Group Identification under Conditions of Threat: College Students' Attachment to Country, Family, Ethnicity, Religion, and University Before and After September 11, 2001

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Three classes of introductory psychology students at the University of Pennsylvania completed a survey including several measures of group identification on 20 March 2001, 15 September 2001, and 24 March 2003. Importance of country and university were rated higher four days after the 9/11 terrorist attacks than six months before or 18 months after. Scores on a 9-item scale of identification with country were higher immediately after 9/11 than at the other two assessments. Four theories (group dynamics, CORFing, TMT, SIT) are considered; none predicts the whole pattern of results observed. Discussion highlights group dynamics theory for understanding the increase in identification with country and introduces the possibility that the increase in identification with university might have been a response to experiencing 9/11 as loss of control. Discussion also highlights the value of assessing level of identification with multiple identity groups in order to see the complexity of identity dynamics.

Group identification can be broadly defined as caring about the outcomes of a group (McCauley, 2001). It is a powerful force that motivates a variety of behaviors, from everyday and easy examples such as cheering for a football team

or displaying a logo of one's ethnic or national group on one's clothes, to more serious choices such as volunteering time and money to a group cause or marching off to a war for one's country.

Considerable research in recent years has been aimed at better understanding of the origins and directions of group identification, particularly in the minimal groups paradigm that has indicated how even the most abstract and artificial group boundary can be the occasion of ingroup preferences and biases (Tajfel, Billig, Bundy, & Flament, 1971). For obvious practical reasons, experimental manipulations of group identity and group identification outside the laboratory have been relatively few (Sherif, Harvey, White, Hood, & Sherif, 1961; Tyerman & Spencer, 1983). Thus the events of 11 September 2001 offer a rare opportunity as a kind of natural experiment on the impact of outgroup threat on group identification.

Four theories of group identification are reviewed briefly in order to develop their predictions for the impact of 9/11 on U.S. students' identification with country, family, ethnicity, religion, and university. These are first, the theory of group dynamics that begins with Festinger's (1950) view of informal social influence; second, the theory of self-presentation via group identification advanced by Cialdini and colleagues (Cialdini et al., 1976), third, the Terror Management Theory associated with Greenberg, Pyszczynski, and Solomon (1986), and fourth, a version of TMT that converges with Social Identity Theory (Oakes & Turner, 1980; Tajfel & Turner, 1979) in focusing on group identification as a source of self-esteem. Each of these theories has found support in laboratory settings but each has been criticized with respect to the generalizability of those results to the world outside the laboratory. Most important, their predictions for group identification in the face of a major attack such as that of 9/11 are quite different. Data from three undergraduate student surveys will be used to evaluate the success of these theories in predicting differences in group identification assessed before, immediately after, and long after the 9/11 attacks.

The first survey was completed on 20 March 2001, at a time when the United States faced no obvious external threat. The second survey was completed on 15 September 2001, four days after the shock of the 9/11 attacks. And the third survey was completed on 24 March 2003, five days after the United States had declared war on Iraq but before U.S. forces had entered Iraq.

Group Dynamics Theory

Group dynamics theory originated from Festinger's (1950) informal theory of social influence and Festinger's (1954) theory of social comparison; the theory was tested and refined in experiments today known as classics of small-group research (Back, 1951; Schachter, 1951). The theory emphasizes the social reality value of the group as a source of cohesion: group consensus is the only answer to questions of value.

Many studies in the group dynamics literature have shown that intergroup competition and outgroup threat are potent sources of group cohesion (LeVine & Campbell, 1972, pp. 29–33; Stein, 1976). Thus group dynamics research predicts that the 9/11 attacks should increase Americans' identification with their country between 20 March 2001 and 15 September 2001. Insofar as the 9/11 attacks were not seen as attacks on family, ethnicity, religion, or university, group dynamics theory predicts no increase in identification with these groups.[1]

It is perhaps not so clear what group dynamics predicts about the level of identification at the third survey, just after U.S. declaration of war on Iraq. We assumed that the perceived threat to the United States, particularly to noncombatant U.S. students, was substantially lower at the third survey (war declared against a smaller country; hostilities not yet begun) than at the second survey (9/11 losses not yet fully known; next attack perhaps imminent). Thus we predicted from group dynamics theory that identification with the United States would be lower at the third survey than at the second, and that second and third surveys would not differ in identification with other groups. We had no prediction about levels of identification at the first versus third surveys.

Basking In Reflected Glory and Cutting Off Reflected Failure

Cialdini and colleagues (Cialdini et al., 1976; Snyder, Lassergard, & Ford, 1986) has proposed that group identification is at least partly directed toward advancing social status and self-esteem. When a group is successful, those identifying with it will be more eager to display their identification and thereby enhance their own status by association (Basking in Reflected Glory; BIRGing). By the same token, when the group performs poorly, people are expected to minimize their apparent association with it so as to avoid being viewed as failures by association (Cutting Off Reflected Failure; CORFing). In initial support of this idea, undergraduates were observed after their university football team had had a winning or a losing game, in order to record their tendency to wear school-identifying or team-identifying clothes. As predicted, people wore their school insignia more often on Mondays following a winning game than on Mondays following a losing game (Cialdini et al., 1976).

