MAJOR CALAMITIES, MAIL SURVEYS, AND POSSIBLE HALO EFFECTS

Thomas J. Steele, University of Montana
W. Lee Schwendig, Idaho State University

ABSTRACT

On April 26, 1986 one of a cluster of Russian nuclear power plants at Chernobyl exploded and caught fire. Subsequent publicity was massive. By sheer happenstance the authors had just put into motion a study in which an existing nuclear power plant in the western United States was one of four items being investigated as a non-traditional tourist attraction. This unplanned and unforeseeable upheaval in the macroenvironment produced some unusual results.

Introduction

At the outset we must emphasize that this paper is not the product of inspired insight or crafty methodology attributable to the authors. That which occurred simply fell in our laps and in no way could have been foreseen. Quite simply, we had in the works a seemingly routine consulting project wherein a nuclear fired electric power plant was one of the topics under investigation. Our questionnaires had barely been mailed when a Russian nuclear power plant at Chernobyl elected to self-destruct.

The client for the project was a tourism council in a western state. They had created a mailing list and were interested in some very specific information from the parties on the list. While the geographic region which this council oversees is possessed of great natural beauty, so are many other places. The authors were looking for a competitive edge and managed to persuade the client to let us explore the efficacy of some very non-traditional tourist attractions. Specifically these were (1) an electric power generating nuclear reactor, (2) a hydro electric power plant, (3) a potato harvesting operation, and (4) a potato processing operation. All four of these exist in the region in addition to the standard draws such as trout fishing, big game hunting, snow skiing, snowmobiling and the like.

As a result of a prior, state-mandated competitive bidding process, the client was required to funnel all work through an advertising agency located some 250 miles away. While this created a few minor administrative aggravations, the greatest problem was a length limit the agency imposed on the questionnaires. Agency minions were adamant regarding a two-page maximum (front and back of one page). With some judicious structuring this was sufficient to extract the information desired by the client. However, the authors were able to eke out only about 2-1/2 inches of space for the exploratory work on non-traditional tourist attractions.

Since this whole notion was essentially an addendum to the client's project it was relegated to the tail end of the survey form and inserted just in front of the demographics. The specific interrogation, as it appeared on the final instrument, is shown below.

Please indicate how interested you might be in visiting each of the following:

	Extremely Interested (5)				Not at all Interested (1)
Electric power generating nuclear reactor	5	4	3	2	1
Hydro electric power plant	5	4	3	2	1
Potato harvesting operation	5	4	3	2	1
Potato processing operation	5	4	3	2	1

As the reader can probably surmise, it was here that we were attacked by that which we consider to be a variant of the halo effect. Happily, the unfortunate incident at Chernobyl did not destroy the integrity of the entire project.

Clearly a property of mail surveys is that once they are gone that is end-of-game. When something goes awry there is usually no redemption. In this instance, however, serendipity arose in the form of an opportunity for a longitudinal look at responses as the returns came in. We were able to sort questionnaires by postmark on the S.A.S.E-.'s which were included in the outgoing mailing. This opened a window on the halo effect mutation through the duration of a completely uncontrived course of events.

With reference to a study they had performed dealing with the halo effect in multi-attribute attitude models, Beckwith and Lehmann (1975, p. 266) state that this ". . . model does not address the question of whether attitude changes precede or follow belief changes which would be better addressed by a longitudinal study manipulating beliefs and attitudes." While our situation did not possess the multi-attribute aspect, we do have the longitudinal properties they discuss.

Much of the previous work on the halo effect has centered around contaminated attribute measures or performance measures arising from a backward haloing based on an individual's overall feeling toward the object in question. The longitudinal perspective appears to be largely missing and the incorporation of multiple and rather well differentiated objects seems not to be particularly prevalent either.

In our situation we really do not have attitude measures per se nor did we intend to. Tourist visitation can clearly result from a pre-existing attitude, but there are many other possibilities as well. Curiosity and absence of attitude undoubtedly motivate much tourism behavior. Some individuals will seek information by visitation in order to learn and simply see whether or not they like an attraction. Others may well engage in certain tourist behavior merely to be able to say they've done it. Still another possibility is a subset of consumers with an initially unfavorable overall feeling who visit someplace or something in order to gather negative information to foster cognitive consistency. Predisposition toward visitation behavior for whatever reason, and not attitude state, formation or change was that which was of interest at the time of the project.

