

Full Length Research Paper

Differential reaction patterns to September 11th's events

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A quasi-exploratory field study examined the possible differential psychological responses of American (n = 82) and international (n = 50) samples located in the US, to the events of September 11th collected six months after the attack. Comparing two views on the psychological effects of acts of terrorism on the target population, it was hypothesized that the direct target population (American) and the indirect target population or the “bystander population” (international) will vary in their patterns of reaction. A questionnaire assessing three categories of psychological-attitudinal reactions to acts of terrorism (emotional, perceptions of perpetrators and their agenda and behavioral intentions) revealed significant differences between the two samples: while both samples exhibited adverse emotional responses, the American sample tended to view the situation more as a war and tended to be less yielding or understanding toward the perpetrators than the “bystander” sample. Some implications for future research and current existing theories are discussed.

Key words: September 11th, psychological responses, international samples, comparative design.

INTRODUCTION

Research indicates that in most cases, the immediate casualties or damage caused by acts of terrorism have little or no military or tactical significance (Crenshaw, 1986; Lomasky, 1991; Kingstone, 1995). The psychological impact of terrorism, however, seems to be much more prominent. Past and present studies have linked adverse emotional reactions such as anxiety, fear, worry, depression, feelings of increased vulnerability and so forth with direct or indirect exposure to acts of terrorism (Crenshaw, 1986; Davis and Macdonald, 2004; Gidron et al., 1999; Halpren-Felsher and Millstein, 2002; Slone, 2000; Squires, 2002). Further evidence suggests that perceptual and attitudinal changes may also result from exposure to terrorism (Bar-Tal and Labin, 2001; Costello et al., 2004; Merari and Friedland, 1985). In this respect, some authors in this field conceptualize terrorism as a form of psychological warfare, and thus – a form of communication (Friedland and Merari, 1985; Lomasky, 1991).

If terrorism is primarily a communicative act aimed at creating a psychological impact, who are its “target audiences”? Whom are the terrorists communicating with and for what purpose? Dowling (1986) identifies two main target audiences supposedly impacted in a differential manner by an act of terrorism: The first is the perpetrators' own social/political group to whom the act may convey a message of self-assertion, ideological justification and a sense of self-assurance. The second is the target population against which the act is aimed, who may experience fear, anger, anxiety and other adverse effects and psychological changes addressed earlier.

There are some conflicting findings; however, regarding the effects of terrorism on the target population against which it is aimed. While there is ample evidence to support the occurrence of adverse emotional reactions, it seems that the attitudinal and behavioral effect might work as a double edged sword. Some findings support the assertion that the terrorists' actions may have the effect of drawing attention to their agenda, “breaking the spirit” of the target population and inducing more willingness to yield to their demands (Crenshaw, 1992; Kingstone, 1995). Others seem to indicate that the attitudinal and behavioral effect on the target population is

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counter-productive to the perpetrators' goal: Studies focusing on various target populations of terrorism suggest that the attitudinal and behavioral shift seems to be in the opposite direction. Endorsing direct action against the perpetrators, demonstrating more negative attitudes toward the perpetrators' group, justifying military actions against the groups they represent may result from the same actions designed to break them (Friedland and Merari, 1985; Bar-Tal and Labin, 2001; Sanadjian, 2002). Other studies have shown that alongside, the adverse psychological consequence, growth and empowerment may result from coping with the events (Davis and Macdonald, 2009; Klein et al., 2009).

The preceding conflicting evidence beg the question: Is there a principle, accounting for those opposite directions in which the psychological effects of acts of terrorism seem to go? One possibility is that the target population toward which terrorism is aimed is not unitary. It is suggested that at least two different types of target populations exist for an act of terrorism: The immediate population against which the act is aimed and the "bystanders", or populations who witness the event but are not directly targeted by the event or the perpetrators. The existing literature examined mostly homogeneous audiences' responses to acts of terrorism. This study offers a unique opportunity to compare two different target audiences' reaction to a historical act of terrorism which left its bitter mark on world history. To the best of our knowledge this is the first study of its kind in this respect.

