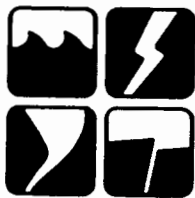


Natural Hazard Research

DIFFERENTIAL RESPONSE TO STRESS IN NATURAL AND
SOCIAL ENVIRONMENTS: AN APPLICATION OF A MODIFIED
ROSENZWEIG PICTURE-FRUSTRATION TEST

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PREFACE

This paper is one in a series on research in progress in the field of human adjustments to natural hazards. It is intended that these papers will be used as working documents by the group of scholars directly involved in hazard research as well as inform a larger circle of interested persons. The series is now being supported from funds granted by the U.S. National Science Foundation to the University of Chicago and Clark University. Authorship of papers is not necessarily confined to those working at these institutions.

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DIFFERENTIAL RESPONSE TO STRESS IN NATURAL AND SOCIAL
ENVIRONMENTS: AN APPLICATION OF A MODIFIED ROSENZWEIG
PICTURE - FRUSTRATION TEST

Recent research on human adjustments to natural and other hazards has pointed to the need to study individual differences in response.¹ There is also a need for new research tools, for methods that can be used in field situations and for approaches that promise to be of value in cross-cultural situations.²

A search through the relevant psychological literature revealed several tests that may be of some value. One of the more promising of these is the Rosenzweig Picture-Frustration Test, a limited projective procedure employed to disclose patterns of response to stress. Towards this end, subjects are shown a series of cartoon situations in which at least two people are involved. One person is depicted as saying something to another person in the cartoon and the subject is asked to fill in the other person's reply. The test is based on the assumption that the subject identifies with the frustrated character in each picture and projects his own reaction tendencies in the reply. Social stress is evident in the situation itself or in the individual's statement. The situations fall into two categories--ego blocking, where an obstacle is evident, and super ego blocking, where one person levels an accusation at another. Individual bias in the subject's reply in these situations is determined by using "scoring factors" to indicate the type of response and the "direction of aggression".³ The test

¹See, for example, I. Burton, R. W. Kates, and R. E. Snead, The Human Ecology of Coastal Flood Hazard in Megalopolis, Department of Geography Research Paper No. 115 (Chicago: University of Chicago, Department of Geography, 1969).

M.L. Barker, "The Perception of Water Quality as a Factor in Consumer Demands and Space Preferences in Outdoor Recreation" (unpublished M.A. thesis, Department of Geography, University of Toronto, 1968).

²I. Burton, G. F. White, and R. W. Kates, The Human Ecology of Extreme Geophysical Events, Natural Hazard Research Working Paper No. 1 (Toronto: Natural Hazard Research, University of Toronto, 1968).

³In a discussion of the Rosenzweig P-F test, Bjerstedt considers the overall use of the term "aggression" unnecessarily confusing and recommends the use of the terms "direction of activity" instead of "direction of aggression" and "attention dominance" instead of "type of reaction". In some earlier texts Rosenzweig used the more neutral term "type of reaction", but

recognises three types of reaction:

- 1) Obstacle dominance, where the barrier occasioning the frustration dominates the response:
e.g. It's going to cost a fortune to repair the damage done by the tornado.
- 2) Ego defense, where the ego of the subject dominates the response:
e.g. It's your fault, not mine.
You should have been more careful.
- 3) Needs persistence, where a solution to the frustrating circumstance is emphasised:
e.g. I'll try to replace the broken vase.

The test identifies three possible directions for the subject's response:

- 1) Intropunitive, where aggression is directed towards the subject himself:
e.g. I'm sorry, officer, I didn't realise that I was going that fast.
- 2) Extrapunitive, where aggression is directed out towards the environment:
e.g. It just had to rain today, didn't it!
- 3) Impunitive, where aggression is avoided in an attempt to gloss over the frustration:
e.g. It could happen to anyone.
It couldn't be helped.

The original Rosenzweig P-F test contains a series of twenty-four picture cartoons, including sixteen ego blocking and eight super ego blocking situations.⁴ In order to adapt the test to the natural hazard

in 1960 he explicitly recommended the use of the term "aggression". Despite the criticisms noted above, "aggression" will be used in the following discussion. Source: A. Bjerstedt, The Sixth Mental Measurement Yearbook (1965), p. 511.

