$, $p < .01$. Also, the main effect of Individual Choice revealed that participants who selected Non-B ($M = 4.51, SD = 1.27$) reported stronger willingness to accept a newcomer than those who selected method B ($M = 3.98, SD = 1.21$) did, $F(1, 105) = 6.20$, $p < .05$. A pattern of three-way interaction was not significant, $F(2, 105) = 1.52$, $p = .219$.

4.4. Discussion

Likewise with Study 1, Study 2 found that feedback on group performance affected group members’ perceptions and willingness to change a group norm, which supported the hypothesis of main effect of group performance. When the participants failed, they reported they did not like working in the group and showed weaker group identification compared to those who received success feedback. Also, while the participants in the Success condition thought changing the group norm will harm group performance, those in the Failure condition thought changing the group norm will enhance group performance in the next trial. As a result, the participants who received failure feedback were more willing to change the group norm and bring a newcomer.

These findings correspond with the notion that individuals are motivated to maintain their positive self-concept and enhance self-esteem by identifying with positive group identity while distancing from negative group identity (see Cialdini et al., 1976; Snyder et al., 1986). The results also imply that group members tend to have different motivation to pursue a goal.
depending on how they performed a group task. According to regulatory focus theory, individuals who have a promotion focus tend to focus on hopes and accomplishments (gains) while those who have a prevention focus tend to emphasize safety and responsibilities (non-losses) (Higgins, 1997). Although the goal – good performance – was same, the way how to pursue the goal could vary depending on whether a group succeeded or failed. It is possible that successful experience on the group task performance could arouse group members’ prevention focus by motivating them to maintain their good performance and not to lose it. They could believe that everything was going well and did not want to change anything – including the group norm and group composition – to maintain their good performance. On the other hand, when participants failed, they could become promotion-focused as they were motivated to enhance their poor performance. They may feel that something was not correct and want to change something in hopes that the change would improve their group performance.

As found in previous studies, a newcomer could be perceived as a potential threat which interrupts ongoing positive group process in the Success condition while the same target could be considered as an opportunity to rectify problematic group process in the Failure condition (Choi & Levine, 2004; Ziller & Behringer, 1960). In Study 1, feedback on group performance did not induce significant difference in their willingness to accept a newcomer between the experimental conditions. In the following discussion, I interpreted that the lack of significant difference may be due to the lack of strong feeling of “groupness” and that the participants may underestimate influence of bringing a new member to the group. In Study 2, with the implementation of minimal group paradigm, I could find significant difference between the two conditions. Findings from a previous study conducted by Zander and colleagues support my argument that the feeling of groupness explains the difference between the two studies (Zander, Stotland, &
They found that participants showed increased or decreased levels of self-esteem following their group’s success or failure only in cohesive groups. Group members in non-cohesive groups did not show this change. In the same manner, feedback on group performance could strongly affect participants in Study 2 in which feeling of groupness was manipulated with the minimal group paradigm while the influence was relatively weak in Study 1.

Study 2 also found that the way how a group norm was developed affected group members’ perceptions and motivation, unlike the lack of significant result in Study 1. A pattern of results in the Institutional norm and in the Voluntary norm condition supported the hypothesis as well as the findings in Choi and Levine’s (2004) study. When the norm was introduced by the experimenter with no plausible reason (Institutional norm), the participants reported that they did not like working in the group as much as other conditions and showed relatively low group identification. They thought changing the group norm will enhance group performance in the future and were more willing to change the group norm compared to when the norm was developed by the group members (Voluntary norm condition) or when the norm was selected because it had been used in the similar task (Inherited norm condition). Lastly, as predicted by the hypothesis of main effect of type of norm, participants in the Voluntary norm condition were less willing to accept a newcomer than those in the Institutional norm and the Inherited norm conditions.

It is obvious that when the norm was enforced by the experimenter with no reasonable explanation, participants could feel resistance to the norm, disagree with the group norm, and evaluate it negatively. Therefore, participants in the Institutional norm condition could be more willing to get an opportunity to discard the unfavorable group norm and to restore their freewill. When the group members believed they developed the group norm voluntarily, on the other hand,
when group members developed the group norm by themselves, they could feel commitment and responsibility for the norm and want to stick to it. Researchers found that the more cohesive the group, the stronger group members confirmed to the group norm (Festinger, Schachter, & Back, 1950). This finding is also corresponding with the notion of groupthink which suggests that in cohesive groups group members feel more pressure for unanimity (see Janis, 1982). If the collective decision making process in the Voluntary norm condition made group members commit to the group and increased group cohesion, group members could feel strong pressure and motivation to assimilate to the group while keeping vigilant about a potential threat to the group consensus such as bringing a new member.

Interesting pattern was found in the Inherited norm condition which was not included in Choi and Levine’s (2004) study. Unlike my prediction, participants in the Inherited norm did not want to change the group norm. However, at the same time, they were not reluctant to bring a new member to the group compare to those in the Voluntary norm condition, as I expected. Although participants in the Voluntary norm condition and the Inherited norm condition showed similar level of intention of not changing the group norm, the underlying mechanisms may not be same. In the Voluntary norm condition, participants could feel group-level commitment to the group norm which was determined based on group members’ opinions. This enhanced commitment could lead them to stick to their current group norm. On the other hand, participants may not want to change the inherited group norm because it was considered as a correct way to work on the group task. This result is consistent with the notion of descriptive norms in that people tend to believe that descriptive norms provide information about appropriate and correct behaviors in a given situation. This idea is also supported by the result showing that participants expected that the norm will be most effective when the norm was introduced as a commonly
used one from the past (Inherited norm). The different mechanisms seem accordance with the notion of normative influence and informative influence of group norms (Deutsch & Gerard, 1955). As normative influence, group members may want to conform and stick to a voluntary norm because they do not want to be a minority who disagrees with the other group members and be disliked. On the other hand, group members may want to use and maintain an inherited norm because they believe that the norm is an appropriate way to behave when they have no experience in a new task. Since the only reason why they followed the group norm and wanted to stick to it was its informational value, they may not feel personal commitment or responsibility for their group. As a result, bringing a new member may not a significant threat to them unlike those who had developed their own group norm.