This preliminary, semi-exploratory study examined the differential psychological effects of terrorism on various target populations, exposed to the same act of terrorism. This study focused on two groups indirectly exposed to the attacks of September 11th: One comprised of American students and the other comprised of visiting international (mainly European and Asian) students staying in US campuses during the events of September 11th. Both groups were similarly exposed to the events of September 11th in an indirect manner. Since the events were aimed "against the American people", it was assumed that the American students were included in the direct target population while the visiting international students were in the capacity of visitors, or bystanders witnessing an event. Both populations defined here were influenced by the events of September 11th. The intensity of the adverse psychological reactions to these events is well documented and indicated extreme emotional responses throughout the population, not only in the geographical proximity of these events but nationwide (Galea et al., 2002; Schuster et al., 2002). When shifting the focus of attention from the intensity of the responses to examining inter-group differences, intriguing patterns may arise.

It was hypothesized that consistent differences between American and international groups will be evident in their psychological responses to the events of September 11th. This hypothesis was based on the

assumption that the two group interpret their "status" vis-à-vis the events differently, one being the direct target population while the second – a "social bystander". No directional hypotheses were offered, due to the exploratory nature of the study.

METHOD

Sample

A sample of 82 American students, attending 3 colleges and universities in the Pacific Northwest, and a sample of 50 international students attending the same programs, at the time of the September 11th events participated in a study about "personal reactions to terrorism". Two potential participants refused to take part in the study. The two samples did not differ significantly in age (American = 29.4, SD = 10.55; International = 28.8, SD = 8.2). The international sample differed from the American one in that a larger proportion of the participants were attending graduate programs, compared to the American sample (American = 40%; International = 60%). The countries of origin for the international sample were: Taiwan (50%), Korea (20%) German speaking countries (20%), Brazil (~5%), and Israel (~5%). The two samples did not vary significantly on aspects of marital status and religion (with both being predominantly Christian). Participants were approached and asked to participate in the study six months after the events of September 11th.

Instruments and measures

The questionnaire used in the study was an adapted version based on existing instruments used for the study of terrorism as psychological warfare (Merari and Friedland, 1985; Takooshian and Verdi, 1995). The questionnaire was designed to gauge aspects of emotional responses to terrorism (e.g, fear, worry, hope, etc), perception of the perpetrators' goals, agenda and mode of action (e.g, understanding the perpetrators' goals), and general behavioral intentions that may result from the exposure to the events (e.g, willingness to reason with the perpetrators, give the perpetrators what they want, resist/ fight the perpetrators, etc). This structure reflects the underlying components of psychological attitudes, as described in the literature (for example, Fabrigar et al., 2005). Each item was designed as a semantic differential, with an 8 point scale ranging from one end to another, on each item. The items were phrased in a direct manner. Scales showed internal consistency coefficients (alpha Cronbach's) ranging from $r = 0.72$ to 0.83 . In addition, 3 items regarding changes in beliefs after exposure to terrorism were included (e.g, "My political beliefs have become more militant in nature" vs. "My political beliefs have become more pacifist in nature").

A panel of five content experts, all faculty members in the field of social science in the colleges participating in this study, reviewed the questionnaire items and sorted them according to the categories mentioned above (emotional responses, understanding the perpetrators' agenda and behavioral intent). Items that were not agreed upon by at least four of the five experts were excluded. Sixty items were included in the first pool. Table 1 specifies the categorization of the final items, according to the experts' judgment.

In addition, several demographic items were added including: age, highest education gained, and personal involvement (participants or anyone they know were hurt in an act of terrorism).

Procedure

After obtaining approval of the study from the universities' IRB,

Table 1. Content experts' categorization of questionnaire's items.

Emotional responses	Perceptions of perpetrators and their goals	Behavioral intentions
Happy/ sad	Taken by surprise/ expecting	Can reoccur/ can never reoccur
Anxious/ relax-calm	Hope for future/ hopeless	Negotiate/ never negotiate
Worry/ not concerned	Understand perpetrators/ cannot understand perpetrators	Give up to perpetrators/ never give up
Content/ angry	Learned about perpetrators/ did not learn about perpetrators	Fighting a war/ no war
Frustrated/ satisfied	Perpetrators agenda/ no knowledge of agenda	Should exterminate perpetrators/ should talk to perpetrators
Mourning/ celebrating	Justify perpetrators goals/ never justify goals	
Confident/ afraid		
Fear for safety/ secure		

Table 2. EFA results for the questionnaire items.