Over the years there has evolved a rather large body of literature regarding the halo effect. All things considered, however, in our accidental circumstance (i.e., data over time, a shakeup created by non-artificial external forces and a set of reasonably separate and distinct objects in the study) we could find nothing directly comparable. Therefore, we thought we would attempt to share our experience. The following section provides an overview of past research on "halo" in general, but did not, in the conventional scholarly sense, serve as a springboard for our project.

Background

Recognition of the phenomenon now commonly known as the halo effect dates back to Thorndike (1920). Since that time much has been written. This section is intended only as a synopsis and is certainly not exhaustive.

Some years after its first identification, Lorge (1937) discussed the possibility of halo involvement in peculiarities noted in response sets on psychological tests and speculated that such might arise from personality traits. In the ensuing years

research surrounding the halo effect has branched in four reasonably distinct directions. The first of these had its inception with Couch and Keniston (1960) wherein they mounted a very thorough assault on comprehension of the "yea-sayer nay-sayer" syndrome. Marketers, in turn, pursued this avenue. See, for instance, Wells (1961), Wells (1963), or Becker and Myers (1970).

A second major arena of investigation deals with performance review. Researchers here have contributed richly to the body of literature on the halo effect. In consecutive articles in the same journal issue Landy et al. (1980) and King, Hunter and Schmidt (1980) address the problem of the halo effect in rater appraisals of subordinates. McLenithan (1981) specifically cites it in a string of admonitions to those involved in performance rating. Generally, the performance appraisal literature discussed the halo effect in terms of the tendency it exerts toward rater evaluation based on the rater's general or overall impression of an individual rather than independent and objective judgments along various dimensions of job performance.

Measurement issues and suggestions for statistical control form the third branch of halo effect research. The contributions here are many. See, for example, Henik and Tzelgov (1985), Dillon, Mulani and Frederick (1984), Holbrook (1983), Murphy (1982), Landy et al. (1980, 1982), Holbrook and Huber (1979), Bemmaor and Huber (1978) or Myers (1965). While erudite, thorough and rigorous, these works seem not to indicate a general meeting of the minds. In any event the topics involved do not bear directly on the paper at hand.

The fourth branch of the halo effect research tree tends to be related to two of the foregoing. This branch introduces the impact of halo error on multi-attribute attitude models in marketing applications and hence the similarity to performance review. Evaluators, be they consumers or supervisors, are operating with a specific attitude object in mind while being requested to render independent judgments regarding that object along multiple dimensions. Marketing oriented writers seem also to have paid considerable attention to the control/partitioning aspects of branch three. In one of the earlier works in a marketing vein Beckwith and Lehman (1975), studying viewer attitudes toward television shows, suggest that the generally good results reported from the use of multi-attribute attitude models may stem from the operation of the halo effect. Johansson, MacLachlan and Yalch (1976) take issue with this and build a case that Beckwith and Lehman's results may be overstated.

Drawing on the work of Reibstein, Lovelock and Dobson (1980), Holbrook (1983, p. 247) introduces the notion of ". . a nonrecursive structural model to account for affective overtones in perceptual distortion." In the subsequent analysis he submits data from a previous study (Holbrook 1981) to a review under the new method. Interestingly some reversals of directionality due to the halo effect materialize although statistical significance occurred in only one instance. The tentative explanation proffered is respondent ". . fatigue that is eventually offset in part by a positive effect of familiarity." (Holbrook 1983, p.250).

Other researchers have taken a different tack aimed at ". . . identifying and removing perceptual distortions in product space analysis" which ". . . does not require the researcher either to (1) throw away or ignore the first principal component or (2) arbitrarily select attributes in order to define an affect index . . ." (Dillon, Mulani and Frederick 1984, p.184). They propose a two-step double-centering transformation to create an ipsative matrix. This manipulation they state " . . . removes response set bias and halo error . . . " (Dillon, Mulani and Frederick 1984, p. 192). However, they do point out that the process may tend to break down when dealing with experienced consumers or respondents as such individuals may operate on a universal plane involving a constrained set of attributes.

For the interested reader, up to the time of its writing, perhaps the single most comprehensive treatment of the subject of the halo effect was Cooper (1981).

Method and Analysis

In the orthodox sense methodological issues did not lie at the heart of this study. Thus we've elected to combine method and analysis into a single section.

