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LET'S GET REAL:
ADDING AN ACCOUNTABILITY LAYER
TO THE MINIMAL GROUP PARADIGM

by

Michael Randolph Dobbs

A Thesis Submitted to the Faculty of the
DEPARTMENT OF COMMUNICATION
In Partial Fulfillment of the Requirements
for the Degree of
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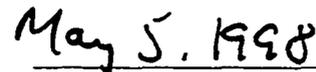
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DEDICATION

To Mom and Dad,
who have helped me achieve everything I've ever wanted in life.

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ABSTRACT

Since its inception in the early 1970s, the minimal group paradigm (MGP) has proved a popular method of testing intergroup phenomena. In addition, the paradigm supplied early evidence that led to the formation of Tajfel and Turner's (1979, 1986) Social Identity Theory. The original studies utilizing the MGP were developed to find a baseline intergroup situation that was necessary and sufficient to produce ingroup favoritism. Later minimal group studies confirmed a mere categorization effect - that is, simply categorizing subjects into one of two groups, even on a trivial basis, was enough to bring on discriminatory behavior.

The present study seeks to clarify the mere categorization phenomenon. It is proposed that a minimal group scenario in some ways represents an intergroup environment in which discrimination is fostered. Recent research has uncovered certain characteristics of real groups that, when layered onto the basic MGP, cause discrimination to disappear. The present experiment examines similar effects for accountability. It is proposed that subjects who believe they will have to justify their allocation decisions to others will be less likely to exhibit ingroup-favoring behavior.

In addition to typical minimal group findings of discrimination under non-accountable conditions, results also show that the presence of accountability does indeed eliminate ingroup-favoring behavior under conditions of high ingroup status and majority ingroup standing. Discriminatory behavior is revived when the ingroup is in a numerical minority. This paper describes the experiment, including its methods and results, and suggests avenues for future intergroup research.

CHAPTER ONE

Introduction and Rationale

Intergroup relations is of central interest to social psychologists and, more recently, communication researchers. Indeed, the very term "social psychology" suggests an intergroup leaning. Intergroup research has progressed through different phases over the years, each with a unique perspective on the nature of the relationship between social groups and the individual's role within it. Early work by Sherif and his colleagues emphasized the role of competition over scarce resources as a primary impetus for discriminatory intergroup behavior (Sherif, Harvey, White, Hood, & Sherif, 1961; Sherif, 1966). Later studies led to the emergence of Social Identity Theory (SIT), which seeks to explain the cognitive and motivational processes that individuals engage in when acting as group members (Tajfel & Turner, 1979, 1986). Since the late 1970s, SIT has served as the leading explanation of discrimination between members of ingroups and outgroups, despite problems with some of its propositions and with the methodology of some of the studies that have tested it. Perhaps the most important methodological trend for the development and testing of SIT is the "minimal group paradigm" (MGP), developed by Tajfel and his associates (1970, Tajfel, Billig, Bundy, & Flament, 1971). In addition to having important implications for Social Identity Theory, the MGP has also been used as a convenient method for conducting intergroup research in a laboratory setting. This paper reports an experiment that examines the common minimal group finding that merely categorizing subjects into two

distinct groups is a necessary and sufficient condition for eliciting ingroup favoritism. It is suggested that, counter to implied logic, this mere categorization effect might be particularly easy to achieve in a minimal group setting that does not factor in numerous characteristics of real intergroup situations. Specifically, the absence of any accountability on the part of participants might well increase the likelihood that they will discriminate against a relevant outgroup and favor their respective ingroup. A discussion of relevant antecedent intergroup research is given, followed by a description of the methods of the current study, results, and a discussion of findings. Finally, future directions in intergroup research are suggested, based on the implications of this analysis.

Sherif's Early Intergroup Studies

During the 1950s and 60s, Sherif and his colleagues conducted a series of experiments involving pre-adolescent boys in a summer camp setting (Sherif et al., 1961; Sherif, 1966). Research participants were divided into mutually exclusive groups and were allowed to develop intra-group relations by participating in a variety of camp activities that included ingroup members only. Following this ingroup development phase, researchers took note of the emergence of ingroup norms, status hierarchies, and leadership roles.

In a second phase, the different groups were brought together to compete in a number of zero-sum games such as tug-of-war and archery. The introduction of intergroup competition brought about evaluative biases in favor of the ingroup, derogation and hostility toward the outgroup, and the use of negative outgroup stereotypes. In addition, groups frequently raided one another's territory, ingroup members viewed offensive raids on their

part as justified, whereas attacks on their own camp by the outgroup were viewed as vicious acts of aggression.

Following the establishment of intergroup competition, researchers imposed an intergroup cooperation phase in which the two opposing groups would have to work together to accomplish a task. For example, subjects would have to repair a truck that supplied food and water to both groups. Thus, unlike the goals involved in the competitive win/lose games, the accomplishment of this type of goal would benefit all subjects, regardless of group membership. It was found that a series of tasks involving these superordinate goals lessened hostility and increased positive attitudes between groups, although this effect was achieved only when a number of such tasks were engaged in consecutively.

The important implications of Sherif's studies are twofold: first, they suggest that real conflict of interest and the resulting intergroup competition are the primary causes of group conflict. Second, they show that superordinate goals represent a path to conflict resolution. These points support the basic proposition of Campbell's (1965) Realistic Group Conflict Theory (RCT), which states that real conflict of interest causes intergroup conflict. RCT assumes that "group conflicts are rational in the sense that groups do have incompatible goals and are in competition over scarce resources" (Campbell, 1965, p. 287).

Tajfel's Minimal Group Paradigm

In 1970, Tajfel published an article in *Scientific American* which questioned the assumptions of RCT. Specifically, he proposed that, based on results of experiments with artificially created "minimal" groups, open

conflict over scarce resources is not necessary for the manifestation of bias in favor of one's own ingroup. Instead, the mere fact that subjects have been categorized into groups of us and them is sufficient to produce intergroup behavior in the form of discrimination against an outgroup.

Tajfel's initial pattern of research, designed to discover such baseline intergroup conditions, was envisioned as a series of experiments that would begin by stripping away all characteristics normally associated with groups, including face-to-face interaction between group members, conflicts of interest, previous hostility between groups, and so on (Tajfel, 1978). These characteristics were then to be systematically layered on in subsequent experiments until discrimination was observed so as to establish the precise conditions which were both necessary and sufficient to produce ingroup favoritism (Oakes, Haslam, & Turner, 1994, p. 41).

In the first "minimal group" experiment (Tajfel, 1970; Tajfel et al., 1971), subjects believed they were categorized into two groups based on a trivial task in which subjects had to estimate the number of dots on a page or indicate their preference for paintings by modern artists Klee and Kandinsky. In actuality, group assignment was random. Subjects then had the opportunity to allocate a set amount of points (worth money) to two other people in the study using an allocation matrix (see Appendix A). To control for extraneous variables, the following conditions were established to create groups that were as minimal as possible:

1. There is no face-to-face interaction between Ss.
2. Complete anonymity of group membership is preserved.

3. There should be no instrumental or rational link between the criteria for intergroup categorization and the nature of ingroup and outgroup responses requested from subjects.
4. Responses should not represent any utilitarian value to the subject making them.
5. A strategy of responding in terms of intergroup differentiation should be in competition with a strategy based on other more "rational" and "utilitarian" principles, such as obtaining maximum benefit for all. A further step in this direction would be to oppose a strategy of maximum material benefit to the ingroup to one in which the group gains less than it could, but more than the outgroup.
6. Responses should be made as important as possible to the Ss. They should consist of real decisions about the distribution of concrete rewards (and/or penalties) to others rather than some form of evaluation of others (Tajfel et al., 1971, p. 153-154).

Results showed that, when faced with a decision between an in-group member and an out-group member, subjects favored their in-group at the expense of the out-group. When allocating money to two people from the same group (either both in-group or both out-group), the division was equal. Results also showed no effect for a value condition where subjects believed one group to be more adept at dot-estimation. The overall findings of these experiments came as a surprise because, as mentioned earlier, this was to be the first in a series of studies that would add group characteristics layer-by-layer as the research progressed. Discrimination wasn't expected to occur

until later in the program when some key element or combination of elements of realistic groups was added.

Based on the results of this early minimal group study, Tajfel and his associates concluded that group formation and intergroup discrimination had occurred as a result of social categorization per se, and not due to other factors such as interpersonal friendships within or between groups. This finding later came to be known as the "mere categorization" effect. Later studies which implemented the paradigm also supported such an effect (e.g., Allen & Wilder, 1975; Tajfel, 1974; Turner, 1975), which is in contrast to Sherif's (1966) earlier conceptualization that competition for scarce resources and the presence of incompatible group goals is necessary (though not always sufficient) to induce intergroup discrimination (Turner, 1981).

Social Identity Theory

The unexpected findings in the initial minimal group experiments implied an essential question that intergroup researchers have grappled with ever since - what was causing subjects to discriminate? Why would someone choose an allocation strategy of "maximum differential" in points between their ingroup and a particular outgroup (for example, 12 points for an anonymous ingroup member versus 11 for an outgroup member) when this meant receiving less points overall (i.e., accepting 12 points when as many as 20 were there for the taking)? More importantly, would such a motivational process apply to intergroup circumstances in real life, outside the minimal group paradigm? Results of the original and later replicated MGP studies suggested that there was something going on within the subjects' thought

processes which, if pinned down, might answer some of these questions. As Tajfel and Turner (1979) state:

Two points stand out: first, minimal intergroup discrimination is not based on incompatible group interests; second, the baseline conditions for intergroup competition seem indeed so minimal as to cause the suspicion that we are dealing here with some factor or process inherent in the intergroup situation itself. (p. 40)

More specifically, Taylor & Moghaddam (1994) identify four major concepts that grew out of the minimal group experiments: social categorization, social identity, social comparison, and psychological group distinctiveness. All four of these concepts, particularly group distinctiveness, later became foundations for Social Identity Theory. In fact, in the years following the initial formulation of SIT, Tajfel sometimes referred to it as "the C.I.C. theory", standing for social categorization/identity/comparison (1982).