Item	Factor 1	Factor 2	Factor 3
I was taken by surprise	0.117	-0.117	0.769
I am happy	-0.651	0.001	0.003
I feel anxious	0.670	0.005	0.001
I worry about the Sept. 11th events	0.714	0.141	-0.009
I feel content when I think about Sept., 11th events	-0.533	-0.318	0.115
I feel frustrated	0.791	0.175	-0.150
I feel like mourning	0.706	0.284	-0.142
I feel confident	-0.654	0.009	0.294
I have strong hope that things will get better soon	-0.111	0.158	0.642
I fear for my safety	0.571	0.008	-0.431
I can understand what they are trying to achieve	-0.143	-0.304	-0.580
Since Sept., 11th I have learned a lot about the perpetrators, their beliefs and goals	-0.006	-0.006	0.577
I believe the events of Sept., 11th brought the perpetrator's agenda to the world's awareness	-0.213	-0.006	0.458
I could never justify their goals	0.306	0.047	0.579
I believe we should exterminate the perpetrators and the people who sent them	0.007	0.793	-0.129
Events like those of Sept. 11th could never happen again in the US.	-0.111	-0.260	0.510
We should give the perpetrators what they want	-0.005	0.723	-0.004
I will never be willing that the US negotiates for peace with the perpetrators. Not even in the future.	-0.008	0.616	-0.005
We are fighting a war against the perpetrators of the Sept. 11th events	0.258	0.618	.005

Criterion for inclusion in factors was item loading = 0.45.

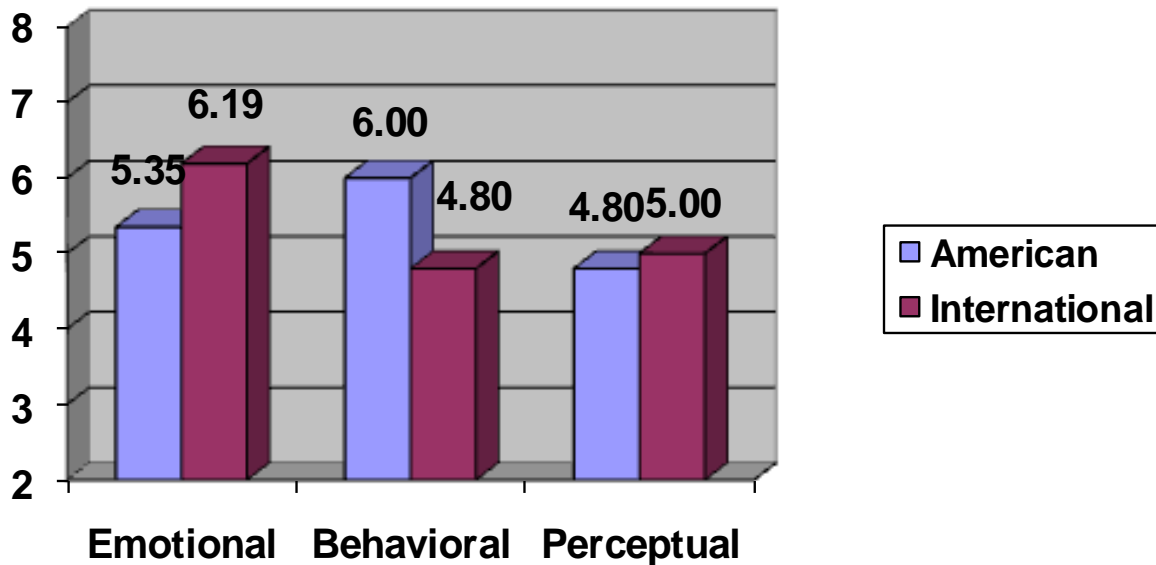


Figure 1. Medians comparison of emotional, attitudinal and perceptual scale scores between American and International samples ($n = 132$). Scores are on a scale of 1 to 8. Higher scores represent negative reaction. Group differences on emotional and behavioral scores were tested using the Mann-Whitney statistic and are significant at $p < 0.01$. Group differences on perceptual scores are NS.

participants were approached on campus. They were asked to participate in a study about “people’s personal reactions to terrorism, specifically the events of September 11th”. All students were asked to participate voluntarily after receiving oral and written information about the study. There was no personal information in the questionnaire that would allow researchers to identify the individual participants. Potential participants were allowed to view the questionnaire before agreeing to take it. The completion and return of the questionnaires were perceived as consent to participate in the study.