⁴S. Rosenzweig, "The Picture-association Method and its Application in a Study of Reactions to Frustration," Journal of Personality, XIV (1945), 3-23.

S. Rosenzweig, E. E. Fleming, and H.J. Clarke, "Revised Scoring Manual for the Rosenzweig Picture-Frustration Method," Journal of Psychology, XXIV (1947), 165-205.

problem, nine of the original Rosenzweig pictures have been selected and matched with nine new pictures where the source of stress is derived from, or is in some way associated with, the natural environment.

Two examples are given in Figures 1 and 2. In Figure 1, a farmer is accusing his neighbour of taking more of his share of the irrigation water and then damaging the first farmer's crop. 72.4% of the responses were ego-defensive and extrapunitive, laying the blame on the complaining farmer rather than admitting guilt. Examples of this class of response include the following:

"You neglected your crop."

"Like hell I did."

"I think you are mistaken."

"Don't give excuses for your own shortcomings."

"How did you know that it was I? I could have been Jones."

"That's just not so. I don't know where you're getting these crazy ideas."

A second example (Figure 2) shows two men stranded at the airport where all flights have been cancelled because of snow. The first man is apologising for having asked the second man to drive him all the way to the airport to no avail. Responses to this stressful situation covered a wider range, but a majority (54.9%) gave ego-defensive, impunitive responses.

Examples of this class of response include the following:

"Well, that's life. There's not much we can do about it."

"Perhaps next time we'll phone before leaving."

"Oh, that's all right. I guess we may as well go home now."

"I don't mind. Neither of us foresaw this."

"Let's go up to the lounge and wait for any announcement."

"Never mind. It gave us an opportunity to have a good chat on the way out. Next time we'll telephone first when the weather's bad."

In the subsequent discussion, the term "environmental" has been adopted to describe objects or phenomena originating from the natural, physical environment as opposed to phenomena of a more purely social character. This dichotomy is necessary in light of present research aims,

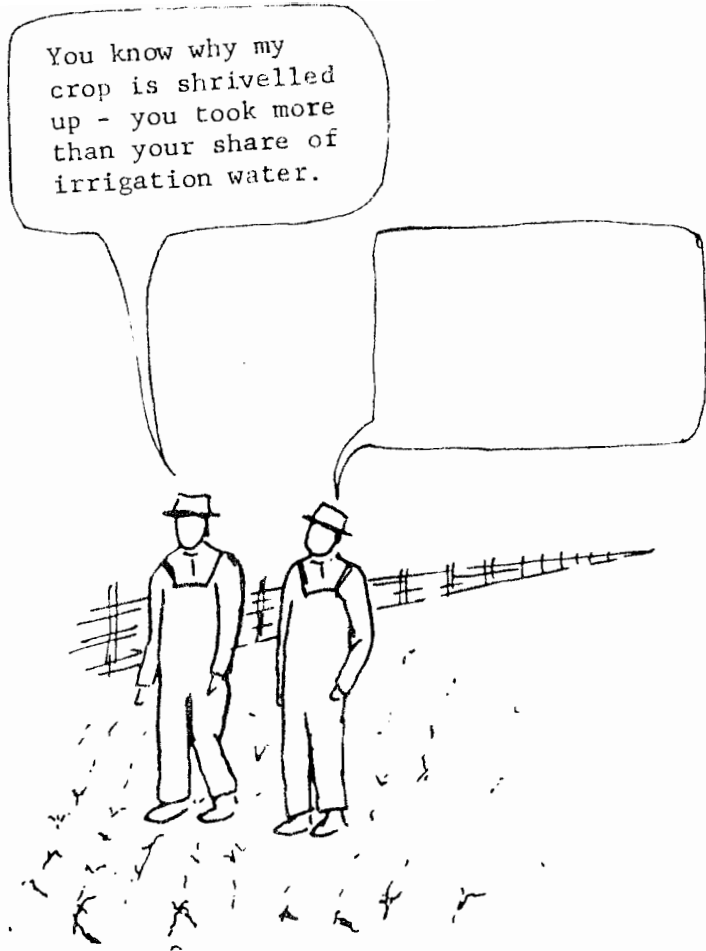
however an examination of the paired cartoon situations in Table 1 will reveal that many frustrations or stresses are not derived from a narrowly defined milieu but often include both social and natural, physical components.