Although interaction between the Type of Norm and Group Performance was not significant, the exploratory analysis which combined the Institutional norm and the Inherited norm conditions showed a marginally significant result which supports my interpretation. When a norm was determined by the group members, they were less willing to accept a newcomer even they failed, while when the norm was determined involuntarily – either by the experimenter or as a commonly used method - this difference did not appear. This pattern of interaction corresponds with previous findings. Individuals’ tendency to assimilate themselves to the group remains strong even after failure if they feel responsibility for their own decision (see Festinger, 1957). According to Turner and colleagues, when individuals feel personal responsibility for their behavior such as voluntarily choosing to join a group, even after experiencing a negative consequence following the behavior, they will increase their group identification to justify their behavior (Turner, Hogg, Turner, & Smith, 1984).
Finally, even though minimal group paradigm employed in Study 2 was efficient to produce feeling of groupness among participants, effect of individual choice seemed to play a role in participants’ perceptions and intentions. Considering the experimental setting in which participants stayed in separate rooms with no face-to-face interaction, it is possible that the individual choice could remain salient even participants were working in a group task. Main effects of individual choice showed that when participants chose method B as individual choice, they tended to evaluate the group norm and their experiences of working in the group more positively and reported higher level of group identification. Hogg (1992) suggested that people are attracted to a group whose prototypical member is corresponding to them. In other words, the more similar people perceive themselves to the prototypical member of a group, the more they want to join the group. Considering this suggestion, participants who chose method B could perceive themselves similar to the prototypical member of group whose norm is determined as method B and feel attracted to the group. Study 2 also found that participants who did not select method B thought changing the group norm will enhance group’s future performance while those who selected method B thought changing the group norm will harm their group’s task performance. Lastly, participants who did not choose method B were more willing to change the group norm and accept a newcomer. This result implies that group members who disagree with the current group norm seek a chance to change it and are willing to make a change when they get a chance.

In addition to the main effect of individual choice, interesting patterns of interactions were found. The three-way interaction showed that when the commonly used method was selected as a group norm, after receiving success feedback participants who individually selected method B were less likely to believe that changing the group norm will enhance their group
performance than those who chose other method individually. There was no difference depending on individual choice when they failed. For those who individually chose method B, the fact that their group would use this method because it had been used in the similar tasks may confirm that they knew the correct way to work on the task. In addition, success feedback may make them think that the method they first chose was the best way, and there is no way to improve group performance with using other method. Lastly, the two-way interaction between type of norm and individual choice showed that participants who chose method B tended to think that changing the group norm will harm their group performance compared to those who did not choose B only when they were in the Institutional norm condition. There are two possible explanations. First, it is possible that the effect of individual choice was canceled off when participants who did not select method B were told that method B was determined as their group norm because other two members chose it or that method B had been used in similar group task, implying the normative or informative value of the norm. The other explanation is that even the enforced norm could be relatively easily internalized to those who already chose method B individually with less psychological resistance compared to those who had to follow the norm they did not like.

With closing this discussion, I want to lastly discuss potential limitation in Study 2. Unlike strong main effects, most of expected interactions were marginally significant or even weaker. However, I believe that the lack of strong interactions is due to a power issue rather than logic or design issues. As I mentioned at the beginning of the results section, group research requires intense resource including time and space in data collection compare to individualized surveys which have relatively less restrictions. By increasing the number of participants, I expect I would enhance the power of results and get stronger interactions.
CHAPTER FIVE

GENERAL DISCUSSION

5.1. Summary of Findings

The current study examined group members’ willingness to change their group norm as a function of type of norm development and group task performance. More specifically, it was expected that group members would show different degrees of willingness to change their current group norm depending on how their group norm was determined and how they performed a group task. To test this idea, participants were made to believe that they were working on a group task as a member of a three-person group while they were staying in separate rooms with no face-to-face interaction throughout the experiment session. Participants received instruction on three methods for working on the group task and were made to show their preference for the three alternatives. Depending on the experimental conditions, one of the methods was determined as a group norm either based on group members’ preferences (Voluntary norm condition), by the experimenter with no reason (Institutional norm condition), or by the experimenter because the method had been used in the similar research studies (Inherited norm condition). After participants worked on the group task with using the group norm, half of them received success feedback, while the other half received failure feedback. Participants’ willingness to change their group norm and accept a newcomer was measured.