Social categorizations are defined as "cognitive tools that segment, classify, and order the social environment" (Tajfel & Turner, 1979, p. 40). Research has shown that individuals tend to accentuate intracategory similarities and intercategory differences (Tajfel, 1982). This social accentuation consists of two parts - a cognitive component and a value component. Cognitively, there is "utilization of the category membership of individual items for ordering, systematizing, and simplifying the complex network of social groups confronting individuals in their social environment" (Tajfel, 1982, p. 21). When value is placed on a categorization, similarities and differences are further accentuated in an effort to "protect, maintain, or enhance the value systems applying to distinctions between

social groups" (Tajfel, 1982, p. 21). So, for example, a high school student might look at the college sweaters that his older sibling's friends wear and differentiate the UCLA group from the USC group. When the high school student is accepted at UCLA a year later (thus adding value to the categorization), the differentiations between the two schools become even greater, since more is now at stake.

Once people are aware that they belong to a particular category or group, they incorporate as a part of their self image a social identity, defined as "that part of an individual's self-concept which derives from his knowledge of his membership in a social group (or groups) together with the value and emotional significance attached to that membership" (Tajfel, 1978, p. 63). As with social categorization, Tajfel (1982) identifies a cognitive aspect of social identity (i.e., one's knowledge of group membership), as well as an evaluative aspect (the value placed on that membership).

As will be discussed, Social Identity Theory proposes that individuals strive to achieve or maintain a positive social identity. Often, this positive valence can be achieved through an appropriate intergroup social comparison. In a process similar to that described in Festinger's (1954) Social Comparison Theory (SCT), characteristics of the in-group (rather than individual attributes as in SCT) are compared to those of the out-group. To the extent that the comparison results in prestige or some other condition which favors the in-group, positive group distinctiveness (from the outgroup) is achieved, which results in a more positive social identity. To go back to the college example, when UCLA beats USC in football, our student

(who happens to be a sports fan) is able to achieve a positive social identity.

Thus, as Commins and Lockwood (1979) state:

The social group is seen to function as a provider of positive social identity for its members through comparing itself, and distinguishing itself, from other comparison groups along salient dimensions which have a clear value differential" (p. 281-282).

The above concepts come together in the formulation of Social Identity Theory, which seeks not only to explain results of minimal group and other intergroup experiments, but also to predict behavior in various intergroup settings. The theory is predicated on three general axioms (Tajfel and Turner, 1979):

Axiom 1: "Individuals strive to maintain or enhance their self-esteem: they strive for a positive self-concept" (p. 40).

Axiom 2: "Social groups or categories and the membership of them are associated with positive or negative value connotations. Hence, social identity may be positive or negative according to the evaluations (which tend to be socially consensual, either within or across groups) of those groups that contribute to an individual's social identity" (p. 40).

Axiom 3: "The evaluation of one's own group is determined with reference to specific other groups through social comparisons in terms of value-laden attributes and characteristics. Positively discrepant comparisons between in-group and out-group produce high prestige; negatively discrepant comparisons between in-group and out-group result in low prestige" (p. 40).

Tajfel & Turner (1979) go on to derive three propositions from the above axioms:

Proposition 1: "Individuals strive to achieve or to maintain positive social identity" (p. 40).

Proposition 2: "Positive social identity is based to a large extent on favorable comparisons that can be made between the in-group and some relevant out-groups: the in-group must be perceived as positively differentiated or distinct from the relevant out-groups" (p. 40).

Proposition 3: "When social identity is unsatisfactory, individuals will strive either to leave their existing group and join some more positively distinct group and/or to make their existing group more positively distinct" (p. 40).

In addition, the following proposition appears to be implicit in the theory:

Proposition 4: "...Social comparison and the need for positive identity promote selective accentuation of intergroup differences that favor the in-group" (Abrams & Hogg, 1990, p. 3).

As it stands, then, SIT is primarily a motivational theory which posits that, ultimately, self-esteem upkeep is the motor which drives individual behavior in intergroup settings. Such an interpretation, along with the general theoretical framework, fits nicely with the results of the early minimal group experiments. This is not, however, particularly surprising, since those were the very results which Tajfel and Turner (1979) sought (in part) to explain. Clearly, further evaluation of the theory and the paradigm was (and is) necessary.

Empirical Testing of Social Identity Theory

Tests of SIT during the past 18 years have been generally supportive, although some of the theory's central propositions have received mixed results in experimental investigations. This uncertainty with regard to its

overall validity has sparked debate and criticisms in the past decade not only of the theory itself, but of the original minimal group findings from which it sprang.

One such contention has dealt with the pivotal role of self-esteem. According to Social Identity Theory, there are two corollaries of the self-esteem hypothesis. One holds that successful intergroup discrimination should enhance social identity, thereby elevating self esteem. The second posits that intergroup discrimination should be promoted when self-esteem is threatened, since engaging in discrimination offers an opportunity for positive distinctiveness, which should lead to enhanced esteem (Abrams & Hogg, 1990).

In analyzing these hypotheses, Lemyre and Smith (1985) utilized the MGP by splitting subjects into four groups based on two independent variables: categorization/no categorization (arbitrary division into two groups, or no division) and discrimination/no discrimination (opportunity to allocate points, or no opportunity). They found that those in the discrimination/categorization condition reported relatively higher levels of self-esteem than those in the no discrimination/categorization and discrimination/no categorization conditions.

In other analyses, Crocker and his associates (Crocker & Schwartz, 1985; Crocker, Thompson, McGraw, & Ingerman, 1987) have found that low initial self-esteem results in derogation of both the ingroup and the outgroup, rather than derogating the outgroup and favoring the ingroup. Hogg & Sunderland (1991) found support for corollary 2 but not corollary 1. More recent research has suggested that these inconsistent findings may be due to the fact that most

studies measure global self-esteem rather than dimension-specific self-esteem (Hunter, Platow, Howard, & Stringer, 1996). Since social identity comprises only a portion of one's overall self-concept, it makes sense that more specific measures of self-esteem would operate in the way SIT predicts. Such claims, while promising, require further investigation.

Another troublesome area is the crucial relationship between social identity and positive distinctiveness. According to the theory, ingroup favoritism is a method of positively distinguishing one's own group from a particular outgroup in order to enhance or maintain social identity. This is the central explanation SIT offers for the behavior of subjects in minimal group experiments. Recent research has questioned whether social identity enhancement via distinctiveness is truly operating in the MGP, or whether some other process is at work. In a series of experiments, Diehl (1988, 1989, 1990) examined potential alternative explanations for discrimination in the minimal group paradigm. These included derivations from Belief Congruence Theory (Rokeach, 1960), Equity Theory (Walster, Walster, & Berscheid, 1978), and Category Differentiation Theory (Doise, 1978).

From a Belief Congruence perspective, discrimination between ethnic or racial groups is based on presumed differences in beliefs rather than differential category memberships. Thus, individuals discriminate because they feel that members of an outgroup hold beliefs and attitudes that are dissimilar to their own. Diehl's (1988) results supported a Social Identity interpretation, because category membership was a better predictor of discrimination than attitudinal similarity in purely intergroup situations.

Still, dissimilarity between point allocators and targets appeared to cause discrimination at the interpersonal level.

Another potential explanation comes from Equity Theory, which states that groups evolve social norms for the equitable allocation of resources among members. When applied to an intergroup situation, this implies that differential group membership justifies awarding more points to one's own ingroup and less to an outgroup, because subjects might assume that outgroup members will be doing the same from their perspective. In this way, discrimination is a means of maintaining an equitable relationship between the groups by using "tit for tat" reasoning. Results of Diehl's (1989) study indicate that individuals engage in discrimination regardless of their anticipation of outgroup behavior. In other words, subjects showed ingroup favoritism not only when they expected the outgroup to discriminate against them, but also when they expected members of the other group to use an equal or "fair" distribution strategy. Such a finding discounts an equity interpretation, since Equity Theory would have predicted the subjects to reciprocate the type of behavior shown them. Instead, they discriminated in both conditions, regardless of anticipation. Diehl (1989) did find, however, that introducing mutuality to the MGP significantly lessened outgroup discrimination. That is, when subjects thought they were allocating to one particular member of the outgroup who had been fair to them in an initial allocation trial, they tended to reciprocate this fairness. This suggests that the lack of interindividual mutuality in the standard minimal group paradigm might actually foster discrimination, because subjects do not have to justify their allocation choices.

Diehl's final experiment examined the possible effects of category differentiation on discrimination in the MGP. The fact that there are only two categorization dimensions in the paradigm (i.e., Klee vs. Kandinsky or overestimator vs. underestimator) might promote discrimination. If more dimensions were available (as in real life), the discrimination effect might be lessened or even eliminated. Results showed that the introduction of a second orthogonal dimension of categorization reduces or eliminates intergroup discrimination only in cases where this second categorization unites the ingroup and the outgroup of the first categorization in a common category (e.g., I prefer Klee and I am an underestimator; I'm allocating points between a Klee/underestimator and a Klee/overestimator). Discrimination persisted when the comparison subject was in the outgroup on both dimensions. As implied by Sherif's work, results suggest that discrimination might be lessened by emphasizing common group membership as opposed to similarities between groups. It is also possible that conceptualizing someone as being part of a group on two or more dimensions simultaneously is too cognitively difficult for subjects to make an unequivocal decision on, unless the target person is clearly not in the subject's ingroup across all dimensions.