Only two of those approached refused to participate. Those who agreed were asked to take the questionnaires and fill them out at their convenience. The questionnaire took participants between 15 to 30 min to complete. Participants were given the option of returning the questionnaires in a sealed envelope, to maintain anonymity.

RESULTS

We first tested our questionnaire’s structure for underlying factors accounting for the participants’ reaction to the events of September 11th: As a first step in this exploratory study, an exploratory factor analysis (EFA) was conducted on all the questionnaire items. The model yielded 3 factors accounting for 65.53% of the total variance. Table 2 presents the 3-factor model produced by the EFA. The classification suggested by the content experts and the one supported by the analysis demonstrate a high level of congruence.

To provide preliminary indications of trends in the data and group differences 3 sub-scale grades were computed. The grades for emotional responses, perception of perpetrators and the events and general

behavioral statements scales were based on simple mean computation for each scales’ items. Figure 1 shows a comparison of the median scores on the questionnaires’ scales (emotional, perceptual and general behavioral statements) between the two samples, and the statistical significance of the differences found. The scores of the 3 sub-scales were compared using the Mann-Whitney statistic for unrelated group comparisons of ordinal scale data. Significant differences between the samples were found on two of the three subscales.

The data suggests a reaction pattern characterized by relatively extreme negative emotional and behavior-related responses and mild negative perceptions of the events of September 11th and their perpetrators by both samples. Group differences, however, in both the emotional and behavioral scales reveal an interesting pattern: The international sample reported significantly higher levels of adverse emotional responses than the American sample ($Z = 1.99$, $p = 0.01$). The international sample also reported less negative behavioral intentions toward the perpetrators ($Z = 2.10$, $p < 0.01$). As for the way the perpetrators were perceived, there were no significant differences between the samples.

To further explore these differences, the individual questionnaire items were compared between the two samples. Table 3 summarizes the item comparison between the samples.

The comparison, again using the Mann-Whitney statistic, reveals systematic differences. The American sample reported less emotional distress as a result of the September 11th events than the international sample in

Table 3. Comparison of items median scores between the American (n = 82) and International (n = 50) samples.

	Median ** American sample	Median ** International sample	Z (Mann-Whitney converted)	Sig. *
I was taken by surprise	1.00	1.00	1.25	NS
I am sad	2.00	1.50	0.54	NS
I feel anxious	4.00	3.00	2.38	0.01
I worry about the Sept. 11th events	3.50	2.00	3.09	0.00
I feel angry when I think about Sept., 11th events	2.00	2.00	0.13	NS
I feel frustrated	3.00	3.00	1.60	NS
I feel like mourning	3.00	2.00	2.42	0.01
I feel afraid	5.00	3.00	3.66	0.00
I feel hopeless and do not believe things will get better soon	3.00	4.00	1.08	NS
I fear for my safety	5.00	4.00	2.58	0.01
I cannot understand what they are trying to achieve	4.00	4.00	0.06	NS
Since Sept. 11th, I have gained no additional knowledge about the perpetrators...	6.00	5.00	0.12	NS
I believe the events of Sept., 11th brought the perpetrator's agenda to the world's awareness	7.00	6.25	0.04	NS
I could never justify their goals	1.50	2.00	1.20	NS
I believe we should exterminate the perpetrators and the people who sent them	4.00	5.00	3.09	0.00
Events like those of Sept. 11th are very likely to happen again in the US.	2.00	3.00	2.76	0.00
We should never give the perpetrators what they want	2.00	4.00	3.27	0.00
I will never be willing that the US negotiates for peace with the perpetrators.	5.00	6.00	0.72	NS
We are fighting a war against the perpetrators of the Sept. 11th events	2.00	4.00	3.36	0.00
My attitudes have become more militant in nature	4.00	5.00	2.61	0.00
I am more afraid now for my personal safety than I was before	4.00	3.00	1.38	NS
I think the US should be more active in fighting terrorism world-wide, wherever it is	3.50	4.00	2.16	0.03