Our client had developed a mailing list based on inquiries arising from a media campaign. All things considered the decision was made to em-

ploy a mail survey. The list was in its formative stages and rather small (N = 719) so a census seemed in order. We performed the usual design/pre-test/revision . . . drill and then mailed the questionnaires. The reader knows what happened next.

In all, the response rate was about 55% (395 usable survey forms) for the client's data. For this paper, however, it was somewhat smaller (334 or about 46%) as a result of missing or illegible postmarks. Nonresponse bias is, of course, an ever present potential problem. However, in this case, given the nature of the population and the uniformity of reaction, we feel safe. Something in excess of 80% of the mailing list was composed of residents of the northern portion of a particular western state. Short of mentioning the specific state (and incurring whatever risk that might carry), we can assure the reader that a more homogeneous population would be very difficult to find. Given this fact plus the consistency of response patterns, we feel as certain as anyone ever could that non-response was not an issue here. We recognize, of course, that this is arguable.

As the responses arrived they were opened and questionnaires and envelopes were stapled together. This was for an entirely different purpose as, quite frankly, at that point it hadn't yet dawned on us to examine the results chronologically. (Just another case of fortuitous circumstance.) At any rate when the light finally went on we were in a position to cull and sort by postmarks.

As the reader may recall the Russians were initially less than prompt in announcing their disaster at Chernobyl. Monitoring devices in other nearby countries were the first to detect it. When word did begin to seep out two or more days later, the Russians were again something short of fully forthcoming regarding the magnitude of the accident. Within another few days to a week the world learned of the fire which erupted in their disabled plant and there was endless speculation by the news media of a core meltdown and rumors of thousands of dead civilians. The timing of all of this was such that it unfolded smackdab in the middle of our study. Table 1 shows a distribution of responses by date of postmark. To reiterate, in light of the way in which news regarding the Chernobyl accident was disseminated, it is apparent from the table that our responses bracketed the massive publicity.

TABLE 1

Distribution of Usable Responses by Date

Date	No. of Usable Responses
5-3-86	II
5-4-86	IIII
5-5-86	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 II
5-6-86	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 I
5-7-86	𝍸 𝍸 𝍸 𝍸 𝍸
5-8-86	𝍸 𝍸 𝍸 𝍸 I
5-9-86	𝍸 𝍸 𝍸 𝍸 III
5-10-86	𝍸 III
5-11-86	I
5-12-86	𝍸 𝍸 𝍸
5-13-86	𝍸 𝍸 II
5-14-86	𝍸 𝍸 𝍸 𝍸 II
5-15-86	𝍸 𝍸 𝍸 III
5-16-86	𝍸 𝍸 𝍸
5-17-86	𝍸
5-18-86	III
5-19-86	𝍸 𝍸 𝍸
5-20-86	𝍸 𝍸
5-21-86	𝍸
5-22-86	𝍸
5-23-86	𝍸 I
5-24-86	II
5-27-86	𝍸 II
5-28-86	II
5-29-86	𝍸 II
5-30-86	𝍸
5-31-86	II
6-2-86	III
6-3-86	I
6-6-86	I
6-7-86	I
6-9-86	I
6-12-86	II
6-17-86	II
6-30-86	I

On some dates the sample sizes were exceedingly small. For instance May 3 and 4, 10 and 11, 17 and 18, etc. The first few of these happened to be weekends and therefore for analysis, responses on these dates were combined. By the first of June the typical tapering off pattern of mail surveys was beginning to manifest. Therefore, the decision was also made to combine the twelve usable responses received in June.

Given the scale we used regarding interest in visiting the various nontraditional tourist attractions, we felt the most appropriate measure of central tendency would be the median. While it seems to have become commonplace to ascribe interval properties to such a scale, the authors were unwilling to make this leap. Table 2 shows the distribution of medians by date and by item number.