Another line of research which has questioned the association between social identity and positive distinctiveness as well as the mere categorization effect is the work of Mummendey and her associates (Blanz, Mummendey, & Otten, 1995; Mummendey, Simon, Dietze, Haeger, Kessler, Lettgen, & Shaferhoff, 1992; Otten, Mummendey, & Blanz, 1996). Specifically, this group has examined the effect of allocating negative stimuli (rather than positive

rewards) in the minimal group paradigm. According to Tajfel's initial delineation of minimal group requirements, penalties (in addition to or in lieu of rewards) are specifically mentioned as acceptable dependent measures. The vast majority of MGP studies since the early 1970s, however, have employed positive (usually monetary) reward allocations. Research comparing positive with negative allocations (across different settings, levels of reality of group categorization, salience of categorization, and relative group size and status) shows that subjects allocating positive rewards and evaluating others on positive dimensions display the familiar ingroup favoritism found in past MGP studies, but that this effect disappeared when negative allocations were made under baseline conditions. Examples of such negative allocations would be the amount of time in minutes that an ingroup or outgroup member would have to spend in a room listening to an annoying noise. As Mummendey (1995) states:

Hence, people did not hesitate to favour their ingroup on positively evaluated attribute-dimensions, and they allocated more money to members of their own group than to those of the outgroup. However, when it came to allocating burdens, i.e., negative resources, fairness was the prevailing strategy. With respect to evaluations on negative attributes, we even observed tendencies towards outgroup-favoritism. (p. 666)

This absence of discrimination in the face of negative allocations and evaluation dimensions is referred to as the "positive-negative asymmetry in intergroup discrimination". Obviously, this is not meant to imply that discrimination in terms of negatively-valenced items does not exist - rather,

research has shown that in order to elicit ingroup favoritism, additional conditions (beyond simple categorization) are necessary. Mummendey (1995) refers to this as the "aggravation hypothesis", since the same conditions that are used to intensify discrimination the positive case (i.e., salient categorization and inferiority and/or minority status of the ingroup) are needed to simply call forth discrimination in the negative case. Thus, it appears that not only does the "mere categorization" effect not necessarily hold under certain circumstances, but, as suggested by Diehl's experiments, some of the characteristics of the classic minimal group paradigm, such as the use of positive resource allocations and the absence of accountability, might actually make discrimination easier to detect.

In explaining the mechanisms at work in the positive-negative asymmetry effect, Mummendey (1995) speculates that it might be that the different valences of allocations or evaluation dimensions might prime different cognitive styles or different styles of information processing. "Negative stimuli may lead to a more analytic, more careful, more accurate way of processing the information in the social situation provided in the experiments" (Mummendey, 1995, p. 667). This more careful cognitive style could lead to the decision to discriminate less or not at all under negative allocation circumstances.

Accountability

Consistent with Mummendey's analysis, research on the effects of accountability (the need to justify one's views or actions to another) on individual judgment sheds light on the processes operating in the minimal group paradigm. Tetlock (1983) found that "accountability to an individual of

unknown views motivates people to consider arguments and evidence on both sides of [an] issue in order to prepare themselves for a wide variety of possible critical reactions to their views" (p. 75). Similarly, Cvetkovitch (1978) claims that accountability leads to "less intuitive" and "more analytic" modes of thought (p. 155).

In the minimal group paradigm, subjects are physically isolated from one another, are cognitively anonymous to each other, and have no anticipation of interacting with and/or justifying their choices to members of their ingroup or the outgroup. In real-life situations, this is not normally the case. Individuals do typically interact with one another and information about group membership is at least readily available, if not blatantly apparent (as in most cases of gender or ethnicity). In such situations, accountability is usually present to some degree and, as a result, individuals are more careful to hide their prejudice in an effort to avoid backlash from derogated outgroups. While one's ingroup may be privately favored, the behavioral manifestations of that favoritism should be less likely to emerge. Of course, as mentioned above, the presence of accountability merely causes people to think about the expression of their attitudes and actions more carefully, not necessarily suppress them all the time. If the latter were true, then we wouldn't see Nazi, skinhead, or other supremacist groups in our social environment. In everyday interactions, however, more mindful consideration of group bias expression should result in a restraint of the venting of those views and/or actions. It makes sense, then, that introducing accountability into the minimal group paradigm will conceal ingroup favoritism, just as introducing negative allocations did in Mummendey's

research. Furthermore, giving people a justifiable reason to favor their own ingroup (such as low relative ingroup status and minority standing) should cause discrimination to become manifest, in accordance with the aggravation hypothesis described above.

Proposal

The present study uses accountability to make two important points. First, the MGP's feature of mere categorization into two groups does not necessarily represent a truly "minimal" group situation, in the sense that adding certain layers of realistic group characteristics (in this case, accountability) might actually reduce, rather than add to, the level of discrimination displayed by subjects. Such a realization might well contribute to a change in contemporary intergroup thinking and lead to new trends in research. This leads directly to the second point - that research must begin to move away from the artificial, minimal groups of classic MGP experiments and toward analysis of more "maximal" groups (i.e., those defined by meaningful as opposed to trivial criteria, involving accountability, interaction, norm development, status relations, and so forth). In order to achieve the utmost efficiency, control, and validity, such an experimental movement must be engaged in systematically across studies, with layers being added in such a way as to assess their individual and combined effects.

Hypotheses

This experiment compares a typical minimal group (as a control condition) with one that includes accountability - i.e., subjects will anticipate that they will have to justify their allocation choices to members of a respective outgroup. As described above, the following effects are predicted:

Hypothesis 1: Subjects minimally categorized into a group based on trivial criteria will show less ingroup favoritism when held accountable for their allocation decisions than subjects who are not held accountable.

Following Social Identity Theory, people should exhibit more discrimination when their social identity is threatened. Members of low status and/or minority groups, therefore, should exhibit more discrimination than members of high status and/or majority groups.

Hypothesis 2a: Members of relatively low status groups will show more ingroup favoritism than members of relatively high status groups.

Hypothesis 2b: Members of minority groups will show more ingroup favoritism than members of majority groups.

Hypothesis 2c: Members of groups that are both a minority and of low status will show more ingroup favoritism than members of groups that are in the majority and possess high status.

The third hypothesis calls forth Mummendey's aggravation hypothesis - that is, when given a justifiable reason to favor their own ingroup, even accountable subjects will discriminate:

Hypothesis 3: Accountable subjects will show ingroup favoritism when their ingroup is perceived as being of low relative status and a minority in comparison with a target outgroup.

To verify that self-esteem maintenance is indeed operating as posited by Social Identity Theory, state self-esteem will be measured both before and after subjects allocate monetary points. Following SIT's framework, self-esteem should increase for those subjects engaging in discrimination, since

favoring one's own ingroup should lead to positive ingroup distinctiveness and, therefore, a positive social identity.

Hypothesis 4: Subjects who engage in discrimination should display an increase in self-esteem in comparison with subjects who do not engage in discrimination.

CHAPTER TWO

Methods

Participants

Ninety-seven male and female undergraduate communication students at the University of Arizona served as subjects and were given extra credit and a small monetary reward for their participation. Six trials were run with 10 to 21 subjects each.

Design

Ss were randomly assigned to conditions in a 2 (accountability vs. no accountability) x 2 (high status vs. low status) x 2 (majority vs. minority) factorial design. The dependent variables were measured with intergroup monetary allocations using "Tajfel matrices" (see Appendix A - these are the same matrices recommended by Bourhis, Sachdev, & Gagnon, 1994, and previously employed by Tajfel et al., 1971; Billig & Tajfel, 1973; Allen & Wilder, 1975; Diehl, 1988; and Otten et al., 1996). The matrices were used in part to compare results with previous classic minimal group studies.

Heatherton and Polivy's (1991) State Self-Esteem Scale (SSES) was used as a measure of pre- and posttest self-esteem. In order to establish a unique and correlated pretest and posttest, the original 20-item scale was divided into two 10-item scales according to corrected item-total correlations for each of three primary factors found to be inherent in the SSES (Heatherton and Polivy, 1991, p. 898). This was done by ranking r values reported by Heatherton and Polivy (1991) for each primary factor and evenly distributing them into two groups, thus creating the 10-item subscales (see Appendix C - (R) represents reverse scaling).

Procedure

The experiment was conducted on the university campus in a testing accommodations center normally used for administering exams to students with physical or learning disabilities. Upon entry, each subject was seated individually at a small desk enclosed by three shoulder-high dividers in such a way that they could not see any of the other participants.

Subjects first completed the trivial task of estimating the length of four lines drawn on a page without the help of a ruler. This allegedly formed the basis for division into two groups (those who overestimated and those who underestimated the length of the lines). In actuality, group assignment was random. After a research associate collected and supposedly scored the line estimations, each subject was given a booklet with a short paragraph on the cover revealing the individual results of the line estimation, as well as his or her membership in either the "overestimator" or "underestimator" group. In addition, the cover passage informed each subject of his or her group member I.D. letter (all subjects were listed as member "N") (see Appendix B).

When subjects were finished reading the cover page, they were instructed to turn to the next page and complete one half of the SSES in order to establish a baseline self-esteem level for Ss in each condition. When this was completed, subjects were asked to follow along as E carefully recited aloud the instructions for completing the allocation matrices that were to follow. As a manipulation check, each S was asked to write down his or her group name and group membership I.D. letter on the next page before continuing on to complete the matrices. In the accountability condition, subjects also

wrote their group name and subject I.D. letter, as well as their real name, on a name tag sticker that was clipped to the booklet.

When filling out the matrices, subjects allocated points (supposedly worth 25 cents each) between an anonymous member of their own ingroup and an anonymous member of the outgroup. Each matrix pits particular allocation strategies against each other. The strategies are as follows: maximum ingroup profit (MIP), in which the most possible points are awarded to the ingroup member, regardless of outgroup points; maximum joint profit (MJP), in which the most total points is awarded to both ingroup and outgroup member, regardless of which receives more; maximum difference in favor of ingroup (MD), in which the difference between amount awarded to ingroup member and amount awarded to outgroup member is the greatest, with the ingroup member receiving more; and parity (P), in which each person receives an equal amount of money. These strategies were utilized in three matrix types.

Matrix Type A consists of ingroup favoritism (a combination of the MD and MIP strategies) versus maximum joint profit (see figure 1).

Points to Member G of Underestimators	19	18	17	16	15	14	13	12	11	10	9	8	7
Points to Member M of Overestimators	1	3	5	7	9	11	13	15	17	19	21	23	25

Figure 1. Matrix Type A, FAV (MD+MIP) vs. MJP, strategies opposed.