A hypothesized main effect of type of norm expected that people will be less likely to want to change their current group norm when it was chosen from group member preferences than when it was enforced by an experimenter or was inherited from similar studies. Study 1 did not find this effect, possibly due to the lack of groupness within the experiment setting. In Study 2, a minimal group paradigm was introduced to induce feelings of groupness among participants,
and the hypothesis was partially supported. Of greater interest, participants who used the inherited norm felt high group identification and did not want to change their group, but they were not reluctant to accept a new member to the group who did want to change the norm. This suggests that there were different mechanisms working in the Inherited norm condition. Unlike the voluntary norm which motivated participants to commit their group and to attain group consensus, the inherited norm made participants believe that they were working in an appropriate way. Therefore, those who were using the appropriate method may not feel necessity of distancing themselves from their group or discarding the correctly working norm. At the same time, however, they may not consider a newcomer as a threat to the group identity or group task performance, as long as they can keep using the correct method. Table 5.1 presents mean and standard deviations of group identification, willingness to change group norm, and willingness to accept a newcomer depending on the type of norm conditions.

In Study 1 and Study 2, the expected effect of group performance was significant. Participants who succeeded in the first round of the group task reported higher group identification and lower willingness to change the group norm and accept a newcomer than did participants who received failure feedback. This result confirms the notion that people tend to assimilate themselves to a successful group while distancing them from a failed group to maintain their positive self-concept and self-esteem. In addition, as found in previous studies (Choi & Levine, 2004; Ziller & Behringer, 1960), group members did not want to make any change in either the way they work or group composition when they believed their group functioned well. On the contrary, when group members believed that “something is not working okay”, they tended to try some changes such as changing their group norm or group composition to rectify problematic group functioning.
Unlike my prediction, the interaction between type of norm and group performance was not significant. The lack of a strong interaction effect may have come from the experimental paradigm under which participants did not have a chance to actually see and interact with their “group members”. According to the hypothesized interaction effect, the effect of collective decision making on the group norm in the Voluntary norm condition should be strong enough to cancel out the effect of failure feedback, making participants stick to their group norm. In the current study, however, the voluntary norm was announced by the experimenter who collected individual members’ preferences and found majority of group members preferred method B without actual group decision making process. This procedure may have made the manipulation of voluntary norm not strong enough to overwhelm the effect of group failure. Another possible explanation for the lack of a significant interaction effect is, as earlier mentioned, the power issue related to the limitation of group research. Since the marginally significant interaction was in line with my prediction in the hypothesis, increasing sample size may strengthen the effect.

Lastly, an unexpected effect of individual choice also provided interesting findings. In general, participants showed positive evaluation of their group and group norm when the selected group norm was consistent with their individual preference. It seems that the consistency between individual choice and group norm has different influences on participants depending on how the group norm was determined. Specifically, in the Voluntary norm condition, this consistency meant that all three group members had same preferences, implying similarities and homogeneity among group members. However, in the Inherited norm condition, the fact that participants’ individual choice of method B matched with the inherited norm meant that they were capable of identifying correct way to work on the group task regardless of other group members’ choice. Even though the task was interdependent, the group norm - method B -
allowed a competent group member to help other members if they could not complete their own parts. Therefore, those who individually chose method B which was actually found as a commonly used method could feel that they know how to work on the task and they were capable of helping other members who may not know as well as them. Lastly, in the Institutional norm condition, participants who individually selected method B may feel less resistance to the enforced group norm compared to those who preferred other method because the enforced group norm reflects their personal preference after all. These contrary mechanisms should be further examined.

5.2. Implications, Limitations, and Future Directions

The current study has a number of theoretical and empirical implications. Firstly, considering that there has been only a little research on group norms, the current study made an important attempt to understand psychological mechanisms of norms in small work groups. As some scholars have pointed out, there has been serious imbalance among research topics related to groups in social psychology and adjacent disciplines (cf. Moreland, Hogg, & Hains, 1994; Sanna & Parks, 1997). The researchers found that some intragroup topics such as group structure, group composition, and ecology of groups were not studied enough despite the theoretical and empirical importance those areas have. In spite of interesting implications found from early studies on conformity and social influences, a lot of important aspects of group norms have been left aside. Findings from this study are meaningful in that they provide ideas to understand specific circumstances in which individuals want to change their group norms in small work group. The current study also demonstrated that the minimal group paradigm was enough to produce feeling of groupness in research on group norms. Since proposed, the minimal group paradigm has been mostly used in research on intergroup relations (Tajfel et al., 1971). Although
participants in the current study were led to believe that there was another group working on the same task, measures were focused on intragroup phenomena group structure change rather than intergroup behaviors. It will be still interesting to compare the minimal group paradigm to face-to-face interaction and examine whether the effect of type of norm and group performance differs between two settings.