*) Due to multiple comparisons the criterion for significance was raised to 0.01; **) the lower the score, the stronger is the agreement with items' content.

aspects of anxiety, worry, mourning, fright and fear for safety. In other aspects such as surprise, sadness, anger etc., there were no distinct differences between the two samples. It is also evident that in term of attitudes and attitude change (as a result of the September 11th events), a pattern of inter-group differences emerges. While the American sample showed an extreme objection to the idea of yielding to the perpetrators, to the point of perceiving the

situation as a "war against terrorism", the international sample reported milder behavioral intentions and tended to perceive the situation much less as a "war".

When asked about changes in their attitudes as a result of the events of September 11th, Americans reported becoming more "militant" in their attitudes than the internationals and slightly more supportive than the internationals of the US's more active involvement in war against

terrorism worldwide. As far as reported knowledge about the perpetrators, understanding their agenda and actions – the two samples did not differ significantly.

DISCUSSION

The results of this study may shed new light on contradictory evidence accumulated throughout

the years in the study of terrorism as psychological warfare. The data appears to support the claim that target populations are not uniform, and may respond differently to witnessing the same act of terrorism. The differences may be explained, at least in part, by their status: Do they identify themselves as the target population (Americans, in the case of the September 11th events) or “social bystanders” (international visitors, in this case)?

The emotional, perceptual and intentional-behavioral patterns revealed in this study show that while the American sample showed somewhat milder adverse emotional response than the international sample, they were also expressing more psychological reactance in face of the threat. They also showed less willingness to yield to the perpetrators and more “militant” attitudes. This pattern supports earlier findings depicting terrorism as “double edged sword”, inducing counter-productive psychological and behavioral results for the perpetrators (Bar-Tal and Labin, 2001; Friedland and Merari, 1985; Ford et al., 2007; Sanadjian, 2002). The international sample, however, reported higher levels of adverse emotional distress than the American. They also reported more willingness to yield to the perpetrators’ demands, and expressed milder attitudes, consistent with the feelings of anxiety, fear and worry. This pattern could be linked to previous studies construing terrorism as a means of “weakening” and wearing out the target population (Crenshaw, 1986; Halpern-Felsher and Millstein, 2002; Merari and Friedland, 1985).

This study suggested the possibility that target populations of terrorism may not be uniform and may react to terrorism in various patterns. The primary target population may react with adverse emotional responses accompanied by more aggressive, resilient attitudes and behavioral tendencies. This pattern fits well with the notion of psychological reactance (Brehm and Kassin, 1996). The secondary target population seems to react not only with increased adverse emotional responses but also with a more yielding, less resilient attitude and behavioral intentions.

An interesting alternative explanation may be that of novelty and previous exposure to such events. Can it be that for the American audience such an attack was novel, unforeseen while internationals may have experienced terrorism in the countries of origin? If such is the case, we may attribute at least some of the differences found to learned helplessness among those with repeated exposure to terrorism (see for example: Maier and Seligman, 1976). Looking at the list of countries from which the internationals came from, the explanation given here is less likely since most countries of origin in our sample are not well known for high incidents of terror attacks (with one exception).

While the results show promising directions for future research, this is still a preliminary, semi-exploratory study. Small, relatively homogenous samples may make it difficult to generalize the study’s results. This means

the results should be considered carefully before generalizing to broader audiences or even the US population. However, we view this data as valuable especially due to the fact it was collected in chronological proximity to the actual events and as such is irreplaceable. Additional studies may wish to look at long term reactions of broader audiences, using larger samples whenever possible to make generalizations and insights easier. Also, following a field study design, the results may be influenced from various external factors. However, the events and the actual reactions of participants to them are valuable enough to explore outside of the lab. Future research may want to follow the directions indicated here in various settings and samples.

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