The tendency to affiliate more with successful than with unsuccessful groups has since been successfully replicated with identification with sports teams (End, Dietz-Uhler, Harrick, & Jacquemotte, 2002) as well as with minimal groups (Aberson, 1999) and even with political parties (Boen et al., 2002). However, other studies have reported exactly the opposite, namely, that individuals identifying with a less successful group exhibit higher identification than those identifying a more successful group. In one study, participants were asked about their prefer-

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[1] One might argue that the 9/11 attacks were an Islamic attack on Christians and Jews, but the religious element was submerged in U.S. rhetoric about an attack on U.S. values during the period of our study.

ences in the upcoming presidential elections. After the election, participants were surveyed again. Those whose preferred party had lost demonstrated higher party identification than did those whose political party had won (Wann, Hamlet, Wilson, & Hodges, 1996).

Kowalski (1992) has suggested that expressions of patriotism, such as those after the success of Operation Desert Storm, can be viewed as a form of BIRGing; U.S. citizens can enhance their self-esteem by expressions of pride and support that publicly demonstrate their association with the power and success of the U.S. Army. If Operation Desert Storm can be construed as a national success, then on September 11, Americans suffered an unprecedented national failure. Cialdini's theory would predict that group identification with country among American citizens should decrease from the first to the second surveys. By comparison, the decision to send U.S. armed forces into Iraq is an expression of power and confidence. Cialdini's theory thus should predict an increase in identification with country between the second and third surveys. So far as we could see, the theory makes no prediction about changes in identification with other groups (ethnic, religious, family, university) across the three surveys.

A further prediction involves self-esteem. Insofar as students are unable to deny their identification with the United States after 9/11, they may suffer a decrease in self-esteem from this identification. Thus we predicted from Cialdini's theory that self-esteem should decrease from the first to the second survey and increase from the second to the third survey as war on Iraq declared U.S. power and determination.

Terror Management Theory (TMT)

A recent development of theorizing about the social reality value of the group is Terror Management Theory. Proposed by Greenberg et al. (1986) based on the writings of Ernst Becker (1962, 1973), TMT begins with the premise that humans are the only animals who have the capacity to recognize their own mortality. Death anxiety, the thought that one's life is subject to an end that may be sudden and unpredictable as well as unavoidable, is potentially overwhelming. Individuals affected by death anxiety can't function normally, at least temporarily, as their defenses are incapacitated and they are vulnerable to many dangers (e.g., predators or enemies; Becker, 1973).

According to TMT, cultures can provide an escape from death anxiety in several ways. First, cultures integrate individuals into something larger than themselves—a culture group that existed before they were born and will continue to exist long after they die. In this way an individual who lives up to cultural standards will live on through her/his culture group. Second, some culture groups—religions—promise personal immortality to those who live up to group standards. Finally, a culture may provide a conception of the world as a just place,

where bad things (like death) do not happen to good people ("good," in this case, defined as upholding cultural standards). Any combination of these "death-defeating" strategies constitutes a cultural anxiety buffer (Pyszczynski, Greenberg, & Solomon, 1997).

To manage the terror of death, a person must first believe in the validity of the cultural worldview and the standards of value it upholds (that is, participate in the social reality value of the culture); and second, a person must believe that she meets or exceeds these criteria of value (i.e., have a sense of self-esteem within the cultural context; Rosenblatt, Greenberg, Solomon, & Pyszczynski, 1989; Greenberg et al., 1990). Hence, the most general hypothesis of TMT is that, when people are made aware of their mortality, they feel the need to uphold the cultural worldview that provides them with an anxiety buffer.

Dozens of experiments (e.g., Greenberg, & Solomon, 2000; Goldenberg, McCoy, Pyszczynski, Greenberg, & Solomon, 2000; Landau et al., 2004; McGregor, Zanna, Holmes, & Spenser, 2001; Rosenblatt et al., 1989) have shown that, when made to think about their own mortality (by writing about their death and what will happen to their body when they die, or by being subliminally exposed to death-related words), people tend to render especially harsh judgments of those who violate cultural standards (such as foreigners derogating the American lifestyle) and to especially favor those who uphold these standards (such as heroes or people with similar worldview). This effect is not observed when participants are made to think about other anxiety-producing or unpleasant events (i.e., exams, dental visits, public speeches, intense physical pain, or failing an intelligence test; Greenberg, Porteus, Simon, & Pyszczynski, 1995; Greenberg, Pyszczynski, Solomon, Simon, & Breus, 1994).

Pyszczynski, Solomon, and Greenberg (2002) have suggested that the events of 9/11 were an especially salient mortality salience manipulation because they made vivid death and destruction inflicted by the terrorists at the same time as they highlighted the fragility of the American cultural worldview by attacking the symbols of this worldview. The prediction following from this view of 9/11 is that group identification with those groups that offer a meaningful escape from death should increase after 9/11. Thus we predicted from TMT that group identification with country, religious groups, and ethnic groups should increase from the first to the second survey as each of these groups offers a form of life after death. TMT theorists also note that offspring and family are important death anxiety buffers (Solomon, 1991). Therefore, identification with family should also increase from the first to the second survey. Similarly TMT predicts that as the mortality threat of 9/11 fades over time, identification with country, religious group, ethnic group, and family should decrease between the second and third surveys.