Findings from the current study also provide insight into the circumstances under which small groups fail to change and innovate. The topic has received some attention in sociology, but little in psychology. As indicated in Study 2, people who established the group norm by themselves tended to adhere to the norm regardless of the outcome of group task performance. If it further implies that members of cohesive groups are more likely to cling to their own group norms, it is not difficult to imagine why closed religious cult groups maintain their own norms which often contradict social norms. On the other hand, it was found that people who followed the inherited norm tended to think it would be effective and wanted to continue to use it in the future. Although an inherited norm, or “descriptive norm”, has informative value in that it provides a guideline for appropriate behaviors when people are not certain of what to do, it also can produce a sense of inertia in the long term. Research on inertia has mostly been conducted at an organizational level in management (cf. Hannan & Freeman, 1984), but there is apparently no research on work group inertia in ad-hoc groups. Findings from the current study suggest there may be group-level inertia in ad-hoc groups, especially when groups have successful experiences. In Study 2, participants who received success feedback were more likely to think that changing the norm will harm their performance on the upcoming task and to stick to the current group norm. Considering that the success feedback in this study was a score of 85 out of 100, the successful groups’ performance was not as good as a perfect score. Despite a chance of getting
better score by using a different method, they were somewhat satisfied with their current level of performance and wanted to maintain the present state. This tendency seems natural as satisficing principle suggests. According to satisficing principle, instead of searching for and examining all possible alternatives to make a best decision (maximizing), individuals tend to stop searching for alternatives when they find a satisfactory alternative which meets aspiration levels (Witteloostuijn, 1988). According to this perspective, once individuals adopt the alternative, it becomes a routinized behavior they want to keep using in the same situation. Considering that people have limited time and resource, satisficing principle works efficiently in most cases. For example, Robyn Dawes argued that false consensus effect, which is considered as a bias to believe others will think and behave like one, is actually a good and efficient way to understand appropriate behaviors in most social situations because an individual’s perception of others is most likely correct (Dawes, 1990). The person does not need to know what every single person think and behavior; it is even impossible and unrealistic. Instead, it may be a wiser strategy to adopt a commonly observed behavior by others in the situation or a behavior the person usually did in similar situations in the past, which seems good enough for the current situation. In the same way, in groups which potentially have complex and dynamic nature, once group members find a norm which is good enough for the group in the current situation, it can be much safer and more effective to stick to the current state than to keep searching for other alternatives. As far as environments around the group do not change, the routinized norm may guarantee “good enough” outcomes. However, in the long term, inertia derived from the routinized process may become a serious problem if groups fail to recognize the time to change. As researchers who studied organizational inertia suggested, inertia can help groups and organizations to succeed in stable markets, but when markets shift very fast inertia can be a huge barrier to change in response to
changing environments (Tushman & O’Reilly, 1996). As found in the examples such as IBM and General Motors, when organizations stuck in inertia and failed to recognize the shifting markets and customers’ rapidly changing tastes, they could not survive from competition (Achrol, 1991; Tushman & O’Reilly, 1996). The current study provides cues to understand inertia in small ad hoc groups which have not been examined so far. As a future research idea, it will be interesting to provide various levels of performance feedback (Very good, good, average, poor, and very poor) and examine to what extent to group members will be satisfied with their outcome and not trying to change their group norm. Then, I can observe how the group members react when they are faced with similar, slightly different, or totally different task situation.

Meanwhile, even though the current study suggests important implications, some limitations remained in the experiments. First, there was no face-to-face interaction among group members. Although participants heard that this study was investigating virtual groups with no face-to-face interaction among group members, the setting could be still artificial considering that participants in this study, as college students, were not familiar with working in groups with no face-to-face or “voice-to-voice” interaction. Some participants actually left a comment that it was somewhat odd that they could not see their group members on the last questionnaire which included a suspicion question. Actual interaction among group members may increase the effect of type of norm found in the current study as well as strengthen interaction effect which was not significant. Specifically, if direct interaction among group members increases their commitment to the group norm they have developed collectively, the effect of voluntary norm may become strong enough to cancel out the effect of failure and make them to stick to the group norm. Some findings from previous studies seem in line with this prediction. For example, Bouas and Arrow (1996) found that group members in computer-mediated groups show lower group identification
than those in face-to-face groups. Also, Cappel and Windsor (2000) found that although face-to-face groups and computer-mediated groups did not differ in quality of outcome after group decision making process, group members in face-to-face groups showed quicker decision making and stronger group consensus than computer-mediated groups. However, it seems rather premature to make a conclusion without further research considering different perspectives on normative influence in computer-mediated groups, followed by conflicting findings (see Sassenberg & Boos, 2003). There has been an argument that computer-mediated communication provides less social cues, and group members in computer-mediated groups are less likely to concern about societal norms than those in face-to-face groups (Kiesler, Siegel, & McGuire, 1984; Kiesler & Sproull, 1992). On the other hand, the opposite perspective argues that when social identity is salient, anonymity in computer-mediated groups makes social identity of individual members even stronger than face-to-face groups which provide ample information of individuals, leading to higher conformity to the ingroup norm in anonymous groups (Spears & Lea, 1992). Future research should follow to examine if voluntary group norms have stronger influence in face-to-face groups than in virtual groups. Lastly, based on similar logic, the manipulation of institutional could be somewhat artificial. Although it is possible for work groups to have group norms which are assigned or enforced by group leader, boss, or a third party such as clients, there may be explanations for the enforced norms with different level of concreteness. Further research can vary the source of institutional norm and compare the effect of the norm and to what extent to group members feel resistant to the norm.

In this study, inherited norm was manipulated by telling participants “method B was determined as your group norm because this method has been used in this type of studies.” Since there was lack of continuity in group membership among experimental participants, the inherited
norm was considered as a rational criterion to refer to without personal commitment. However, internally derived inherited norm which was developed and passed down within ingroup should induce not only informative value but also personal commitment. According to the perspective that not only current members but also ex-members who no longer belong to the group have influence the group (see Levine & Moreland, 1991; Moreland & Levine, 1982), group norms which were developed by former group members who left should still affect the group in direct or indirect ways. If current group members strongly identify with the group, they may think that the group norms were chosen by “us” even though they did not involve in the process of norm development directly. At the same time, they may think that the group norms provide them guidance on appropriate behaviors in the group which will eventually lead them to successful outcome. It is an interesting idea to examine if internally generated inherited norm has stronger influence on group members’ perceptions and behaviors than does general-level of inherited norm.