The revised test approximates the Rosenzweig test as closely as possible in structure and scoring techniques. The new test thus comprises eighteen cartoons in which the proportion of ego blocking and super ego blocking has been maintained (i.e. twelve ego blocking and six super ego blocking). The eighteen cartoons are paired in such a way that the nine selected Rosenzweig social situations are complemented by parallel natural environment situations. The nine environmental situations range from the trivial and small-scale (i.e. caught in a rainstorm) to hazards having considerable impact--an earthquake, tornado, flood and drought. The two sets of cartoons were intended to be as complementary as possible in order that differences in response to social stress and stress from the natural environment could be evaluated. The complete list of cartoons is described in Table 1.

The subjects for this investigation were drawn from a group taking part in a summer course in introductory geography at the University of Toronto in 1968. The modified Rosenzweig P-F test formed one of a series of tests and questionnaires given to the students in a six-week period. The cartoons were arranged in a sequence which limited the subject's ability to recognise a pattern of ego blocking and super ego blocking situations and a matching of social and environmental events. The test was administered in the form of a small booklet with ample space provided for a written response. Each test booklet carried the following instructions:

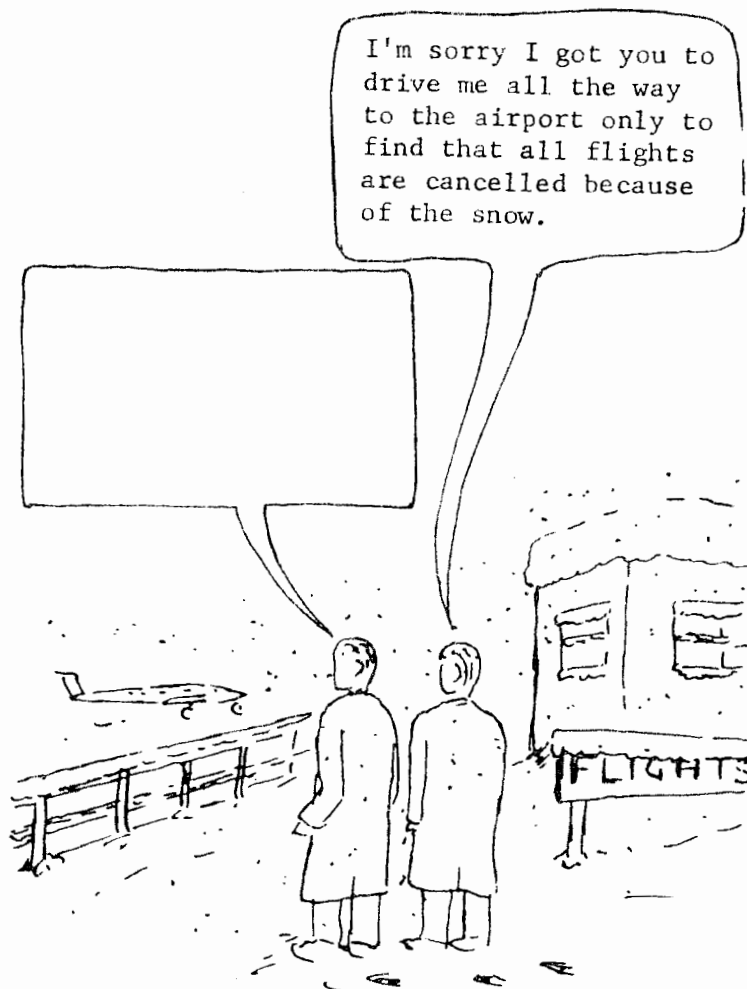
Each of the following pictures contains two or more people. One person is always shown as saying something to another. You are asked to write in the empty space below the picture the very first reply to the words that comes into your mind. Avoid being humorous or excessively polite. Work as quickly as you can.