Although the academic community may offer a kind of immortality to world-class professors, we did not believe that this kind of immortality is on offer to undergraduate students. Thus the TMT prediction for identification with university was that there would be no change across surveys.

TMT/SIT

A more general formulation of TMT focuses on the value of group member-ship as a source of self-esteem. The original focus on groups offering answers to questions of value is lost in this version. Instead, mortality threat is one form of threat to self-esteem, and any threat to self-esteem can lead an individual to increase identification with groups that offer high status and support for self-esteem, *including those that offer no cultural worldview or promise of immortality* such as sports teams or minimal groups (Dechesne, Greenberg, Arndt, & Schmiel, 2000; Harmon-Jones, Greenberg, Solomon, & Simon, 1996). This version of TMT is very similar to Social Identity Theory (Tajfel & Turner, 1979; Oakes & Turner, 1980), in which favoring ingroup over outgroup is understood as a means of maintaining or increasing self-esteem. Thus both SIT and TMT (henceforth referred to as TMT/SIT) suggest that a threat to self-esteem should be followed by increased identification with high status groups.

For our study, TMT/SIT understands the 9/11 attacks as a blow to national pride and the individual self-esteem of Americans. TMT/SIT predicts that self-esteem will be lower immediately after 9/11 than months before or months after when the United States was asserting its control by invading Iraq. With regard to identification, TMT/SIT predicts increase from first to second survey in identifi-cation with any high-status group and decrease from second to third survey. Which groups offer high status and support for self-esteem for our undergraduate respon-dents? We understand TMT/SIT to predict that 9/11 will produce a peak of identification on the second survey with university (whose ivy league status gives status to our student respondents), with religion (special connection with the Almighty, and, for the 27–30% of our respondents who were Jewish, the status of "chosen people"), and perhaps with family, but not with country (which, imme-diately after 9/11, was experiencing decreased status).

Measuring Identification with Country

The measurement and structure of group identification have received much attention in the psychological literature in the recent years (see Silver, 2002, for a review). Silver reviewed 19 different measures of group identification, highlight-ing a major problem with research on group identification: the lack of a uniformly recognized scale that is adequate for the purposes of measuring group identifica-tion. In particular, group identification has been reported to have anywhere from a single factor (Prentice, Miller, & Lightdale, 1994) to five factors in structure (Hogg, Abrams, & Patel, 1987). Silver produced a measure comprised of a number of items used in previous identification research that fit his definition of identifi-cation: "the degree to which individuals think and feel positively about their membership to a specific group they belong or believe they belong to at a specific point in time" (Silver, 2002, p. 7).

We believe that this definition of group identification is needlessly narrow in excluding feelings toward the group (and focusing only on feelings about membership in the group) and behaviors attesting to group identification. We used a more inclusive definition in order to construct a measure based on the full range of items already advanced as assessing group identification. Thus, items addressing behavioral manifestations of group identification were taken from the literature on identification with sports teams (Wann & Branscomb, 1993); items addressing affect and feelings of similarity with other members came from the literature on political identification (Hewstone, 1986; Feather, 1995); and items tapping attitudes toward the group and its success came from industrial/organizational research on identification with work groups (Riordan & Weatherly, 1995). We adapted these items where necessary to assess identification with country and wrote a few additional items. Using these items, we were able to explore whether the structure of group identification might change under conditions of outgroup threat.

Measuring Multiple Group Identities

People hold memberships in (and feel identified with) many groups at the same time. An event that influences one group identity may leave others intact or it may have a potent effect on them as well. Our study aimed to explore this issue by asking participants about their identification with five groups: country, family, ethnic group, religious group, and university. We asked survey participants to rate the importance each of these five groups on the same importance scale. The juxtaposition of the five target groups was intended to provide an indication of the relative strength of identification with country, with the possibility of showing that, after 9/11, identification with country became stronger than identification with other groups.

Summary of Hypotheses

From group dynamics theory, we predicted that identification with country would be higher for the second survey than for the first and lower for the third survey than for the second. Identification with other target groups was predicted not to change across surveys.

From Cialdini's theory of Cutting Off Reflected Failure (CORFing), we drew the prediction that identification with country would be lower for the second survey than for the first and higher for the third survey than for the second. A parallel change in self-esteem was also predicted; as a result of incomplete distancing from the disaster of 9/11, self-esteem should be lower on the second survey than the first and higher on the third survey than the second. Identification with other target groups was predicted not to change across surveys.

From TMT we drew the prediction that identification would be higher on the second survey than on the first for country, family, ethnic group, and religious

group. A further prediction was that identification would be lower for these four groups on the third survey than on the second. No difference across surveys was predicted for identification with university.

From TMT/SIT we predicted that identification with country would be lower on the second survey than on the first survey and higher on the third survey than on the second survey. At the same time, identification with family, religious group, and university should be higher on the second survey than on the first and lower on the third survey than on the second.

Methods

Participants

Participants were 610 University of Pennsylvania students with U.S. citizenship who took Introduction to Psychology on 20 March 2001, 15 September 2001, and 24 March 2003. Results of the survey were reported to the classes later in the semester. Table 1 reports the demographics on participants in each of the surveys.