Although strong main effects of type of norm and group performance on participants’ perceptions and intentions were found, the current study did not measure their actual behaviors. Future research is needed to examine whether people actually change their group norm voluntarily. Furthermore, it will be interesting to observe how hard people work on the second round of the task depending on whether they decided to stick to the norm or change the norm. Both directions of results seem plausible; group members who did not change the norm may try hard because they cannot blame the norm any longer, or at the same time, group members who changed norm may work hard because they feel pressure to take responsibility for their action of changing the norm. Future research also needs to examine participants’ behavioral reactions toward a new member. In the Voluntary norm condition and the Institutional norm condition,
veteran members’ reactions such as whether they accept a newcomer’s suggestion to change the group norm should correspond with findings from Choi and Levine (2004) study. In the Inherited norm condition which was not included in the previous study, a newcomer’s level of knowledge may play a role. Since the inherited norm is perceived as a correct way to work on the task by veteran members who were not familiar with the given task at first, if the new member is more experienced in the same type of task and knows how to work on it, the newcomer’s suggestion will be preferred over the current inherited norm.

As mentioned in the discussion part of Study 2, participants in the current study tended to be reluctant to change group norm in general. This strong tendency may be due to individuals’ motivation for consistency or fear of uncertainty associated with change. It is also possible that participants in the current study did not consider their outcome of group performance very seriously. By varying factors such as importance of a group goal, difficulty level of group task, history of group members’ interactions, or information about alternative norms, future research needs to examine why people want to change their group norm as well as whey they do not want to under certain circumstances.

Lastly, in the current study only one type of norm was given to participants. Regarding the manipulation of the type of norm, what if participants are informed of different types of norms which are in conflict at once? In the current study, the other two members’ “fabricated” personal preferences among the three methods were told only in the Voluntary norm condition. In the Institutional norm condition and the Inherited norm condition, participants did not receive any information about other group members’ opinions. If conflicting norms are presented at the same time, which one would people prefer? For example, if a participant notices that his/her group members like method A but hears that method B has been used in the similar tasks, which
one would he/she prefer as a group norm? It may depend on many factors such as his/her own personal preference, group identification or cohesion level, other members’ experiences of the task, difficulty level of the task, and so on. Indeed, group norms vary and change with circumstances. Future research on group norms in small groups should eventually reflect the complexity of phenomenon of group norms to provide abundant and thorough understandings.
Table 1.1

*Predictions*

<table>
<thead>
<tr>
<th>Type of Norm</th>
<th>Success</th>
<th>Failure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Success</td>
<td>Failure</td>
</tr>
<tr>
<td>Voluntary Norm</td>
<td>- High commitment</td>
<td>- High commitment</td>
</tr>
<tr>
<td></td>
<td>- No need to change</td>
<td>- Need to change</td>
</tr>
<tr>
<td></td>
<td>- No change</td>
<td>- Resistant to change</td>
</tr>
<tr>
<td></td>
<td>- No acceptance of a newcomer</td>
<td>- No/less change</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- No acceptance of a newcomer</td>
</tr>
<tr>
<td>Institutional Norm</td>
<td>- Low commitment</td>
<td>- Low commitment</td>
</tr>
<tr>
<td></td>
<td>- No need to change</td>
<td>- Need to change</td>
</tr>
<tr>
<td></td>
<td>- No change</td>
<td>- No resistant to change</td>
</tr>
<tr>
<td></td>
<td>- No acceptance of a newcomer</td>
<td>- Change</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Acceptance of a newcomer</td>
</tr>
<tr>
<td>Inherited Norm</td>
<td>- Low commitment</td>
<td>- Low commitment</td>
</tr>
<tr>
<td></td>
<td>- No need to change</td>
<td>- Need to change</td>
</tr>
<tr>
<td></td>
<td>- No change</td>
<td>- No resistant to change</td>
</tr>
<tr>
<td></td>
<td>- No acceptance of a newcomer</td>
<td>- Change</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Acceptance of a newcomer</td>
</tr>
</tbody>
</table>
Figure 1.1 Predictions on willingness to change group norm
Table 2.1

*Evaluations of six methods in the pilot study*

<table>
<thead>
<tr>
<th>Method</th>
<th>Absolute evaluation</th>
<th>Relative evaluation (Frequency of the ranking)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
</tr>
<tr>
<td>Method A</td>
<td>2.68</td>
<td>1.50</td>
</tr>
<tr>
<td>Method B</td>
<td>5.15</td>
<td>1.68</td>
</tr>
<tr>
<td>Method C</td>
<td>4.10</td>
<td>1.66</td>
</tr>
<tr>
<td>Method D</td>
<td>4.39</td>
<td>1.73</td>
</tr>
<tr>
<td>Method E</td>
<td>4.92</td>
<td>1.67</td>
</tr>
<tr>
<td>Method F</td>
<td>5.54</td>
<td>1.69</td>
</tr>
<tr>
<td>Step</td>
<td>Task</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Instruction</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Individual differences Survey</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Practice task</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Group norm sheet (Manipulation of type of norm)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Questionnaire 1 (Manipulation check)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Information search task: Round 1</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Questionnaire 2</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Feedback sheet (Manipulation of task performance)</td>
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<tr>
<td>9</td>
<td>Questionnaire 3 (Dependent measures)</td>
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<tr>
<td>10</td>
<td>Questionnaire 4 (Deception check)</td>
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<tr>
<td>11</td>
<td>Debriefing</td>
<td></td>
</tr>
</tbody>
</table>