Rosenzweig has advocated the use of verbal response or asking the subjects to say as well as to write in their response. This procedure was not followed in this initial experiment, but experience now suggests that it would have been of some help in deciding how to classify some of the responses. Each response could be scored for one or more of the factors



Response: _____

FIGURE 1



Response: _____

FIGURE 2

TABLE 1

MODIFIED ROSENZWEIG P-F TEST: PAIRED CARTOON SITUATIONS

EGO BLOCKING

SOCIAL	ENVIRONMENTAL
14. Driver of automobile is apologising to pedestrian for having splashed his clothes.	5. Flood--two people in boat leaving flooded house. Man apologising for not moving the furniture in time.
3. A man who has driven his friend to the station is apologising because a car breakdown led to missing the train.	12. Man is apologising to companion who has driven him to the airport only to find that planes are grounded because of heavy snow.
11. Girl remarking to companion seated in a theatre behind a woman with a large hat that she cannot see a thing.	2. Woman on apartment balcony expressing concern--air is so polluted that it's becoming impossible to breathe.
1. Woman is apologising to partner in card game for stupid play.	10. Two people in a rainstorm--one is apologising for having forgotten the umbrella.
6. Man fallen down steps is being asked whether he is hurt.	15. Man surveying damaged house is being asked if the tornado caused much damage.
8. Hostess expressing concern at a guest's having broken a favourite vase.	18. Man expressing concern that another's house had been destroyed by a landslide.

SUPER EGO BLOCKING

SOCIAL	ENVIRONMENTAL
9. Customer complaining to clerk that she brought back a watch three times and it still refuses to work.	17. Official complaining to contractor that this isn't the first time his bridge has been damaged by earth tremors.
4. Policeman checking motorist for passing school house at 60 mph.	13. Drought situation in a city--policeman checking householder for using lawnsprinkler.
16. Car accident--man accusing another of having had no right to pass.	7. Two farmers surrounded by shrivelled crop--one accusing the other of having taken more than his share of irrigation water.

discussed on page 2, although it was seldom necessary to employ more than two. The manifest meaning of the subject's words was taken as the basis for the scoring; and since responses often occurred in the form of two phrases, each of which may have had a different function, it was possible to assign one scoring value to the first group of words and another, if needed, to the second. In computing the frequencies of different forms of response, a subjective judgment was made by the authors if more than one score was applicable for a particular subject's response. As only one score was possible for each individual's response to a cartoon situation, a judgment was made as to which score was to be deleted, using the following rationale: when the respondent replied in two phrases the first was taken as the dominant response, unless strong intropunitive or extrapunitive tendencies were indicated in the latter part when this was taken to be the dominant response.

By its limited coverage, highly structured and relatively objective scoring procedures, the P-F test lends itself to more rigorous statistical analysis than many projective techniques, however a number of problems arise when modifying the test to provide a tool for comparing responses to environmental and social stresses. The selection of environmental situations which are comparable to Rosenzweig's social cartoons is particularly difficult. The results from this modified test are considerably biased by the difference in magnitude of stress and frustration provided by the paired social and environmental situations (i.e. watch broken--bridge collapse, theatre hat--air pollution). Other paired cartoons which appeared to be better matched evoked identical responses (i.e. missed train--snow at the airport; car speeding offense--lawdrought offense were characterised by an ego dominant, intropunitive response). It seems clear that before reliable results can be obtained a new set of social and environmental situations must be established.

The technique also provides a method for measuring individual deviations from a group conformity rating. For this to be performed, a selection of situations with the highest degree of conformity of response is required. When the eighteen cartoon situations were divided into two groups of nine to test for differences between social and environmental deviations, problems arose due to the small number of cartoons used. A

cut-off point in a list of most frequent responses to all the cartoons occurred at 46.6% agreement (bridge collapse) and the nine "items" above this point used in determining a group conformity rating (GCR) contained five social cartoons and four environmental cartoons. This was acceptable when calculating individual variations from this general GCR, however the five social situations and four environmental situations were insufficient to calculate individual variations from a social GCR and an environmental GCR. Instead of using eighteen cartoons it is now recognised that the number should be increased to equal Rosenzweig's original twenty-four at least.

The preliminary results of this trial experiment are discussed below. The limitations that have been identified are serious enough, however, that these should be taken as illustrative of the type of results that might be obtained, rather than as validated or well-supported conclusions.