Procedure

Student volunteers were asked to stay during a break in their Psych 1 lecture to fill out a survey about "Context and the self" for a study that "aims to assess how students think about some of the categories and groups in their lives." They were told that the survey was completely anonymous and instructed to not put their names anywhere on the questionnaire.

Questionnaire

All participants began by rating the importance in their lives of five groups (in order appearing in the survey): country, family, ethnicity, religion, and university. Ratings were made using a unipolar 7-point Likert scale ranging from 1 = *not at all important* to 7 = *very much important* (intermediate values 2 through 6 were not labeled). Participants were instructed to circle *not at all important* if they had no ethnic group or religious group.

Following the importance ratings, participants in Time 1 and Time 2 surveys completed 15 items measuring identification with their country. Because of time limitations, participants in the Time 3 survey completed a shorter survey with nine items measuring identification with their country. Identification items (see Table 2 for these items and their origins) were rated on relevant 7-point unipolar Likert scale (e.g., "How would you feel if you learned that your country was becoming richer relative to other countries?" rated on scale from 1 = *not at all good* to 7 = *very good*). In addition, all participants completed a single-item measure of

Table 1. Demographic Information on Participants in the Three Surveys

Survey	Gender	Age	Ethnicity	Religion
03/20/2001 (Time 1) N = 99	Females: 47 (48%) Males: 52 (52%)	Range: 18–22 $M = 18.97$, $SD = .95$	White: 66 (67%) East Asian: 12 (12%) African-American: 6 (6%) South Asian: 5 (5%) Hispanics: 2 (2%) Mixed (Other): 4 (4%) Unspecified: 4 (4%)	Catholic: 26 (26%) Jewish: 27 (27%) Protestant: 19 (19%) Atheist: 16 (16%) Hindu: 2 (2%) Muslim: 2 (2%) Other: 6 (6%)
09/15/2001 (Time 2) N = 159	Females: 91 (57%) Males: 68 (42%)	Range: 17–22 $M = 18.72$, $SD = .98$	White: 111 (70%) East Asian: 17 (11%) African-American: 6 (4%) South Asian: 5 (3%) Hispanics: 4 (3%) Mixed (Other): 10 (6%) Unspecified: 6 (4%)	Catholic: 30 (19%) Jewish: 46 (30%) Protestant: 36 (23%) Atheist: 24 (16%) Hindu: 4 (3%) Muslim: 2 (1%) Orthodox Christian: 6 (4%) Other: 7 (5%)
03/24/2003 (Time 3) N = 351	Females: 190 (54%) Males: 160 (46%)	Range: 17–28 M = 18.99, SD = 1.13	White: 233 (67%) East Asian: 41 (12%) African-American: 16 (5%) South Asian: 10 (3%) Hispanics: 18 (5%) Mixed (Other): 28 (8%) Unspecified: 5 (2%)	Catholic: 76 (22%) Jewish: 95 (27%) Protestant: 80 (23%) Atheist: 60 (17%) Hindu: 7 (2%) Orthodox Christian: 4 (3%) Other: 16 (5%)

self-esteem ("I have high self-esteem"; Robins, Hendin, & Trzesniewski, 2001) as well as items asking gender and age.

Results

Identification with Country

Scale construction. For each participant, on each survey, ratings of the nine items common to all three surveys were averaged to produce a Country Identification Scale score (see Table 2 for items and Scale means). Cronbach's alpha was .81 for Time 1, .86 for Time 2, and .86 for Time 3.

A one-way ANOVA was conducted to test for differences over time on the Country Identification Scale. Results showed significant differences in survey means, $F(2, 606) = 10.3$, $p < .01$. Post-Hoc Sheffe test revealed a significant difference between Time 2 ($M = 4.72$, $SD = .93$) and Time 1 ($M = 4.37$, $SD = 1.04$),

Table 2. Means (Standard Deviations) of Ratings of Group Identification Items, Group Identification Scale, and Self-Esteem for Three Surveys