Let us assume that the person filling out this matrix is member "N" of the Underestimator group. Member N is instructed to choose one box representing his choice of how to divide 25-cent points between member G of the Underestimators and member M of the Overestimators. In this particular matrix type, the maximum joint profit (MJP) strategy is represented at the

rightmost extreme of the matrix. Choosing this box would mean awarding 7 points to an anonymous member of N's ingroup (in this case, member G of the Underestimators) while awarding 25 points to an anonymous member of the outgroup (in this case, member M of the Overestimators), for a total of 32 total points allocated (i.e., the maximum joint profit that can be gained out of all the choices in this matrix). Choosing the 19/1 box on the leftmost extreme of this matrix would represent a choice of ingroup favoritism (FAV). That is, not only is the ingroup's profit maximized (since 19 is the most points available to award member G in this matrix), but the positive difference between the ingroup and the outgroup is also maximized. In this case, member G of the Underestimators would get 18 more points than member M of the Overestimators, the largest positive point differential available. Thus, in Matrix Type A, a subject is essentially choosing between a strategy of obtaining the most money possible out of the experimenter for both anonymous targets and a strategy of ingroup favoritism, in which a clear preference is given to the ingroup member at the expense of the outgroup member. In addition, a fairness option is available in the middle of the matrix, in which each target would receive 13 points. This option is present across all matrix types.

Matrix Type B pits a strategy of maximum differentiation in favor of the ingroup (MD) against a combination of the maximum ingroup profit (MIP) and maximum joint profit (MJP) strategies (see Figure 2). Continuing with the previous example, member N of the Underestimators is now confronted with a matrix in which maximum differentiation (MD) is represented on the rightmost end of the matrix, while maximum ingroup

profit (MIP) and maximum joint profit (MJP) are combined on the leftmost edge. This matrix measures the extent to which member N is willing to sacrifice both profit for the anonymous ingroup member (in this case, a maximum of 19 points for member L of the Underestimator group) and joint profit (44 total points available with the 19/25 choice) so that the ingroup member can achieve relatively more than the outgroup member (only 7 points for member L and 8 points total, but a positive differential of 6 points for the 7/1 choice).

Points to Member L of Underestimators	19	18	17	16	15	14	13	12	11	10	9	8	7
Points to Member K of Overestimators	25	23	21	19	17	15	13	11	9	7	5	3	1

Figure 2. Matrix Type B, MD vs. MIP+MJP, strategies opposed.

Finally, Matrix Type C features ingroup favoritism (FAV) versus a strategy of parity, or equality (see Figure 3). Assuming again that member N of the Underestimators is filling out this matrix, the leftmost option represents parity, in which each target receives 16 points. On the other side is the familiar combination of maximum differential in favor of the ingroup (MD) and maximum ingroup profit (MIP), together called ingroup favoritism (FAV). This matrix represents perhaps the plainest test of discrimination - that is, whether the individual is being "fair" or biased to some degree in favor of his or her own ingroup.

Points to Member H of Underestimators	16	17	18	19	20	21	22	23	24	25	26	27	28
Points to Member O of Overestimators	16	15	14	13	12	11	10	9	8	7	6	5	4

Figure 3. Matrix Type C, P vs. FAV, strategies opposed.

As always awarded points to two other anonymous subjects, never directly to themselves, although they were told they would receive whatever

amount that the other subjects awarded to them. The 3 types of matrices were each presented once with the ingroup member in the top row and the outgroup member in the bottom row, once with the outgroup member on the top row and the ingroup member on the bottom row, and with the actual rows and columns reversed for each of these. Thus, in all, each subject completed 12 matrices.

When all subjects were finished completing the matrices, the booklets were collected and the posttest version of the SSES was administered. In the interest of fairness and parsimony, each subject actually received one dollar (instead of the true amount others allocated to them). The experiment was then concluded and subjects were carefully debriefed.

In the accountability condition, subjects were told to wear their name tag sticker, and that after they filled out their booklets, they would be sent to another room to discuss their allocation decisions with two members of the respective outgroup. In the control condition, no mention was made of confronting other group members or revealing group membership during the experiment itself.

Subjects were led to believe that their ingroup was of either high or low status. This was operationalized as a characteristic of overestimators or underestimators. In the passage on the cover of the booklets, subjects were told that their group (overestimators or underestimators) tend to be more or less accurate judges in perceptual tasks, such as line estimation. In addition, they were told that their group represents a numerical majority (80% of the general population is also an over/underestimator) or a minority (20% of the general population is also an over/underestimator) (see Appendix A).

Data Analysis

Allocation decisions on the Tajfel matrices were analyzed using "pull scores". As described earlier, the three matrix types represent the opposition of two strategies against each other. These are: FAV (ingroup favoritism represented by a combination of the MD and MIP strategies) vs. MJP (maximum joint profit), MD (maximum differential in favor of the ingroup) vs. MIP+MJP (a strategy featuring the most points overall to both targets, as well as a maximization of the ingroup profit), and FAV vs. P (parity, referred to elsewhere as fairness). In presenting each matrix type in two versions (an I/O version with the ingroup on top/outgroup on bottom, and an O/I version, with the outgroup on top/ingroup on bottom), the relative strength, or "pull", of one strategy on another can be measured (for a more detailed explanation of pull score measurement and analysis, see Bourhis et al., 1994). Returning to the earlier example of Matrix Type A (FAV vs. MJP), let us say that member N of the Underestimators responded to two versions (referred to as Version 1 and Version 2) of this matrix in the manner shown in Figure 4. Notice that although the arrangement of points is the same for both matrices, the anonymous Underestimator appears on the bottom row in Version 2, while the anonymous Overestimator appears in the top row. Notice also that, from the point of view of an Underestimator, the strategies now coincide at the rightmost end of Version 2. That is, the 7/25 box now represents both FAV (maximum differential in favor of the ingroup, 18, plus maximum ingroup profit, 25) and MJP (maximum joint profit, 32). Thus, version 1 is known as a strategies opposed (O) matrix, while version 2 is a strategies together (T) matrix (from the point of view of an Underestimator).

Examples of opposed and together versions of each matrix type are presented in Appendix A.

Version 1	x												
Points to Member G of Underestimators	19	18	17	16	15	14	13	12	11	10	9	8	7
Points to Member M of Overestimators	1	3	5	7	9	11	13	15	17	19	21	23	25

Version 2	x												
Points to Member D of Overestimators	19	18	17	16	15	14	13	12	11	10	9	8	7
Points to Member J of Underestimators	1	3	5	7	9	11	13	15	17	19	21	23	25

Figure 4. Sample response of member N of Underestimator Group.

In order to calculate pull scores for these two strategies, one must first establish which pull to begin with. In this case, we will start with the pull of FAV on MJP. Since we're interested in this pull, the location of MJP will serve in both versions as an anchor point from which each box will be numbered from 0 to 12. Thus, in each version, box 7/25 will be ranked 0 and box 19/1 will be ranked 12. Member N's Opposed (O) Rank Score from Version 1, then, is 10, while his Together (T) Rank Score from Version 2 is 2. To calculate the pull of FAV on MJP, we simply subtract the Together Rank Score from the Opposed Rank Score, revealing a score of +8 ($10 - 2 = 8$), representing the relative strength, or pull, of FAV on MJP. To obtain the pull of MJP on FAV, the Opposed Rank Score is subtracted from 12, and the Together Rank Score is subtracted from this difference, producing a value of 0 ($[(12-10) - 2 = 0]$). Theoretically, pull scores can range in value from -12 to +12.

The administration of two additional versions of each matrix type (I/O and O/I with rows and columns reversed) allows for each subject to act as his or her own control against superfluous or random decisions, since these will result in a tendency toward zero pull when averaged against the initial versions. For each subject, then, six pull scores were calculated: the pull of

FAV on MJP, MJP on FAV, MD on MIP+MJP, MIP+MJP on MD, FAV on P, and P on FAV. Three of these, FAV on MJP, MD on MIP+MJP, and FAV on P, represent strategies which clearly favor the ingroup over the outgroup. The other strategies (MJP on FAV, MIP+MJP on MD, and P on FAV) represent more economically or ethically rational decisions.

Following Bourhis et al. (1994), two analyses are typically employed for pull scores, one within subjects and one between. The two rank components of each pull score were examined using two-tailed t -tests to see if the pull differs significantly from zero. Next, 2 (accountability vs. no accountability) \times 2 (relative group size, majority vs. minority) \times 2 (relative group status, high vs. low) ANOVAs were run for each strategy (FAV on MJP, MD on MIP+MJP, etc.) to determine between-group differences.

Analysis of SSES scores was conducted by comparing pretest and posttest scores for those subjects who, according to high pull scores for FAV on MJP, MD on MIP+MJP, or FAV on P, engaged in discrimination.

CHAPTER THREE

Results

Hypothesis 1 predicted that subjects would show less ingroup favoritism when held accountable for their allocation decisions than subjects who were not held accountable. The pattern of mean pull scores seems to support this (see Table 1). While every other group employed at least one of the three discrimination strategies (FAV on MJP, MD on MIP+MJP, or FAV on P), the only strategy employed with statistical significance in the Accountable/Majority group (for both high and low ingroup status) was parity. An Analysis of Variance for FAV on MJP yielded a main effect for accountability, $F(1,89)=4.49$, $p<.05$, indicating that accountable subjects chose ingroup favoritism over maximum joint profit less than non-accountable subjects, thereby offering further support for Hypothesis 1. Thus, while ANOVAs for the other discriminatory allocation strategies (MD on MIP+MJP and FAV on P) failed to yield main effects for accountability, the preceding analyses provide Hypothesis 1 with support.

Table 1

Mean Pull Scores by Accountability, Relative Ingroup Size, and Relative Group Status

Allocation Strategy	Minority		Majority	
	Low Status	High Status	Low Status	High Status
	Not Accountable			
FAV on MJP	1.50 (3.52)*	3.15 (6.25)	3.41 (5.06)*	3.68 (4.33)*
MD on MIP+MJP	-0.38 (2.51)	3.19 (5.02)*	4.00 (4.42)*	2.05 (2.23)*
FAV on P	.92 (2.54)	1.15 (5.84)	2.05 (5.02)	2.45 (4.90)
MJP on FAV	-0.73 (5.45)	0.54 (2.87)	1.77 (6.47)	0.04 (2.64)
MIP+MJP on MD	2.23 (6.98)	1.88 (5.68)	1.45 (6.30)	1.95 (6.01)
P on FAV	8.31 (3.95)***	2.85 (5.56)	3.86 (7.07)	6.64 (4.84)**
	Accountable			
FAV on MJP	0.32 (2.93)	2.32 (3.70)	0.46 (3.90)	1.42 (2.41)
MD on MIP+MJP	2.14 (4.10)	2.86 (3.26)*	0.82 (3.88)	0.42 (3.41)
FAV on P	3.64 (3.54)**	1.68 (4.00)	0.11 (3.52)	0.88 (2.13)
MJP on FAV	-0.77 (4.20)	0.50 (1.25)	0.61 (2.63)	-0.19 (3.05)
MIP+MJP on MD	0.86 (4.39)	1.68 (5.33)	0.39 (3.31)	-0.12 (3.25)
P on FAV	5.91 (3.77)***	6.68 (4.82)**	5.54 (4.21)***	6.42 (5.24)**

Note. Standard Deviations are in parentheses. Pull scores for each allocation strategy can range from -12 to +12. MJP = maximum joint profit; MIP = maximum ingroup profit; MD = maximum difference in favor of ingroup; P = parity; FAV = ingroup favoritism (MD+MIP). Cell ns range from 11 to 14.
* $p < .05$, ** $p < .01$, *** $p < .001$, two-tailed t-tests.