RESULTS

In the eighteen cartoon situations, type of response and direction of aggression for the group of subjects were far from uniform. However, certain patterns appear in the data concerning the frequency of responses (Tables 2, 3, and 4). There was a considerable emphasis placed on an ego defense type of response which was the most frequent response in over 60% of all cartoon situations, while obstacle dominance and needs persistence were less evident in the responses. Where ego defense was the most frequent response it occurred on the average 71.1% of the time. Where obstacle dominance was most frequent however, it occurred on the average only 50.2% of the time, and needs persistence only 63.1%. In other words, ego defense was not only the most frequent response but also the most frequent by a larger margin.

Ego defense was emphasised in the responses to both environmental and social situations (see Table 5). Needs persistence seemed to play a more important role in social frustrations than in environmental frustrations. Obstacle dominance and needs persistence were present in similar proportions in the environmental situations.

We suspect that people see themselves to be more capable of improving the situations of social stress used in this experiment rather than changing

TABLE 2

ROSENZWEIG P-F TEST: DISTRIBUTION OF RESPONSES (%)

SITUATION	O-D			E-D			N-D			TOTAL
	Extra.	Intro.	Imp.	Extra.	Intro.	Imp.	Extra.	Intro.	Imp.	<u>n</u>
1	1.4	-	11.2	12.7	-	50.7	11.2	-	12.7	71
2	15.7	1.4	1.4	10.0	-	2.9	31.4	32.9	4.3	70
3	10.2	-	5.8	5.8	1.2	53.6	4.3	5.8	13.0	69
4	-	-	-	11.8	82.3	-	-	5.9	-	68
5	26.5	2.9	4.4	17.6	-	26.5	14.7	-	7.3	68
6	29.0	2.9	20.3	34.8	1.4	5.8	4.3	-	1.4	69
7	1.4	-	-	72.4	11.6	1.4	2.9	8.7	1.4	69
8	-	2.8	-	4.2	12.7	-	-	80.3	-	71
9	1.4	2.9	1.4	15.9	14.5	1.4	8.7	53.6	-	69
10	4.2	5.6	7.0	29.6	4.2	39.4	4.2	1.4	4.2	71
11	10.0	-	2.9	24.3	-	-	30.0	32.3	-	70
12	2.8	4.2	5.6	11.2	16.9	54.9	2.8	-	1.4	71
13	-	-	-	4.3	71.4	-	-	24.3	-	70
14	1.4	-	4.2	36.6	4.2	33.8	19.7	-	-	71
15	38.4	6.2	15.4	33.8	-	-	4.6	-	1.5	65
16	1.5	-	-	33.8	33.8	1.5	24.6	4.6	-	65
17	4.3	-	-	23.2	46.4	-	1.4	24.6	-	69
18	30.0	2.9	5.6	8.6	12.8	10.0	20.0	2.9	7.1	70

TABLE 3

THE DISTRIBUTION OF TYPES OF RESPONSE (PERCENT)

SITUATION	OBSTACLE DOMINANCE	EGO DEFENSE	NEEDS PERSISTENCE	TOTAL n
1. Card Play	12.6	<u>63.4*</u>	23.9	71
2. Air Pollution	17.1	12.9	<u>68.6</u>	70
3. Train Missed	16.0	<u>60.6</u>	23.2	69
4. Car Offense	-	<u>94.2</u>	5.9	68
5. Flood	33.8	<u>44.1</u>	22.0	68
6. Fallen Man	<u>52.2</u>	42.0	5.7	69
7. Drought--Farmers	1.4	<u>85.4</u>	13.0	69
8. Broken Vase	2.8	16.9	<u>80.3</u>	71
9. Watch Broken	5.7	31.8	<u>61.3</u>	69
10. Rain	16.8	<u>73.2</u>	9.8	71
11. Hat--Theatre	12.9	24.3	<u>62.3</u>	70
12. Snow--Airport	12.6	<u>83.0</u>	4.2	71
13. Drought--Lawn	-	<u>75.7</u>	24.3	70
14. Splashed Pedestrian	5.6	<u>74.6</u>	19.7	71
15. Tornado	<u>60.0</u>	33.8	6.1	65
16. Car Collision	1.5	<u>68.1</u>	29.2	65
17. Bridge Collapse	4.3	<u>69.8</u>	26.0	69
18. Landslide	<u>38.5</u>	31.4	30.0	70

* In each case the most frequent type of response is underlined.