	Date of survey		
	03/20/2001 N = 99	09/15/2001 N = 159	03/24/2003 N = 351
How would you feel if you learned that your country was becoming richer relative to other countries?	3.9 (1.5)$_a$	4.9 (1.7)$_b$	4.0 (1.8)$_a$
How would you feel if you learned that the number of your country's citizens is decreasing every year?	3.9 (1.6)	4.0 (1.6)	
How would it make you feel to learn that your country citizens are doing at least as well as other groups?	4.9 (1.5)$_a$	5.5 (1.4)$_b$	
How would you feel if the next great contribution to science/technology/world peace was made by a citizen of your country?	5.1 (1.5)$_a$	5.5 (1.5)$_b$	
When you hear someone who is not a citizen of your country criticize your country, to what extent do you feel personally criticized?[4]	3.9 (1.8)$_a$	4.5 (1.7)$_b$	3.9 (1.8)$_a$
How important is it to you that your country is successful?[3]	5.1 (1.3)$_a$	5.4 (1.3)$_{ab}$	5.1 (1.4)$_{ac}$
How proud are you to be a citizen of your country?[1]	5.2 (1.6)$_a$	5.5 (1.4)$_{ab}$	4.7 (1.9)$_{ac}$
How important is it to you that your country is acknowledged for its success?[2]	5.1 (1.5)$_a$	4.7 (1.5)$_b$	3.9 (1.8)$_c$
How strongly do your friends see you as a citizen of your country?[3]	4.6 (1.6)$_a$	4.5 (1.5)$_a$	4.1 (1.7)$_b$
How closely do you follow the events in your country via any of the following: a) in person or in television, b) on the radio, or c) television news or a newspaper?[3]	3.8 (1.5)$_a$	4.9 (1.4)$_b$	4.8 (1.4)$_b$
To what extent would a notable disgrace by a citizen of your country make you feel bad?	3.3 (1.6)$_a$	4.0 (1.7)$_b$	
To what extent do you feel strong ties with other citizens of your country?[3]	4.2 (1.5)$_a$	4.7 (1.3)$_b$	
To what extent do you feel pleased to be a citizen of your country?[4]	5.0 (1.5)$_a$	5.6 (1.3)$_b$	
How similar do you think you are to the average citizen of your country?[4]	3.6 (1.4)	3.9 (1.5)	3.7 (1.5)
How much are your views about your country shared by other citizens of your country?[4]	4.0 (1.7)$_a$	4.3 (1.3)$_b$	4.1 (1.2)$_a$
9-item Country Identification Scale	4.4 (1.0)$_a$	4.7 (.9)$_b$	4.3 (1.1)$_a$
Self-Esteem	5.1 (1.3)	5.3 (1.3)	5.4 (1.2)

Note. Ratings are on a 1–7-point scale. Row means with different subscripts are different at $p < .01$ by simple t-test (two means) or by Scheffe test after significant one-way ANOVA ($F(2, 606) > 4.68$, $p < .01$)

[1]adopted from Feather (1997); [2]adopted from Riordan and Weatherly (1999); [3]adopted from Wann and Branscombe (1993); [4]adopted from Hewstone (1986).

$p = .01$, indicating that group identification was significantly higher when measured right after 9/11 than it was when measured before the terrorist attacks. Similarly, a significant difference in group identification was found between Time 2 ($M = 4.72$, $SD = .93$) and Time 3 ($M = 4.26$, $SD = 1.13$), $p < .01$, indicating that group identification was significantly higher when measured four days after 9/11 than it was when measured 18 months later.

Although mean Identification with Country was slightly lower at Time 3 ($M = 4.26$, $SD = 1.13$) than at Time 1 ($M = 4.37$, $SD = 1.04$), this difference was not significant, $t(448) = 1.00$, ns. Thus, the beginning of war on Iraq was not associated with any elevation in identification with country.[2]

Structure of country identification items. Factor analysis results are only reported for Time 1 and Time 2, as the reduced number of items at Time 3 did not allow for a meaningful solution. At Time 1, a principal component factor analysis suggested a four-factor solution (four eigenvalues greater than 1.00). After oblique rotation, the four factors accounted for 45, 10, 9, and 7% of the variance, and the intercorrelations of the four factors ranged from $r = .48$ to $r = .15$.

Factor 1 included items pertaining to the group's status, such as "How important is it to you that your country is acknowledged for its success?" and "When you hear someone who is not a citizen of your country criticize your country, to what extent do you feel personally criticized?" Factor 2 included items addressing perceived similarity with other group members: "How similar do you think you are to the average citizen of your country?" and "How much are your views about your country shared by other citizens of your country?" Factor 3 included items dealing with affect toward the group membership, "To what extent do you feel pleased to be a citizen of your country?" and "How proud are you to be a citizen of your country?" Finally, Factor 4 included items measuring the behavioral aspect of group identification, "How closely do you follow the events in your country via any of the following: (a) in person or in television, (b) on the radio, or (c) television news or a newspaper?" and "How strongly do your friends see you as a citizen of your country?"

At Time 2, a principal component factor analysis suggested a two-factor solution (two eigenvalues greater than 1.00). After oblique rotation, the two factors accounted for 58% and 10% of the variance, and they were correlated at $r = .45$. Factor 2 included the three similarity items, "How similar do you think you are to the average citizen of your country?"; "How much are your views about your country shared by other citizens of your country?"; and "To what extent do you

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[2] We asked participants in the Time 3 survey to report their attitude toward the war on Iraq on a 5-point Likert scale ranging from 1 = "strongly oppose" to 5 = "strongly in favor." There was no significant difference between those who supported the war and those who opposed it on the measure of group identification with country or on rated importance of university, religious group, ethnic group, country, and family.