Hypotheses 2a, 2b, and 2c predicted that members of low status and/or minority groups would discriminate more than members of high status and/or majority groups because the former should have experienced a threatened social identity. These results were not supported in the form of ANOVA main effects, although ANOVAs revealed a relative group size by relative group status interaction for the MD on MIP+MJP strategy, $F(1, 89) = 4.81, p < .05$. An analysis of simple effects revealed that high status subjects discriminated more than low status subjects in the minority condition, $F(1, 46) = 4.12, p < .05$, while the difference within the majority condition was not statistically significant (see Figure 5).

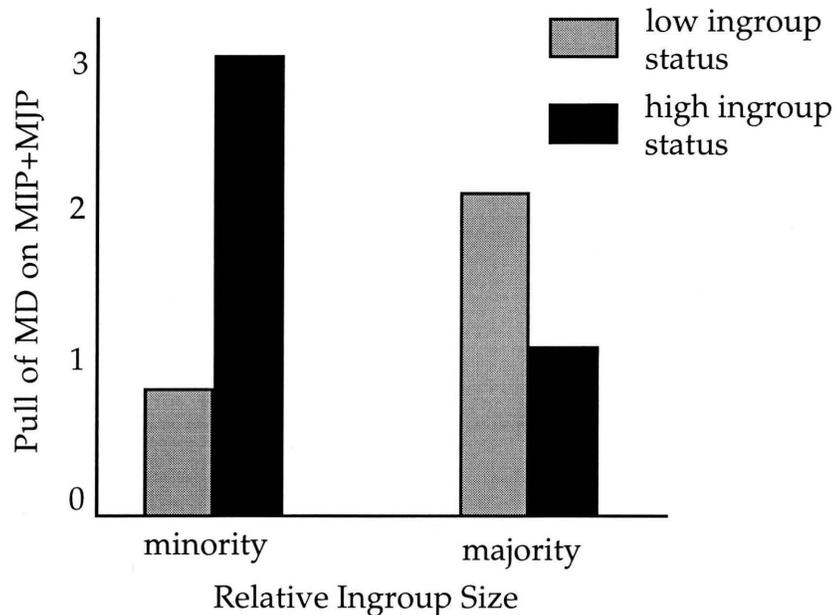


Figure 5. Visual representation of Relative Ingroup Status by Relative Ingroup Size interaction for MD on MIP+MJP strategy.

This effect is inconsistent with a Social Identity interpretation. It would be expected that low status/minority subjects would experience a threatened social identity and, therefore, implement the MD on MIP+MJP

strategy more than high status subjects. Instead, the opposite was true in the minority condition, while the predicted difference in the majority condition was not statistically significant.

The ANOVA for P on FAV exposed a similar pattern, revealing a three-way interaction, $F(1, 89) = 3.96, p < .05$, and a two-way interaction for ingroup status by relative ingroup size, $F(1, 89) = 4.19, p < .05$.

According to Keppel (1991), "a three-way interaction means that the simple interactions of two of the factors are not the same at all levels of the third" (p. 455). In this case, post-hoc analysis of the three-way interaction showed that, within the non-accountable condition, low status/minority subjects used the P on FAV strategy more than high status/minority subjects, $F(1, 24) = 8.33, p < .01$, while there were no significant differences among relative group size and status in the accountable condition (see Figure 6). Again, the low status/minority group adopted an unexpected strategy, utilizing fairness rather than abandoning such a tactic in favor of a more discriminatory strategy.

The two-way interaction reveals the same pattern, although an analysis of simple effects revealed no significant differences among the levels of relative group status and size (see Figure 7). This is probably due to the nature of the three-way interaction described above, in which the relative status by relative size interaction exists solely in the non-accountable condition. Thus, collapsing the levels of accountability together dilutes the effect.

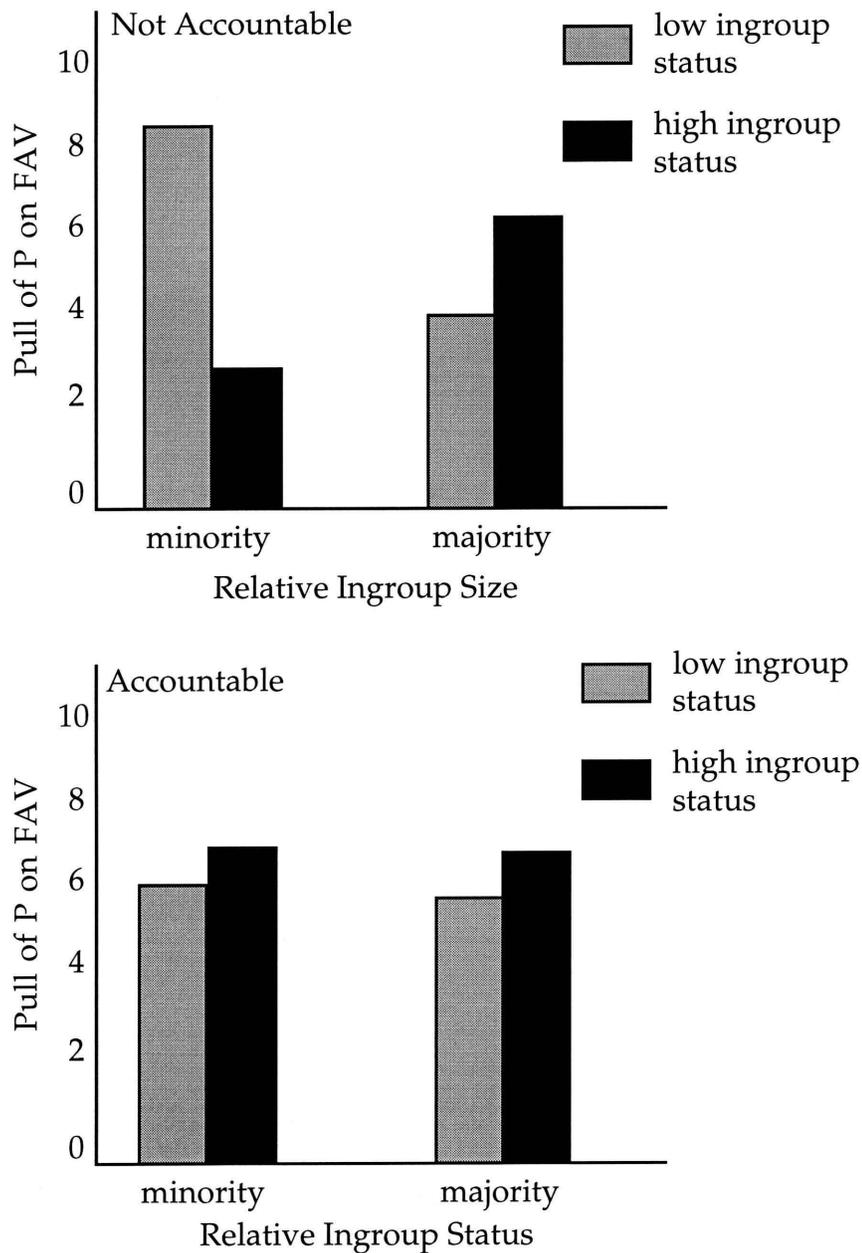


Figure 6. Visual representation of 3-way interaction between Accountability, Relative Group Status, and Relative Group Size for P on FAV strategy. The top graph represents nonaccountable subjects, while the bottom graph represents accountable subjects.

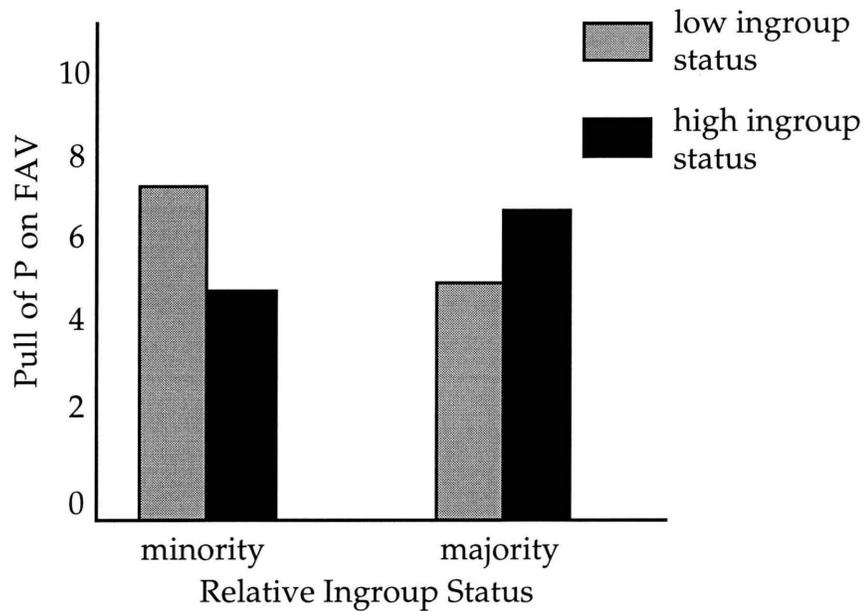


Figure 7. Visual representation of Relative Ingroup Size by Relative Ingroup Status interaction for P on FAV strategy.