TABLE 4

DISTRIBUTION OF RESPONSES (DIRECTION OF AGGRESSION)

SITUATION	EXTRAPUNITIVE	INTROPUNITIVE	IMPUNITIVE	TOTAL n
1. Card Play	25.3	-	<u>74.6</u>	71
2. Air Pollution	<u>57.1</u>	34.3	8.6	70
3. Train Missed	20.3	7.0	<u>72.4</u>	69
4. Car Offense	11.8	<u>88.2</u>	-	68
5. Flood	<u>58.8</u>	2.9	38.2	68
6. Fallen Man	<u>68.1</u>	4.3	27.5	68
7. Drought--Farmers	<u>76.7</u>	20.3	2.8	69
8. Broken Vase	4.2	<u>95.8</u>	-	69
9. Watch Broken	26.0	<u>71.0</u>	2.8	69
10. Rain	38.0	11.2	<u>50.8</u>	69
11. Hat--Theatre	<u>64.3</u>	32.3	2.9	71
12. Snow--Airport	16.8	21.1	<u>61.9</u>	71
13. Drought--Lawn	4.3	<u>95.7</u>	-	70
14. Splashed Pedestrian	<u>57.7</u>	4.2	38.0	71
15. Tornado	<u>76.8</u>	6.2	16.9	65
16. Car Collision	<u>59.9</u>	38.4	1.5	65
17. Bridge Collapse	28.9	<u>71.0</u>	-	69
18. Landslide	<u>58.6</u>	18.6	22.7	70

TABLE 5

TYPE OF RESPONSE:

FREQUENCY OF OCCURRENCE FOR ALL SITUATIONS (PERCENT)

	Obstacle Dominance	Ego Defense	Needs Persistence
Social	12.64	52.48	34.88
Physical	21.06	55.38	23.54

the stressful circumstances shown as arising from the natural environment. There is in our society a strong belief in the efficacy of powerful technology in controlling the natural environment; however when individuals are experiencing stress arising from the physical environment they may tend to emphasise the obstacle or origin of stress rather than offer an immediate solution to the frustrating circumstances. Reliance on the "technological fix" probably occurs when the immediate stress from natural hazards is remote but an entirely different kind of response occurs when individuals are experiencing an earthquake or tornado.

An examination of the frequency of response measured in terms of direction of aggression reveals no difference in the distribution of extrapunitive, intropunitive and impunitive responses between social and environmental situations. In both cases, extrapunitive responses are emphasised (see Table 6).

TABLE 6

DIRECTION OF AGGRESSION:

FREQUENCY OF OCCURRENCE FOR ALL SITUATIONS (PERCENT)

	Extrapunitive	Intropunitive	Impunitive
Social	45.74	28.25	26.00
Environmental	43.54	33.38	23.07

With this general framework there was considerable variation in direction of aggression given a specific type of reaction. The greatest conformity occurred in the cartoons concerning the car speeding offence (4), the broken vase (8) and the two drought situations (7 and 13) where there was more than 70% agreement (i.e. 72.4% agreed on an ego defense, extrapunitive response to the drought situation where one farmer is accusing another of having taken more than his share of the irrigation water). At the other end of the scale, air pollution, the flood and car collision provided a very wide range of response (see Table 7)

It is interesting to note the degree of conformity and types of response between the paired social and environmental cartoons (see Tables 8 and 9). Here differences in response to the different types of frustration are revealed and the difficulty of matching situations in the physical and social environments is illustrated. Some broad similarities are evident--a high proportion of the subjects responded with an ego defense, intropunitive reaction to the paired super ego blocking situations concerning the car speeding offense and the lawn drought offense. However, in another super ego blocking situation, broken watch and collapsed bridge, the degree of conformity is low and the type of response differs, although both have an intropunitive direction of aggression. Needs persistence is apparent in the social situation while ego defense is emphasised in the environmental situation. The third pair of super ego blocking cartoons registers considerable variation--there is little conformity in the social situation (car collision) while more than 70% of the subjects responded with an ego defense, extrapunitive reaction to the farmer's accusation in the drought situation. Hence differences in types of response to the environmental and social frustrations are masked, to varying but undetermined degrees, by the difficulties inherent in establishing the pairs.