Table 3. Means (Standard Deviations) of Importance Ratings of Five Groups on Three Surveys

	Date of Survey		
	03/20/2001 N = 99	09/15/2001 N = 159	03/24/2003 N = 351
How important to you is your country?	4.8 (1.7)$_a$	5.6 (1.2)$_b$	4.9 (1.6)$_a$
How important to you is your family?	6.7 (0.7)	6.8 (0.7)	6.7 (0.7)
How important to you is your ethnic group?	4.0 (2.4)	4.5 (2.0)	4.5 (1.8)
How important to you is your religious group?	4.1 (2.5)$_a$	4.2 (2.5)$_{ab}$	3.8 (2.8)$_{ac}$
How important to you is your University?	4.4 (1.6)$_a$	5.0 (1.5)$_b$	4.7 (1.4)$_c$

Note. Ratings are on a 7-point scale (1 = not at all, 7 = very much).
For items with significant ANOVA, $F(2, 605) > 3.5$, $p < .03$, means with different subscripts are different at $p < .05$ by Scheffe test.

feel strong ties with other citizens of your country?" Factor 1 included all the other items.[3]

Importance Ratings of Five Membership Groups

Mean importance ratings. For each survey, the means and standard deviations of importance ratings are presented in Table 3. The means show a consistent pattern across the three surveys. Family was rated most important with means close to the maximum rating of 7; country was rated next in importance, then university, and ethnic and religious groups least important. It is not surprising that mean importance of ethnicity and religion should be relatively low, given that some students recognize no ethnicity or religious group and so rated these groups as not at all important.

We conducted one-way ANOVAs to test for differences across surveys in the importance of each of the five target groups (see Table 3). Group dynamics theory and TMT predicted that importance of country would be higher with higher threat at Time 2 than at Time 1 or Time 3. This prediction found support in our data: the importance of country was significantly higher at Time 2 than at both Time 1 and Time 3. By contrast, the prediction from CORFing theory and from TMT/SIT that

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[3] A Confirmatory Factor Analysis was performed on the sample from 14 September 2001, measuring goodness of fit of the four-factor solution produced by the exploratory factor analysis of the identification scale in the first survey. The results indicated that the four-factor solution was not an acceptable fit for the data ($\chi^2 = 249.76$, $p < .01$; $\chi^2/df = 2.81$). Exploratory factor analysis with the 14 September survey produced only two factors with eigenvalues greater than zero; that is, the structure of group identification appeared to be much simplified (two factors rather than four) immediately after 9/11 as compared to the baseline.

group identification with country would decrease from Time 1 to Time 2 was contradicted here.

TMT predicted that importance of family, ethnic, and religious groups would be increased by the salience of death and destruction on 9/11 and that these groups would decline in importance as the salience of 9/11 declined. Although the importance of family was not significantly different across the three surveys, interpretation of this result is clouded by an obvious ceiling effect for this item (means ranging from 6.7 to 6.8 on a 7-point scale, with standard deviations less than half those for other importance ratings). More telling against TMT is that importance of ethnic group was not significantly different across the three surveys. Similarly, the importance of religious group (excluding atheists) was not higher at Time 2 than Time 1 $t(132) = .82$, *ns*, and not lower at Time 3 than Time 2, $t(390) = 1.3$, *ns*.

As with importance of country, importance of the group of university students increased significantly from Time 1 to Time 2 ($t(255) = 3.16$, $p < .01$) and decreased significantly from Time 2 to Time 3 ($t(506) = 1.93$, $p = .05$). This pattern was predicted by TMT/SIT,[4] although the parallel prediction for increase then decrease of importance of religion was not supported.

Correlations of importance ratings. In short, importance ratings for all five target groups tended to be higher at Time 2 than Time 1, and for country and university importance the change was significant. This pattern of means suggests that group identification should not be viewed as a finite resource that can be depleted by an increased identification with one of the groups in the repertoire. Rather, identification with all kinds of groups may be increased in conditions of threat and uncertainty.

Also supporting this view are the positive correlations among the five importance ratings and between importance ratings and the 9-item Country Identification Scale (see Table 4). These ranged from .22 to .59 for Time 1, with mean of .34 ($SD = .11$). For Time 2, the range of correlations was between .08 and .57 ($M = .25$, $SD = .14$). For Time 3, the range of correlations was between .07 and .41 ($M = .23$, $SD = .08$). Generally, correlations tended to be lower at Time 2 than at Time 1. The biggest change was observed in correlations between importance of ethnic group and family ($r = .35$ at Time 1 to $r = .12$ at Time 2) and between importance of religion and country ($r = .22$ at Time 1 to $r = .08$ at Time 2). Correlations are presented in Table 3 for participants in all three surveys combined.

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[4] An alternative explanation for increased importance of university has to do with the timing of the survey in relation to the academic year. The Time 2 survey (15 September 2001) was completed at the beginning of the academic year, soon after undergraduates arrived on campus, and perhaps at a highpoint of student back-to-school enthusiasm for the university. In contrast, the Time 1 and Time 3 surveys (20 March 2001 and 24 February 2003) were collected toward the end of the second semester. We addressed this possibility by asking a new class of introductory psychology students on 15 September 2003 to rate the five target groups for importance. Their mean importance ratings were very similar to and in no case significantly different from the Time 1 and Time 3 survey results, indicating that the higher importance ratings of 15 September 2001 were not an artifact of start-up enthusiasm for the university.

Table 4. Correlations among the Ratings of Importance of the Five Groups and the 9-Item Country Identification Scale (Country ID)

	country	family	ethnic	religious	university
family	.20**	–			
ethnic	.22**	.25**	–		
religious	.11	.22**	.41**	–	
university	.20**	.16**	.22**	.17**	–
Country ID	.36**	.18**	.22**	.24**	.41**

Note. N of correlations ranged from 606 to 609 because of missing values.
**correlation is significant, $p < .01$.