For each of the preceding ANOVA interactions, the low status/minority condition proved problematic, in that, given a presumed highly threatened social identity, pull scores for MD on MIP+MJP were far less than expected, while pull scores for P on FAV were far higher than expected, indicating that nondiscriminatory strategies were being employed by these subjects. Thus, not only were Hypotheses 2a, 2b, and 2c not supported, but the data actually ran counter to predictions for low status/minority subjects.

Hypothesis 3 predicted that, due to the aggravation hypothesis, even accountable subjects would display ingroup favoritism when their group was of low status and in a comparative minority. This pattern can be seen most clearly by referring back to Table 1. Indeed, for accountable/minority/low status subjects, FAV on P proved to be an influential choice in addition to P

on FAV, which was the prevailing strategy for all accountable subgroups. Furthermore, accountable/minority/high status subjects also employed a discriminatory allocation strategy (MD on MIP+MJP). The effect is more pronounced when compared with accountable/majority subjects who, across status levels, failed to employ any strategies with statistical significance other than parity (P on FAV). This pattern is consistent with present expectations, because, while accountable subjects might have felt pressure to employ parity, they were also in a position of threatened social identity and therefore employed discriminatory strategies in addition to the "fairer" parity strategy.

This finding is corroborated by an interaction effect for accountability by relative group size in ANOVAs for both FAV on P, $F(1, 89) = 4.12, p < .05$, and MD on MIP+MJP, $F(1, 89) = 5.30, p < .05$ (see Figures 8 and 9, respectively). In both cases, accountable subjects who were in a numerical minority employed discrimination far more than those who were in the majority. This supports the notion that accountable/majority subjects had neither the reason nor the motivation to discriminate, while accountable/minority subjects experienced a threatened social identity, and therefore favored their own ingroup over the outgroup in an effort to reduce this threat, despite the knowledge that they would be held accountable for their choices. These results, combined with the previously discussed pattern of mean pull scores across conditions, support Hypothesis 3.

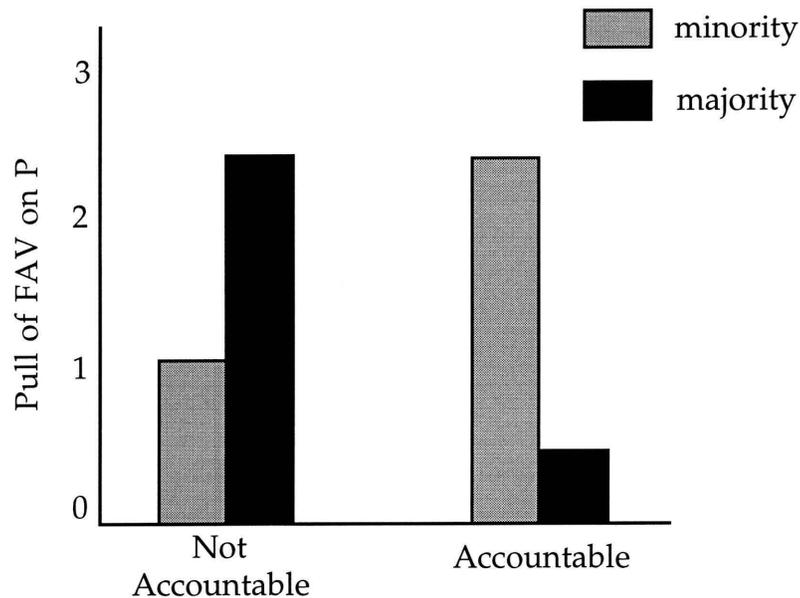


Figure 8. Visual representation of Accountability by Relative Group Size interaction for FAV on P strategy.

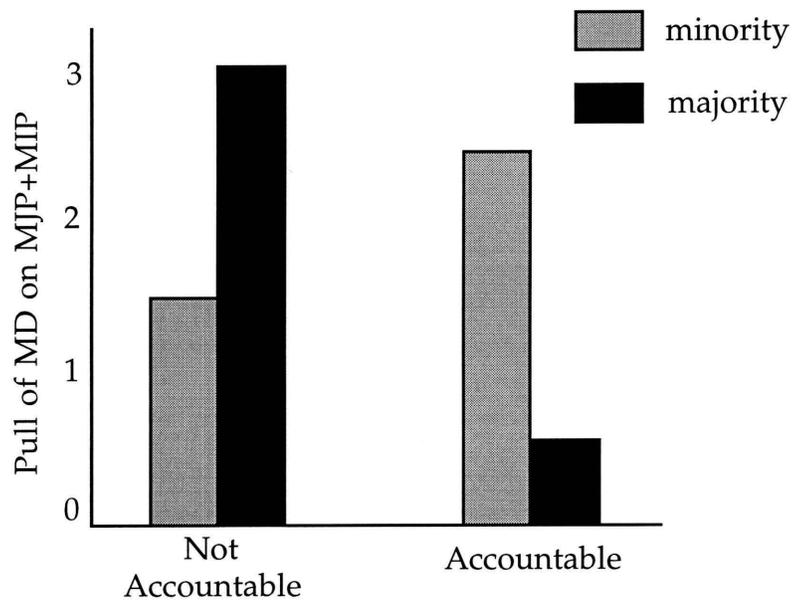


Figure 9. Visual representation of Accountability by Relative Group Size interaction for MD on MIP+MJP strategy.

Finally, Hypothesis 4 predicted an increase in self-esteem for those subjects who employ discriminatory strategies. This was operationalized by

selecting those subjects who achieved pull scores greater than 1 standard deviation above the mean for at least one of the three discriminatory pulls (FAV on MJP, MD on MIP+MJP, and FAV on P). Results indicated no difference between pre- and post-test scores for either the entire scale, or for selected social factor sub-items (items 5, 9, and 10 for the pretest and items 1, 6, and 7 for the posttest). Thus, Hypothesis 4 was not supported.

CHAPTER 4

Discussion

Accountability Effects

In examining the results, it is apparent that accountability was indeed a factor in subjects' allocation decisions. The support of Hypotheses 1 and 3 clearly indicate the influence that occurred when subjects felt they would have to justify their allocation decisions to others. In fact, during the experiment itself, it seemed that there were more questions asked of the Experimenter regarding the matrices in the accountable condition than in the non accountable condition. This suggests that subjects may have been thinking more carefully about their decisions and wanted to be sure they understood the exact nature of the allocation task before going on.

Such a finding strengthens the notion, initially proposed by Mummendey and her associates, that discrimination in terms of a mere categorization effect holds only under certain conditions which happened to be present in classic minimal group studies. When certain factors or layers (such as negative allocations or, in this case, accountability) are added on to a minimal intergroup situation, discrimination will disappear. Furthermore, the findings in support of Hypothesis 3 contribute to the notion of an aggravation effect; when subjects were placed into subordinated groups (thus threatening social identity), the familiar discrimination was evident. Thus, this experiment may have uncovered a new kind of inconsistency effect. In keeping with Mummendey's nomenclature, this can be thought of as an "accountability asymmetry effect."

Finally, the accountability findings in this study help strengthen Mummendey's (1995) speculation that more careful thought is at least partly responsible for the disappearance of discrimination. While this hypothesis was not directly tested here, research suggests that the accountability construct represents a more direct linkage to careful thought than allocation valence (Cvetkovich, 1978; Tetlock, 1983).

Relative Group Size and Status Effects

The lack of support for Hypotheses 2a, 2b, and 2c represents a particularly interesting result. It was expected that subjects in the minority/low status condition would experience threatened social identity, since they were doubly subordinated with respect to the outgroup - they were supposedly among the few who were less accurate at the line estimation task which was the basis for group formation. Accordingly, it was thought that these subjects would engage in ingroup-favoring strategies more than any other subgroup. Instead, this group engaged in just one ingroup-favoring strategy (FAV on MJP) and used a strategy of "fairness", or parity, more than any other group on average ($M = 8.31$). It might be that, for these individuals, social identity was not just threatened, but actually damaged in this scenario. In this case, the choice of parity, while not normally representing a strategy that would increase social identity, may have represented an opportunity to exist on an "even keel" with most of the other participants who are better at perceptual tasks.

Self-Esteem Effects

The lack of support for Hypothesis 4 may have been due to a number of causes. Social Identity Theory's self-esteem hypothesis has been examined in

numerous studies during the past 18 years with mixed results (Rubin and Hewstone, 1998). Part of the problem lies in the relationship between the type of self-esteem maintenance that is purported to exist in Social Identity Theory and the type of scale used to measure self-esteem in experimental studies. As Rubin and Hewstone (1998) point out, there are three factors that can affect the kind of self-esteem one is studying. One is global versus specific self-esteem. "Global self-esteem refers to the esteem in which one holds one's overall self-image, whereas specific self-esteem refers to the esteem in which one holds a particular self-image" (p. 42). Another is trait versus state self-esteem. "Trait self-esteem is the product of self-evaluations made over a relatively long period of time, whereas state self-esteem is the product of self-evaluations carried out in the immediate present" (p. 42). Finally, there is the important distinction between personal and social self-esteem. Social self-esteem is defined as "the esteem in which [individuals] hold the shared self-image that constitutes their social psychological ingroup" (p. 42). Conversely, personal self-esteem refers to how one feels about oneself as an individual. According to Social Identity Theory, the type of self-esteem that is relevant in a minimal group situation is specific/state/social self-esteem. This is not to say that the different types of self-esteem are orthogonal to each other - rather, they are different subsets of one's overall self-esteem that, if tracked specifically, might yield more accurate results.

In order to tap into the momentary self-esteem changes that were expected to exist in this study, Heatherton and Polivy's (1991) State Self-Esteem Scale was employed. While this scale purports to measure momentary changes in self-esteem, it focuses on global (rather than specific)

and personal (rather than social) self-esteem. It might have been that the attempt here to measure global/personal self-esteem change in a minimal group setting is analogous to throwing a rock into a swimming pool and measuring the change in water level.

Thus, the failure of the SSES to measure subjects' feelings about their specific social ingroup in this experiment may have contributed to the lack of self-esteem results, despite the analysis of "social" sub-items. These sub-items, however, only vaguely refer to the esteem one holds of his or her ingroup, instead focusing more on the way others view him or her as an individual. Examples of such items are, "I am worried about looking foolish" and "I am worried about what other people think of me." Because of the absence of a measurement that taps into specific/state/social self-esteem, it is recommended that future research seek to devise such a scale so that SIT's self-esteem hypothesis can be properly measured and verified. Items in such a scale might include, "I feel good about being in the Underestimator group" or "I am relieved not to be a member of the Overestimator group."