*Figure 3.1 Procedure of Study 1*
Table 3.1

*Frequency of individual choice of methods across experimental conditions*

<table>
<thead>
<tr>
<th>Type of Norm</th>
<th>Group Performance</th>
<th>Individual Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Method A</td>
</tr>
<tr>
<td>Voluntary Norm</td>
<td>Success</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Failure</td>
<td>5</td>
</tr>
<tr>
<td>Institutional Norm</td>
<td>Success</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Failure</td>
<td>3</td>
</tr>
<tr>
<td>Inherited Norm</td>
<td>Success</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Failure</td>
<td>3</td>
</tr>
</tbody>
</table>
Table 3.2

Means and standard deviations of group identification as a function of type of norm and individual choice

<table>
<thead>
<tr>
<th>Type of Norm</th>
<th>Individual Choice</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Method B</td>
<td>Non-B</td>
</tr>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>Voluntary Norm</td>
<td>4.50 (1.23)</td>
<td>4.20 (0.91)</td>
</tr>
<tr>
<td>Institutional Norm</td>
<td>4.24 (1.00)</td>
<td>4.32 (1.14)</td>
</tr>
<tr>
<td>Inherited Norm</td>
<td>3.64 (0.67)</td>
<td>4.66 (0.99)</td>
</tr>
</tbody>
</table>
Figure 3.2 Group identification as a function of type of norm and individual choice
Table 3.3

*Means and standard deviations of willingness to accept a newcomer as a function of group performance and individual choice*

<table>
<thead>
<tr>
<th>Group Performance</th>
<th>Individual Choice</th>
<th>Method B</th>
<th>Non-B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>Success</td>
<td></td>
<td>4.94 (1.27)</td>
<td>3.78 (1.64)</td>
</tr>
<tr>
<td>Failure</td>
<td></td>
<td>4.50 (1.18)</td>
<td>4.70 (1.25)</td>
</tr>
</tbody>
</table>
Figure 3.3 Willingness to accept a newcomer as a function of group performance and individual choice
Figure 4.1 Pattern of interaction between type of norm and group performance on the first and third items of group performance manipulation check ($p = .105$ and .163, respectively)
Figure 4.2 Pattern of interaction between type of norm and group performance on group identification ($p = .103$)
Figure 4.3 Interaction between combined type of norm and group performance on participants’ willingness to accept a newcomer ($p = .079$)
Table 4.1

*Means and standard deviations of group performance item 3 ("To what extent did you like working in this group?") as a function of type of norm and group performance*

<table>
<thead>
<tr>
<th>Type of Norm</th>
<th>Success</th>
<th>Failure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><em>M (SD)</em></td>
<td><em>M (SD)</em></td>
</tr>
<tr>
<td>Voluntary Norm</td>
<td>5.53 (1.02)</td>
<td>4.60 (1.27)</td>
</tr>
<tr>
<td>Institutional Norm</td>
<td>5.40 (1.35)</td>
<td>3.42 (.96)</td>
</tr>
<tr>
<td>Inherited Norm</td>
<td>5.47 (1.35)</td>
<td>4.20 (1.36)</td>
</tr>
</tbody>
</table>
Figure 4.4 Interaction between type of norm and group performance on participants’ responses on group performance item 3 (“To what extent did you like working in this group?”) ($p = .089$)
Table 4.2

*Means and standard deviations of group performance item 3 ("To what extent did you like working in this group?") as a function of type of norm and individual choice*

<table>
<thead>
<tr>
<th>Type of Norm</th>
<th>Method B</th>
<th>Non-B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>Voluntary Norm</td>
<td>5.00 (1.10)</td>
<td>5.09 (1.35)</td>
</tr>
<tr>
<td>Institutional Norm</td>
<td>4.40 (1.68)</td>
<td>4.46 (1.47)</td>
</tr>
<tr>
<td>Inherited Norm</td>
<td>5.50 (1.34)</td>
<td>4.24 (1.38)</td>
</tr>
</tbody>
</table>
Figure 4.5 Interaction between type of norm and individual choice on participants’ responses on group performance item 3 (“To what extent did you like working in this group?”) ($p = .072$)
Table 4.3

Means and standard deviations of item “To what extent do you think changing the group norm will enhance your group’s performance?” as a function of type of norm, group performance, and individual choice

<table>
<thead>
<tr>
<th>Type of Norm</th>
<th>Group Performance</th>
<th>Individual Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Method B</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$M$ ($SD$)</td>
</tr>
<tr>
<td>Voluntary Norm</td>
<td>Success</td>
<td>2.80 (.45)</td>
</tr>
<tr>
<td></td>
<td>Failure</td>
<td>3.36 (1.69)</td>
</tr>
<tr>
<td>Institutional Norm</td>
<td>Success</td>
<td>3.86 (2.19)</td>
</tr>
<tr>
<td></td>
<td>Failure</td>
<td>4.13 (1.25)</td>
</tr>
<tr>
<td>Inherited Norm</td>
<td>Success</td>
<td>2.56 (1.42)</td>
</tr>
<tr>
<td></td>
<td>Failure</td>
<td>4.33 (1.80)</td>
</tr>
</tbody>
</table>
Figure 4.6 Three-way interaction between type of norm, group performance, and individual choice on participants’ responses on item “To what extent do you think changing the group norm will enhance your group’s performance?” (p = .068)
Table 4.4

Means and standard deviations of item “To what extent do you think changing the group norm will harm your group’s performance?” as a function of type of norm and individual choice