In addition, the five importance ratings were all positively correlated with the Country Identification Scale. The significant correlation between the Country Identification scale and with the importance of country ($r = .36$) is expected and a degree of convergent validation of these measures, but it is more surprising to note that Country Identification is positively correlated with all of the group importance ratings, including a correlation with university importance (.41) that rivals the correlation with country importance ($r = .36$).

Self-Esteem and Group Identification

Contrary to CORFing predictions, there was no significant difference in self-esteem across the three times of assessment $F(2, 604) = 1.25$, *ns* (see Table 2 for means). Correlations of self-esteem with Country Identification Scale and with ratings of importance of various groups were weak and inconsistent across the three surveys, ranging from −.16 to +.24. Because the self-esteem measure used in this study has demonstrated high correlations (.73–.80) with the 12-item Rosenberg self-esteem measure (Robins et al., 2001), this null result is not likely due to the low reliability of the measure.

Gender and Group Identification

There were small correlations between gender and importance of family ($r(606) = .10$, $p = .02$), importance of ethnic group ($r(606) = .11$, $p = .01$), and importance of university ($r(604) = .15$, $p < .01$). All three correlations indicate that women reported slightly higher group identification than men. Women also scored a little higher on the Group Identification Scale, $r(606) = .07$, $p = .03$.

Separate analyses for men and women produced results consistent with those for the entire sample, such that both men and women reported higher identification with country and importance of university in the second survey relative to the first and third surveys. One discrepancy between the gender-combined and gender-separate analyses was with respect to rated importance of family: before 9/11 men

rated family as more important ($M = 6.88$, $SD = .38$) than four days after 9/11 ($M = 6.59$, $SD = .98$), $t(118) = -2.06$, $p = .04$. For women, this trend was reversed: importance of family was higher after 9/11 than before ($M = 6.88$, $SD = .45$) versus ($M = 6.57$, $SD = .45$), $t(134) = 2.74$, $p < .01$. There was no difference in ratings of family importance between the second and third surveys for either men ($t(226) = 1.00$, ns) or women ($t(278) = 1.5$, ns).

Discussion

Our study compared surveys completed by U.S. students in introductory psychology classes six months before, four days after, and 18 months after the terrorist attacks of September 11, 2001. The three surveys included measures of importance of country, family, religion, ethnicity, and university, and these measures provide the basis for a natural experiment to explore the impact of 9/11 as increased identification with country and university.

As in many natural experiments, it is impossible to be certain that 9/11 and only 9/11 is the cause of the higher levels of identification with country and university immediately after 9/11. Another limitation is that our sample, undergraduates at a highly selective ivy league university, are not representative of the population of U.S. college students. They are likely to have come from more privileged backgrounds, to have higher general intelligence, and to be more aware of the political issues in their country than the average American. Any of these could have interacted with the events of 9/11 to produce the pattern of results observed.

Theorizing the Impact of 9/11 on Group Identification

Students who answered the identification items shortly after the terrorist attacks scored higher on the Country Identification Scale than those who completed the survey either before the terrorist attacks or 18 months later. Similarly, ratings of importance of country were higher just after 9/11 than before or 18 months later. These results were predicted both from group dynamics theory (Festinger, 1950), in which common threat increases group identification, and by Terror Management Theory (Greenberg et al., 1986), in which salient and unexpected death increases attachment to groups that can offer some kind of immortality to those who accept group norms.

Our results offered no support for the idea that individuals would reduce their identification with their country to the extent that 9/11 was a conspicuous defense failure and national loss. That is, our results show no sign of Cutting Off Reflected Failure (CORFing; Cialdini et al., 1976). Not only was identification with country higher immediately after 9/11 than earlier and later, but there was no sign of a reduction in self-esteem that might go along with identification with a losing

group. Nor was there any correlation between self-esteem and identification with any of the groups studied.

The relative success of group dynamics theory and of TMT must be qualified by other results, however. Group dynamics theory cannot explain the increased importance of university immediately after 9/11. As the university was not attacked, it cannot be common threat that produced increased identification with the university. TMT, on the other hand, predicted increases in identification with ethnic group and religious group that were not observed and did not predict the increase in identification with university that was observed. We argue that TMT cannot predict the increase in identification with university because the university does not offer a cultural worldview with an immortality promise to undergraduates.

A self-esteem focused version of TMT that converges with SIT (Tajfel & Turner, 1979) was alone in predicting the observed increase in identification with university. The logic is that 9/11 was a threat to American self-esteem, including mortality threat at the individual level and humiliation at the group level. Both SIT and a generalized version of TMT predict that individuals can gain self-esteem by identification with a high status group, and our students could thus regain or defend their self-esteem by identifying with their high status university. However, the same TMT/SIT logic predicts that students should also increase identification with family and religion, and these predictions were not supported. Conversely, TMT/SIT predicts no increase in identification with a country humiliated by 9/11, but this increase was indeed observed.