GROUP CONFORMITY RATINGS

To gain a more accurate measure of the degree of conformity of response, a Group Conformity Rating (GCR) was obtained by a comparison of each subject's scores with those expected on the basis of conformity of

TABLE 7

MAXIMUM FREQUENCY OF RESPONSES FOR EACH SITUATION

SITUATION	PERCENT RESPONSE	RESPONSE
4. Car offense (S)*	82.3	E-D Intropunitive
8. Broken vase (S)	80.3	N-P Intropunitive
7. Drought--farmers (E)	72.4	E-D Extrapunitive
13. Drought--lawn (E)	71.4	E-D Intropunitive
12. Snow--airport (E)	54.9	E-D Impunitive
3. Train missed (S)	53.6	E-D Impunitive
9. Watch broken (S)	53.6	N-P Intropunitive
1. Card play (S)	50.7	E-D Impunitive
17. Bridge collapse (E)	46.4	E-D Intropunitive
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10. Rain (E)	39.4	E-D Impunitive
15. Tornado (E)	38.4	O-D Extrapunitive
14. Splashed pedestrian (S)	36.6	E-D Extrapunitive
6. Fallen man (S)	34.8	E-D Extrapunitive
18. Landslide (E)	30.0	O-D Extrapunitive
2. Air pollution (E)	-	
5. Flood (E)	-	
11. Hat--theatre (S)	-	
16. Car collision (S)	-	

* (S) - Social
(E) - Environmental

TABLE 8

INCIDENCE OF HIGH CONFORMITY RESPONSE TO ENVIRONMENTAL AND SOCIAL STRESS

SOCIAL STRESS		ENVIRONMENTAL STRESS	
	Percent		Percent
Car offense	82.3 E-D Intro.	Drought--farmers	72.4 E-D Extra.
Broken vase	80.3 N-P Intro.	Drought--lawn	71.4 E-D Intro.
Train missed	53.6 E-D Imp.	Snow--airport	54.9 E-D Imp.
Watch broken	53.6 N-P Intro.	Bridge collapse	46.4 E-D Intro.
Card play	50.7 E-D Imp.	Rain	39.4 E-D Imp.
Splashed pedestrian	36.6 E-D Extra.	Tornado	38.4 O-D Extra.
Fallen man	34.8 E-D Extra.	Landslide	30.0 O-D Extra.
Hat--theatre	-	Air pollution	-
Car collision	-	Flood	-

TABLE 9

MAXIMUM FREQUENCIES IN PAIRED SOCIAL AND ENVIRONMENTAL SITUATIONS

SOCIAL STRESS		ENVIRONMENTAL STRESS	
	Percent		Percent
Car offense	82.3 E-D Intro.	Drought--lawn	71.4 E-D Intro.
Broken vase	80.3 N-P Intro.	Landslide	30.0 O-D Extra.
Train missed	53.6 E-D Imp.	Snow--airport	54.9 E-D Imp.
Watch broken	53.6 N-P Intro.	Bridge collapse	46.4 E-D Intro.
Card play	50.7 E-D Imp.	Rain	39.4 E-D Imp.
Splashed pedestrian	36.6 E-D Extra.	Flood	-
Fallen man	34.8 E-D Extra.	Tornado	38.4 O-D Extra.
Hat--theatre	-	Air pollution	-
Car collision	-	Drought--farmers	72.4 E-D Extra.

response throughout the sample. The nine items selected in establishing a measure of group conformity comprised a mix of five social and four environmental cartoons in which uniformity of response was attained by at least 46% of the respondents (see Table 7). In general, greater conformity was attained in the social situations than in the environmental frustrations. The distribution shown in Table 10 was as expected--there is a grouping of conformity ratings between 4/9 and 7/9 with very few respondents entirely in agreement or in disagreement with the most frequent response to each item.