Aside from scaling issues, there may have been a time latency contamination as a result of the experimental procedure. The experiment was conducted in unison, with all subjects instructed to complete each task at the same time. To avoid a testing bias resulting from subjects looking at their self-esteem pretest responses, the post-test was administered after their booklets were collected. When they completed their matrices (the last items in the booklet), they were asked to wait until all subjects had finished before their materials would be collected. This resulted in a time latency of up to 5 minutes for many subjects, since it was usually only one or two subjects that

took longer than the rest to complete their booklets. Thus, when the self-esteem posttest was finally administered, it might have been that any change in self-esteem as a result of engaging in ingroup favoritism had already dissipated.

General Discussion

The results of this experiment suggest that the traditional conceptualization of a minimal group is at least partially misleading. Instead of establishing a ground-level intergroup situation, the MGP represents a scenario in which discrimination is somewhat fostered, so that adding certain "layers" of real group characteristics (in this case, accountability) to the paradigm can result in less (rather than more) discrimination. Thus, while Tajfel and his associates initially were attempting to remove these intergroup characteristics, they were, in fact, unwittingly adding certain elements (such as positive reward allocations and non accountability) that promote discrimination.

In looking at the focus that intergroup research has given to the minimal group paradigm, it might be fruitful to take a step back at this point. Ultimately, the goal of research in intergroup relations is to better understand the processes that are at work - i.e., to understand how and why we discriminate so that harmful real world discrimination might be reduced. By analyzing behavior at a minimal intergroup level that is characterized by trivial criteria and unrealistic conditions, we are limiting ourselves in the pursuit of this original endeavor. The baseline conditions established in the early minimal group experiments have led to a baseline understanding of intergroup relations. By systematically moving toward more realistic groups

examining various group characteristics across studies, the knowledge we already have can be combined with new discoveries about the effects of the various components of group membership and the psychological, behavioral, and communicative effect they have, both in isolation and in combination with each other. In this way, the existing theories that we have (particularly Social Identity Theory) might be refined and expanded so as to better predict and explain intergroup relations.

It should be noted that the direction of research being advocated here is in no way meant to cut down Social Identity Theory or discount the major importance that both SIT and the minimal group paradigm have had in furthering understanding and promoting research in the intergroup arena. Rather, it is suggested that the considerable energies that have been directed toward this area be harnessed so that the ultimate aim of the research can be better achieved. Tajfel himself once referred to the original minimal group studies as "crutches" on which to base further thinking (1978, p. 77). It seems as though research since his death has largely forgotten this caveat. Hopefully, the results of this experiment will serve in part as a reminder.

APPENDIX A
EXAMPLES OF TAJFEL MATRICES

**Examples of Response Matrix Types for a member of group "Z"
(actual matrices were presented one-per-page in random order)**

Type A - FAV (MD+MIP) vs. MJP, strategies opposed

Points to Member Q of Group Z	19	18	17	16	15	14	13	12	11	10	9	8	7
Points to Member R of Group W	1	3	5	7	9	11	13	15	17	19	21	23	25

Points awarded to Member Q of Group Z: ____

Points awarded to Member R of Group W: ____

Type B - MD vs. MIP+MJP, strategies together at right extreme

Points to Member J of Group Z	1	3	5	7	9	11	13	15	17	19	21	23	25
Points to Member F of Group W	7	8	9	10	11	12	13	14	15	16	17	18	19

Points awarded to Member J of Group Z: ____

Points awarded to Member F of Group W: ____

Type C - FAV vs. P, strategies opposed

Points to Member L of Group Z	16	17	18	19	20	21	22	23	24	25	26	27	28
Points to Member D of Group W	16	15	14	13	12	11	10	9	8	7	6	5	4

Points awarded to Member L of Group Z: ____

Points awarded to Member D of Group W: ____

Type A - FAV (MD+MIP) vs. MJP, strategies together at left extreme

Points to Member T of Group Z	25	23	21	19	17	15	13	11	9	7	5	3	1
Points to Member H of Group W	7	8	9	10	11	12	13	14	15	16	17	18	19

Points awarded to Member T of Group Z: ____

Points awarded to Member H of Group W: ____

Type B - MD vs. MIP+MJP, strategies opposed

Points to Member C of Group Z	19	18	17	16	15	14	13	12	11	10	9	8	7
Points to Member E of Group W	25	23	21	19	17	15	13	11	9	7	5	3	1

Points awarded to Member C of Group Z: ____

Points awarded to Member E of Group W: ____

Type C - FAV (MD+MIP) vs. P, strategies together at right extreme

Points to Member P of Group Z	4	5	6	7	8	9	10	11	12	13	14	15	16
Points to Member I of Group W	28	27	26	25	24	23	22	21	20	19	18	17	16

Points awarded to Member P of Group Z: ____

Points awarded to Member I of Group W: ____

APPENDIX B
SAMPLE RESPONSE BOOKLET AND SELF-ESTEEM POSTTEST

Based on your responses in Part I of the experiment, you are among those in this room who, on average, overestimated the length of the lines shown to you. Research has shown that approximately 80% of the general population are, like you, overestimators. Further research has shown that overestimators tend to be less accurate in perceptual tasks (such as the line estimation you just did) than underestimators.

For convenience, we will use the groups formed in part I of the experiment (overestimators and underestimators) for part II. In this portion of the experiment, you will be allocating points, worth 25 cents each, to other participants in this room. For identification purposes, you have been assigned an identification number to go along with your group membership. You are Member N of the overestimator group.

Please wait for instructions on how to complete part II of the experiment.

Instructions: This is a questionnaire designed to measure what you are thinking at this moment. There is, of course, no right answer for any statement. The best answer is what you feel is true of yourself at this moment. Be sure to answer all the items, even if you are not certain of the best answer. Again, answer these questions as they are true for you RIGHT NOW. When you finish, wait for instructions.

1. I feel confident in my abilities.

a	b	c	d	e
not at all	a little bit	somewhat	very much	extremely

2. I feel like I'm not doing well.

a	b	c	d	e
not at all	a little bit	somewhat	very much	extremely

3. I feel I am having trouble understanding things that I read.

a	b	c	d	e
not at all	a little bit	somewhat	very much	extremely

4. I feel satisfied with the way my body looks right now.

a	b	c	d	e
not at all	a little bit	somewhat	very much	extremely

5. I am worried about whether I am regarded as a success or failure.

a	b	c	d	e
not at all	a little bit	somewhat	very much	extremely

6. I feel that others respect and admire me.

a	b	c	d	e
not at all	a little bit	somewhat	very much	extremely

7. I feel unattractive.

a	b	c	d	e
not at all	a little bit	somewhat	very much	extremely

8. I feel frustrated or rattled about my performance.

a	b	c	d	e
not at all	a little bit	somewhat	very much	extremely

9. I am worried about what other people think of me.

a	b	c	d	e
not at all	a little bit	somewhat	very much	extremely

10. I feel inferior to others at this moment.

a	b	c	d	e
not at all	a little bit	somewhat	very much	extremely

Instructions

Here is the way to complete your response booklet. Each of the following pages in the response booklet contains one matrix. A matrix consists of 13 boxes, each containing two numbers. On each matrix you are to award points (each worth 25 cents) to two other people in this room. One row of numbers within the boxes are the points to be awarded to an individual from the "Overestimator" group, and the other row are points to be given to a different individual from the "Underestimator" group. After looking at each box of the matrix, you must choose only one box that represents your choice of how you wish to award the points.

Let me give you an example of how to use the matrix. Let us say you are faced with the following matrix that we have on display for you below. In addition to your group label, each of you has received a personal identification letter.

Points to Member A of Overestimators	11	12	13	14	15	16	17	18	19	20	21	22	23
Points to Member B of Underestimators	5	7	9	11	13	15	17	19	21	23	25	27	29

Points given to Member A of Overestimator group: _____

Points given to Member B of Underestimator group: _____

Now suppose you are distributing points for Member "A" of the Overestimator group and Member "B" of the Underestimator group. Consider all the numbers in the boxes, as there are a variety of choices you can make. Let us say that you decide to choose a box toward the left-hand edge of this matrix, for example, box

11
5

	x												
Points to Member A of Overestimators	11	12	13	14	15	16	17	18	19	20	21	22	23
Points to Member B of Underestimators	5	7	9	11	13	15	17	19	21	23	25	27	29

This means that you decide to give 11 points to Member A of the Overestimator group and 5 points to Member B of the Underestimator group. Alternatively, you might choose box

15
13

		x											
Points to Member A of Overestimators	11	12	13	14	15	16	17	18	19	20	21	22	23
Points to Member B of Underestimators	5	7	9	11	13	15	17	19	21	23	25	27	29

This means you are giving 15 points to Member A of the Overestimators and 13 points to Member B of the Underestimators. On the other hand, you might decide to choose box

17
17

				x									
Points to Member A of Overestimators	11	12	13	14	15	16	17	18	19	20	21	22	23
Points to Member B of Underestimators	5	7	9	11	13	15	17	19	21	23	25	27	29

which means that Member A of the Overestimators and Member B of the Underestimators each get 17 points.

(TURN THE PAGE)

Before you begin, please write your member I.D. letter and your group name below.