The theoretical scoreboard thus looks as follows. Group dynamics theory is four for five in predicting increased identification with country but not with family, religion, or ethnicity. Group dynamics fails to predict increased identification with university. CORFing theory is three for five. It correctly predicted no change in identification with family, ethnicity, and religion, but failed to predict the increase in identification with university and predicted decreased identification with country rather than the increase observed. TMT's emphasis on groups offering a cultural worldview as an answer to mortality threat leads to a one-for-five record. TMT predicts the observed increase in identification with country, but goes wrong in predicting increases in identification with family, ethnicity, and religion that were not observed, and goes wrong as well in failing to predict the increase in identification with university that was observed. Finally, the TMT/SIT view of group identification in the service of self-esteem is one for five. It predicts the observed increase in identification with university, but goes wrong in predicting increases in identification with family and religion that were not observed and especially wrong in contradicting the observed increase in identification with a humiliated country.

Thus none of the four theories we began with can predict the whole pattern of our results. Group dynamics theory does best on the scoreboard, and its prediction of increased ingroup identification from outgroup attack rests on a very large

literature in social psychology cited in the introduction (see especially LeVine & Campbell, 1972). Nevertheless, group dynamics theory has nothing to say about the increase in identification with university after 9/11 observed for our student respondents. We will suggest briefly a theory that might deal more directly with the increased identification with university.

Loss of Control and Group Identification

Threats to perception of control can lead to increased group identification (Dailey, 1978; Grieve & Hogg, 1999; Jetten, Hogg, & Mullin, 2000; Mullin & Hogg, 1998). After the attacks of 9/11, the group most available for our student respondents was the group of friends and fellow students at the university. Institutionally, the university offered counseling sessions, hotlines for students to call relatives and friends, and information forums about terrorism, Islam, and U.S. foreign policy. Thus identification with the university may have been critical for restoring students' shaken sense of control and order.

Lack of control can help make sense of another result. We found that female students were slightly higher than males on the Country Identification Scale and in rated importance of ethnic group and university. If female students see themselves as having less power and control than male students, perhaps female students then seek group affiliations more than male students do. There is related evidence that group identification is higher among minority and stigmatized group members (Bat-Chava, 1994; Crocker & Lawrence, 1999; Crocker & Major, 1989).

In short, it seems possible that threats to the perception of control can lead to behaviors that help restore or increase perception of control. It is when the individual feels weakest that the group can look strongest.

Conceptualizing and Measuring Group Identification

Our results offer several indications of how to assess group identification. We began with two kinds of group identification measure: items taken from previous scales of group identification and applied here to identification with country, and simple ratings of the importance of country and four other groups (family, ethnicity, religion, and university). Our expectation was that the importance ratings, which juxtaposed multiple groups, would be more sensitive to relative strength of identification with these five groups, whereas the Country Identification Scale would offer a more reliable measure of identification with country.

Results with the Country Identification Scale indicated that the structure of its items was simpler immediately after 9/11 than months before (fewer items on the third survey prevented a parallel assessment of structure 18 months after 9/11). There is some indication that cognitive complexity decreases under stress (Miller, 1968; Loewen & Suedfeld, 1992), and it may be that group identification

participates in this kind of simplification. This possibility might be pursued in future research.

Ratings of importance of family, ethnicity, religion, country, and university were all positively intercorrelated at all three assessments (for respondents of all three surveys combined, these 10 correlations ranged from .11 to .41 with mean correlation of .22; for respondents of the short survey we administered on 15 September 2003 these 10 correlations ranged from .09 to .35 with mean of .23). Thus individuals rating one group more important were, to a small but consistent extent, more likely to rate all other groups more important. Similarly, the Country Identification Scale was positively correlated with all five importance ratings (for respondents of all three surveys combined, these five correlations ranged from .18 to .41 with mean correlation of .28). Notably, the Country Identification Scale correlated highest with importance ratings of country ($r = .36$) and university ($r = .41$).

These positive correlations may represent only some kind of individual difference in understanding the 7-point scales used for all survey items, or they may indicate the existence of individual differences in need or motive for group identification. If the latter, the implication would be that some individuals identify more with every group they participate in. Additional research would be required to separate these possibilities.

There is however one clear implication of the pattern of consistent positive correlations found in our results: there is no sign of the negative correlations that would imply some kind of conservation principle for identification. More identification with one group need not mean less identification with other groups; there may be no limit to the human capacity to care about many groups at once. Individuals may indeed experience inconsistencies and oppositions among different identities (Google search Nov. 2004 produced over 9000 hits for "identity conflict"), but this experience should not obscure the extent to which multiple identities can be consistent and even mutually reinforcing.

The complexity of interrelations among identities is suggested by an unexpected gender difference in our results: importance of family was rated higher after 9/11 by female students, whereas importance of family was rated lower by male students. Nevertheless, both males and females showed increased identification with country and university after 9/11. This complex pattern was visible only because we included measures of identification with five different groups. It is our impression that most experimental studies of group identification focus on a single measure of group identification and do not attempt to assess the potential repercussions of the manipulated change in identification on other group identifications. Similarly we suspect that most studies of identity conflict measure only the two identifications seen to be in conflict. The dynamics of multiple identities, especially the repercussions of increasing or decreasing level of identification with one among many identities, is a political psychology yet to be developed.

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