<table>
<thead>
<tr>
<th>Type of Norm</th>
<th>Individual Choice</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Method B</td>
<td>Non-B</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td></td>
</tr>
<tr>
<td>Voluntary Norm</td>
<td>3.50 (1.71)</td>
<td>3.83 (1.70)</td>
<td></td>
</tr>
<tr>
<td>Institutional Norm</td>
<td>5.00 (1.13)</td>
<td>3.00 (1.38)</td>
<td></td>
</tr>
<tr>
<td>Inherited Norm</td>
<td>4.33 (1.57)</td>
<td>3.57 (1.72)</td>
<td></td>
</tr>
</tbody>
</table>
Figure 4.7 Interaction between type of norm and individual choice on participants’ responses on item “To what extent do you think changing the group norm will harm your group’s performance?”
Table 5.1

*Mean and standard deviations of measures depending on type of norm*

<table>
<thead>
<tr>
<th>Type of Norm</th>
<th>Group Identification</th>
<th>Willingness to change group norm</th>
<th>Willingness to accept a newcomer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voluntary Norm</td>
<td>4.67 (0.90)</td>
<td>2.97 (1.91)</td>
<td>3.85 (1.15)</td>
</tr>
<tr>
<td>Institutional Norm</td>
<td>4.33 (1.14)</td>
<td>3.62 (1.74)</td>
<td>4.46 (1.10)</td>
</tr>
<tr>
<td>Inherited Norm</td>
<td>4.64 (1.07)</td>
<td>2.64 (1.58)</td>
<td>4.56 (1.46)</td>
</tr>
</tbody>
</table>
References


Appendix A

21 Questions in Information Search Task

Q1. How many miles is it from New Orleans, LA to Des Moines, IA?
   1) 841  2) 978  3) 1,119  4) 252

Q2. Of the following, which state has the highest American Indian and Alaska Native population according to the 2000 Census?
   1) South Dakota  2) Washington  3) New Mexico  4) Oklahoma

Q3. What state’s name is derived from the original Spanish meaning of “snow-clad”?
   1) New Jersey  2) Nevada  3) Colorado  4) California

Q4. Eleuthere l. du Pont founded one of the largest business empires by manufacturing what product?
   1) Computers  2) Gunpowder  3) Cars  4) Toasters

Q5. What is the most commonly made income tax error for 2007?
   1) Incorrect or missing Social Security numbers  2) Incorrect tax entered from tax tables  3) Mathematical errors for tax credits  4) Entering estimated tax payments on the wrong line

Q6. In the men’s track and field event, who had a 1,500-Meter run time of 3m. 45.2s?
   1) Mel Sheppard, United States  2) Albert Hill, Great Britain  3) Peter Rono, Kenya  4) Joseph Barthel, Luxembourg

Q7. Which snake “may be the deadliest of all land snakes”?
   1) Black Mamba  2) Carpet Viper  3) Taipan  4) Tiger snake

Q8. On the all-time top-grossing American films list, what is the 30th ranking movie?
   1) Titanic  2) The Sixth Sense  3) Pineapple Express  4) Independence Day

Q9. In 2008-2009, what was the 9th highest selling software?

Q10. Which state has the lowest public high school graduation rate?
    1) Louisiana  2) Alabama  3) North Dakota  4) Nevada
Q11. How many movie screens were there in the US in the year 2004?
   1) 36,594  2) 35,786  3) 38,852  4) 36,000

Q12. What is Rhode Island's state flower?
   1) Scarlet Carnation  2) Violet  3) Mistletoe  4) Rose

Q13. How many people between the ages of 15 – 54 received social security benefits in 2008?
   1) 5,609  2) 3,584  3) 4,731  4) 2,933

Q14. Who did the Nobel Prize go to in the category of Chemistry in the year 1926?
   1) Theodor Svedberg  2) Heinrich O. Wieland  3) Jean B. Perrin  4) Grazia Deledda

Q15. Of the following, which U.S. county has the highest population?
   1) King Co., WA  2) New York Co., NY  3) Cook Co., IL  4) Kings Co., NY

Q16. What is the top selling passenger car in the United States in the year 2008?
   1) Hyundai Sonata  2) Ford Fusion  3) Chevrolet Cobalt  4) Toyota Camry

Q17. What is the smallest County in the U.S.?
   1) Arlington County, VA  2) San Bernadino County, CA  3) Climax, CO  4) Hilo, HI

Q18. How many people were killed in the Northridge, CA earthquake on January 17th, 1994?
   1) 215  2) 61  3) 70  4) 115

Q19. How many estimated deaths occurred during the Mt. Pelee, Martinique volcanic eruption on May 8, 1902?
   1) 16,000  2) 4,000  3) 9,350  4) 28,000

Q20. In what year were the first adhesive U.S. postage stamps sold?
   1) 1847  2) 1851  3) 1901  4) 1888

Q21. Which of these memorable sports moments occurred during July 6, 2008?
   1) Living strong  2) Fallen Champion  3) “Rafa” Vs. Roger  4) Seems Like old Times
Appendix B

Individual Differences Measures

<table>
<thead>
<tr>
<th>Resistance to change scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Oreg, 2003)</td>
</tr>
</tbody>
</table>