It is particularly difficult to devise two separate GCR's for social stress and environmental stress or frustration from the general GCR when the number of items within these two subdivisions is so small (5 and 4 respectively). A comparison of degree of conformity to the group rating is made difficult by the difference in number of items used for the environmental and social situations, however it should be noted that 8% to 10% of the subjects responded markedly differently from the group average (GCR) in both the social and environmental groups (see Tables 11 and 12).

A more rigorous statistical analysis was not performed on the data because of the problems encountered in modifying the Rosenzweig test to include stress or frustration originating from the natural, physical environment as well as from the social milieu. The experiment performed a useful function in revealing these difficulties and in providing insights into how they may be overcome. Two improvements are obviously needed: (1) increase the number of cartoon situations to permit a division of the general Group Conformity Rating into social and environmental groups, and (2) devise a new series of cartoons in which the differences in amount of stress or frustration provided in the paired social and environmental events are minimized, and in which other variables are controlled to a greater degree (e.g. sex of the figures portrayed in the cartoons). Another limitation of the study was the difference in range of physical and social situations. Cartoons concerned with physical stresses covered a wide range from rain shower to earthquakes and landslides. Social stresses covered a far narrower range and generally excluded the

TABLE 10

GENERAL GROUP CONFORMITY RATING

Using items 1, 3, 4, 7, 8, 9, 12, 13 and 17.

	<u>Amount of Conformity</u>	<u>Subjects</u>	
		<u>N</u>	<u>Percent</u>
	1/9	-	-
	2/9	1	1.4
	3/9	1	1.4
	4/9	13	18.2
	5/9	16	22.5
	6/9	16	22.5
	7/9	19	26.7
	8/9	3	4.2
	9/9	2	2.9
		<hr/>	
		71	

Item characteristics

- 1 E-D Impunitive
- 3 E-D Impunitive
- 4 E-D Intropunitive
- 7 E-D Extrapunitive
- 8 N-P Intropunitive
- 9 N-P Intropunitive
- 12 E-D Impunitive
- 13 E-D Intropunitive
- 17 E-D Intropunitive

TABLE 11

GROUP CONFORMITY RATING: ENVIRONMENTAL STRESS

Using items 7, 12, 13, 17.

	<u>Amount of Conformity</u>	<u>N</u>	<u>Subjects</u>	
			<u>Percent</u>	
	1/4	8	11.2	
	2/4	23	32.8	
	3/4	34	47.9	
	4/4	6	8.4	

Item characteristics

- 7 E-D Intropunitive
- 12 E-D Impunitive
- 13 E-D Intropunitive
- 17 E-D Intropunitive

TABLE 12

GROUP CONFORMITY RATING: SOCIAL STRESS

Using items 1, 3, 4, 8, 9.

	<u>Amount of Conformity</u>	<u>N</u>	<u>Subjects</u>	
			<u>Percent</u>	
	1/5	6	8.4	
	2/5	18	25.4	
	3/5	15	21.1	
	4/5	20	28.2	
	5/5	12	16.9	

Item characteristics

- 1 E-D Impunitive
- 3 E-D Impunitive
- 4 E-D Intropunitive
- 8 N-P Intropunitive
- 9 N-P Intropunitive

more extreme kinds such as murder and suicide. A third possibility is the inclusion of new scoring techniques to reduce the level of generalisation brought about by the use of only two "factors", the type of response and direction of aggression.

In spite of these limitations the test appears to have potentially great value for the study of individual and group responses to threats and stresses of various kinds. A more refined and carefully constructed modification of the Rosenzweig P-F test offers the prospect that cultural differences in response to natural hazards can be examined, and that it may eventually show that response to frustrations originating in the natural environment differs from response to frustrations of a more purely social character.⁵

⁵The extensive use made of this particular projective test is noted by Bjerstedt. About 275 published references were known to the test author in 1962 and it has widespread international use. Although the basic test has two major uses (the individual diagnosis of frustration-related behaviour tendencies and research in testing various general theories of frustration tolerance) a number of modifications are noted in the text.

Bjerstedt, A. in The Sixth Mental Measurement Yearbook, 1965 (ed. Buros), pp. 509-516.