Your Member I.D. letter:

Your Group:

Points to Member G of Underestimators
Points to Member M of Overestimators

19	18	17	16	15	14	13	12	11	10	9	8	7
1	3	5	7	9	11	13	15	17	19	21	23	25

Points given to Member G of Underestimator group: _____

Points given to Member M of Overestimator group: _____

Points to Member E of Underestimators
Points to Member F of Overestimators

25	23	21	19	17	15	13	11	9	7	5	3	1
7	8	9	10	11	12	13	14	15	16	17	18	19

Points given to Member E of Underestimator group: _____

Points given to Member F of Overestimator group: _____

Points to Member D of Overestimators
Points to Member J of Underestimators

19	18	17	16	15	14	13	12	11	10	9	8	7
1	3	5	7	9	11	13	15	17	19	21	23	25

Points given to Member D of Overestimator group: _____

Points given to Member J of Underestimator group: _____

Points to Member A of Overestimators
Points to Member T of Underestimators

25	23	21	19	17	15	13	11	9	7	5	3	1
7	8	9	10	11	12	13	14	15	16	17	18	19

Points given to Member A of Overestimator group: _____

Points given to Member T of Underestimator group: _____

Points to Member L of Underestimators
Points to Member K of Overestimators

19	18	17	16	15	14	13	12	11	10	9	8	7
25	23	21	19	17	15	13	11	9	7	5	3	1

Points given to Member L of Underestimator group: _____

Points given to Member K of Overestimator group: _____

Points to Member U of Underestimators
Points to Member Z of Overestimators

1	3	5	7	9	11	13	15	17	19	21	23	25
7	8	9	10	11	12	13	14	15	16	17	18	19

Points given to Member U of Underestimator group: _____

Points given to Member Z of Overestimator group: _____

Points to Member C of Overestimators
Points to Member B of Underestimators

19	18	17	16	15	14	13	12	11	10	9	8	7
25	23	21	19	17	15	13	11	9	7	5	3	1

Points given to Member C of Overestimator group: _____

Points given to Member B of Underestimator group: _____

Points to Member R of Overestimators
Points to Member Q of Underestimators

1	3	5	7	9	11	13	15	17	19	21	23	25
7	8	9	10	11	12	13	14	15	16	17	18	19

Points given to Member R of Overestimator group: _____

Points given to Member Q of Underestimator group: _____

Points to Member H of Underestimators
Points to Member O of Overestimators

16	17	18	19	20	21	22	23	24	25	26	27	28
16	15	14	13	12	11	10	9	8	7	6	5	4

Points given to Member H of Underestimator group: _____

Points given to Member O of Overestimator group: _____

p/fv (flp)

Points to Member Y of Underestimators
Points to Member I of Overestimators

4	5	6	7	8	9	10	11	12	13	14	15	16
28	27	26	25	24	23	22	21	20	19	18	17	16

Points given to Member Y of Underestimator group: _____

Points given to Member I of Overestimator group: _____

p/fv (flprev)

Points to Member P of Overestimators
Points to Member S of Underestimators

16	17	18	19	20	21	22	23	24	25	26	27	28
16	15	14	13	12	11	10	9	8	7	6	5	4

Points given to Member P of Overestimator group: _____

Points given to Member S of Underestimator group: _____

Points to Member V of Overestimators	4	5	6	7	8	9	10	11	12	13	14	15	16
Points to Member F of Underestimators	28	27	26	25	24	23	22	21	20	19	18	17	16

Points given to Member V of Overestimator group: _____

Points given to Member F of Underestimator group: _____

Instructions: This is a questionnaire designed to measure what you are thinking at this moment. There is, of course, no right answer for any statement. The best answer is what you feel is true of yourself at this moment. Be sure to answer all the items, even if you are not certain of the best answer. Again, answer these questions as they are true for you RIGHT NOW.

1. I feel self-conscious.

a	b	c	d	e
not at all	a little bit	somewhat	very much	extremely

2. I feel good about myself.

a	b	c	d	e
not at all	a little bit	somewhat	very much	extremely

3. I feel as smart as others.

a	b	c	d	e
not at all	a little bit	somewhat	very much	extremely

4. I feel confident that I understand things.

a	b	c	d	e
not at all	a little bit	somewhat	very much	extremely

5. I am pleased with my appearance right now.

a	b	c	d	e
not at all	a little bit	somewhat	very much	extremely

6. I am worried about looking foolish.

a	b	c	d	e
not at all	a little bit	somewhat	very much	extremely

7. I feel concerned about the impression I am making.

a	b	c	d	e
not at all	a little bit	somewhat	very much	extremely

8. I feel that I have less scholastic ability right now than others.

a	b	c	d	e
not at all	a little bit	somewhat	very much	extremely

9. I feel displeased with myself.

a	b	c	d	e
not at all	a little bit	somewhat	very much	extremely

10. I am dissatisfied with my weight.

a	b	c	d	e
not at all	a little bit	somewhat	very much	extremely

APPENDIX C
STATE SELF-ESTEEM SCALE (SSES)

The State Self-Esteem Scale and Factor Loadings
(adapted from Heatherton & Polivy, 1991, p. 898)

Item	Primary factor	Loading	r
1. I feel confident in my abilities.	Performance	.65	.64
2. I am worried about whether I am regarded as a success or failure. (R)	Social	.61	.51
3. I feel satisfied with the way my body looks right now.	Appearance	.83	.54
4. I feel frustrated or rattled about my performance. (R)	Performance	.47	.54
5. I feel that I am having trouble understanding things that I read. (R)	Performance	.47	.41
6. I feel that others respect and admire me.	Appearance	.34	.43
7. I am dissatisfied with my weight. (R)	Appearance	.69	.44
8. I feel self-conscious. (R)	Social	.54	.60
9. I feel as smart as others.	Performance	.68	.55
10. I feel displeased with myself. (R)	Social	.37	.74
11. I feel good about myself.	Appearance	.52	.71
12. I am pleased with my appearance right now.	Appearance	.72	.59
13. I am worried about what other people think of me. (R)	Social	.75	.59
14. I feel confident that I understand things.	Performance	.62	.52
15. I feel inferior to others at this moment.	Social	.45	.66
16. I feel unattractive. (R)	Appearance	.54	.69
17. I feel concerned about the impression I am making.	Social	.81	.47
18. I feel that I have less scholastic ability right now than others. (R)	Performance	.55	.61
19. I feel like I'm not doing well. (R)	Performance	.51	.60
20. I am worried about looking foolish. (R)	Social	.62	.58

Note. Coefficient alpha for whole scale = .92. r refers to corrected item-total correlations. (R) indicates reverse scoring.

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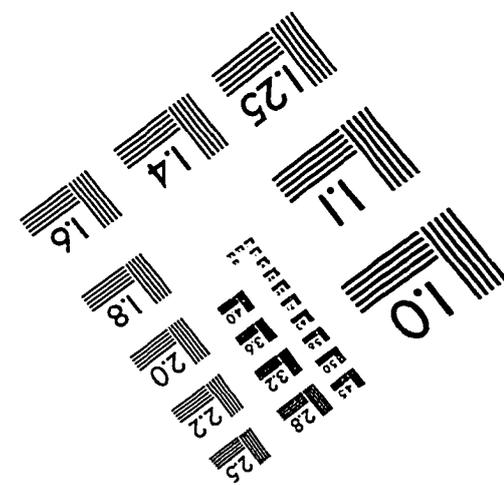
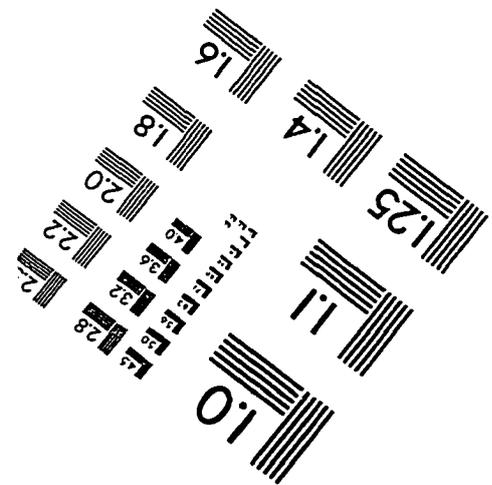
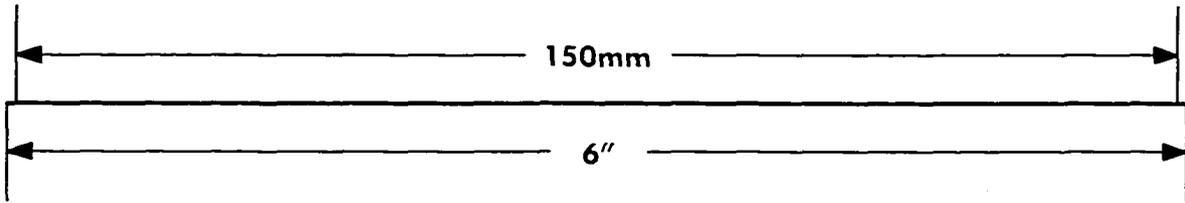
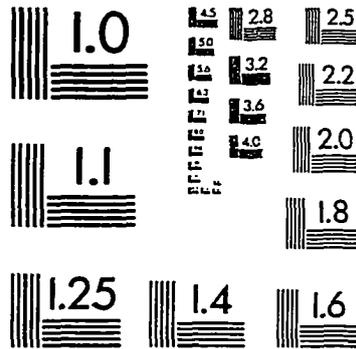
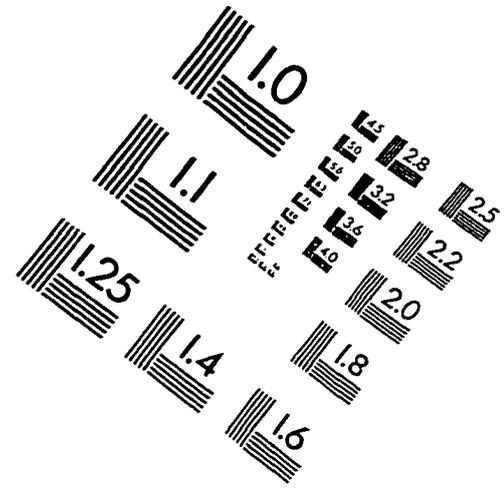
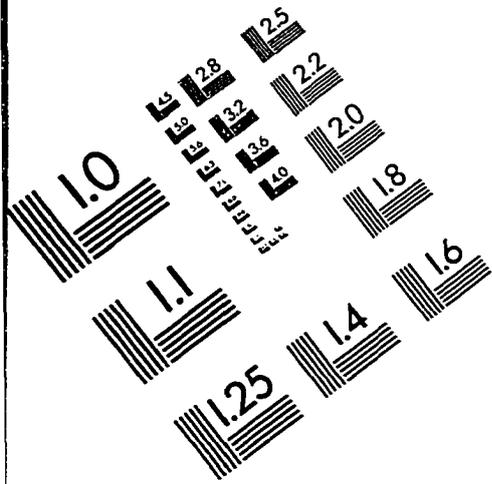
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IMAGE EVALUATION TEST TARGET (QA-3)



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