Directions: For each of the statements below, indicate the degree to which you agree or disagree with the statement by writing a number in the space beside the question using the scale below:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strongly Disagree</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Strongly Agree</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. I generally consider changes to be a negative thing.
2. I’ll take a routine day over a day full of unexpected events any time.
3. I like to do the same old things rather than try new and different ones.
4. Whenever my life forms a stable routine, I look for ways to change it.
5. I’d rather be bored than surprised.
6. If I were to be informed that there’s going to be a significant change regarding the way things are done at work, I would probably feel stressed.
7. When I am informed of a change of plans, I tense up a bit.
8. When things don’t go according to plans, it stresses me out.
9. If my boss changed the criteria for evaluating employees, it would probably make me feel uncomfortable even if I thought I’d do just as well without having to do any extra work.
10. Changing plans seems like a real hassle to me.
11. Often, I feel a bit uncomfortable even about changes that may potentially improve my life.
12. When someone pressures me to change something, I tend to resist it even if I think the change may ultimately benefit me.
13. I sometimes find myself avoiding changes that I know will be good for me.
15. Once I’ve come to a conclusion, I’m not likely to change my mind.
16. I don’t change my mind easily.
17. My views are very consistent over time.
Unconventionality scale
from HEXACO Personality Inventory
(Lee & Ashton, 2004)

Directions: For each of the statements below, indicate the degree to which you agree or disagree with the statement by writing a number in the space beside the question using the scale below:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Disagree</td>
<td></td>
<td></td>
<td>Strongly Agree</td>
<td></td>
</tr>
</tbody>
</table>

1. I am considered to be kind of eccentric.
2. I know that my ideas sometimes surprise people.
3. I do things that others find strange.
4. I rebel against authority.
5. I swim against the current.
6. I would hate to be considered odd or strange.
7. I enjoy being thought of as a normal “mainstream” person.
8. I like to be viewed as proper and conventional.
9. I like to be thought of as a normal kind of person.
10. I try to avoid complex people.
Conformity scale
from Jackson Personality Inventory-Revised
(Jackson, 1994)

Directions: For each of the statements below, indicate whether you agree or disagree with the statement by choosing either “True” or “False”.

[ True / False ] 1. I worry about what people think of me.

[ True / False ] 2. I conform to others’ opinions.

[ True / False ] 3. I need the approval of others.

[ True / False ] 4. I want to amount to something special in others’ eyes.

[ True / False ] 5. I do what others do.


[ True / False ] 7. I am not concerned with making a good impression.

[ True / False ] 8. I feel it’s okay that some people don’t like me.


[ True / False ] 10. I want to be different from others.
Appendix C

Group Norm Sheet (Manipulation of type of norm)

[Voluntary Norm Condition]

<table>
<thead>
<tr>
<th>[Group Norm Sheet]</th>
<th>Participant ID # ( )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group # ( )</td>
<td></td>
</tr>
<tr>
<td>Your group is supposed to work on the task with method ( ). This method was determined as your group’s norm based on your group members’ opinions.</td>
<td></td>
</tr>
<tr>
<td>Member A prefers method ( ).</td>
<td></td>
</tr>
<tr>
<td>Member B prefers method ( ).</td>
<td></td>
</tr>
<tr>
<td>Member C prefers method ( ).</td>
<td></td>
</tr>
</tbody>
</table>

| A | Every member works on all the questions individually. When a person finishes, he or she just waits for everyone else to finish. Then, the answers are compared with each other, and the best answer for each question is selected. |
| B | Members divide the questions among themselves so that each person works on a few questions, but a member who finishes quickly then helps other members. |
| C | Members divide the questions among themselves so that each person works on a few questions. Then, they give their answers to other members, and the other members check their work before submission. |
[Institutional Norm Condition]

**[Group Norm Sheet]**

<table>
<thead>
<tr>
<th>Group # (_____ )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your group is supposed to work on the <strong>task</strong> with <strong>method</strong> (_____ ). This method was determined as your <strong>group’s norm</strong> by the <strong>experimenter</strong> regardless of group members’ opinions.</td>
</tr>
</tbody>
</table>

| A | Every member works on all the questions individually. **When a person finishes, he or she just waits for everyone else to finish.** Then, the answers are compared with each other, and the **best answer for each question is selected.** |

| B | Members divide the questions **among themselves so that each person works on a few questions**. But a member who finishes quickly then helps other members. |

| C | Members divide the questions **among themselves so that each person works on a few questions**. Then, they **give their answers to other members**, and the **other members check their work** before submission. |
[Inherited Norm Condition]

[Group Norm Sheet]

<table>
<thead>
<tr>
<th>Group # (         )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your group is supposed to work on the <strong>task</strong> with <strong>method</strong> (         ). This method was determined as your <strong>group’s norm</strong> regardless of group members’ opinions because <strong>it has been used</strong> in this type of studies.</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong></td>
<td>Every member works on all the questions individually. <strong>When a person finishes, he or she just waits for everyone else to finish. Then, the answers are compared with each other, and the best answer for each question is selected.</strong></td>
</tr>
<tr>
<td><strong>B</strong></td>
<td>Members divide the questions <strong>among themselves so that each person works on a few questions</strong>, but a member who finishes quickly then helps other members.</td>
</tr>
<tr>
<td><strong>C</strong></td>
<td>Members divide the questions <strong>among themselves so that each person works on a few questions</strong>. Then, they <strong>give their answers to other members, and the other members check their work</strong> before submission.</td>
</tr>
</tbody>
</table>
For the “Information Search Task”, a group score of 75 or higher represents good team performance.

Your group, group # (________) marked a score (______) out of 100 on the first round.

The scores on the first round and the second round will be averaged to determine the final group score. You will get a lottery ticket if your group’s final score is 75 or higher.