Eyeballing these seemed to reveal an intriguing pattern and we decided to plot the data for a better

TABLE 2

(Median Scores)

Date	Question #1	Question #2	Question #3	Question #4
May 3 & 4	2.5	3.5	4.0	4.0
May 5	2.0	2.0	2.0	2.0
May 6	3.0	3.0	3.0	2.0
May 7	3.0	3.0	3.0	3.0
May 8	2.0	2.0	2.0	2.0
May 9	2.0	2.0	1.0	2.0
May 10 & 11	2.0	2.0	2.0	2.0
May 12	2.0	2.0	2.0	2.5
May 13	1.0	2.0	2.0	2.5
May 14	1.0	1.0	1.0	1.0
May 15	1.0	2.0	2.0	2.5
May 16	1.0	1.0	2.0	2.0
May 17 & 18	1.5	2.0	1.5	1.5
May 19	1.0	1.0	1.0	1.0
May 20	2.0	2.0	2.0	2.0
May 21 & 22	3.0	3.0	3.5	4.0
May 23 & 24	1.5	2.5	2.5	3.0
May 27 & 28	1.0	1.0	1.0	1.0
May 29	1.0	1.0	3.0	2.0
May 30 & 31	1.0	1.0	1.0	1.0
June 2-30	2.5	2.0	3.0	3.0

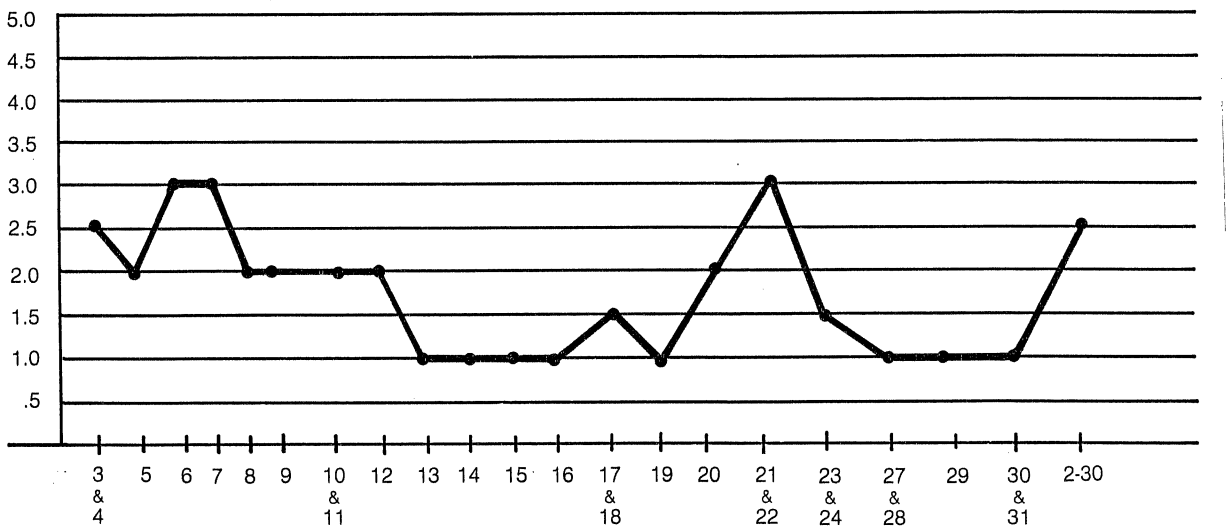
TABLE 3

Differences Between Medians By Date

Date	Quest.#2-Quest.#1	Quest.#3-Quest.#1	Quest. #4-Quest.#1
May 3 & 4	+1	+1.5	+1.5
May 5	0	0	0
May 6	0	−1	−1
May 7	0	0	0
May 8	0	0	0
May 9	0	−1	0
May 10 & 11	0	0	0
May 12	0	0	+0.5
May 13	+1	+1	+1.5
May 14	0	0	0
May 15	+1	+1	+1.5
May 16	0	+1	+1
May 17 & 18	+0.5	0	0
May 19	0	0	0
May 20	0	0	0
May 21 & 22	0	+0.5	+1
May 23 & 24	+1	+1	+1.5
May 27 & 28	0	0	0
May 29	0	+2	+1
May 30 & 31	0	0	0
June 2-30	−0.5	+0.5	+0.5
$\bar{X}$net =	+ .19	+ .31	+ .43
$\bar{X}$absolute =	.21	.5	.52

FIGURE 1

Median Scores for Question #1 by Dates



look. Figures 1, 2, 3 and 4 show the plots. The first three follow exceedingly similar patterns. The fourth exhibits a similar tendency but is less distinct. What appears to have happened is that the degree of interest in visiting a nuclear power plant decreased precipitously with the onslaught of publicity about Chernobyl. This, of course, is not surprising. However, the nuclear power plant was the lead question in the quatrain and appeared to create a mind set in the respondents which in turn "haloed into" the completely unrelated notions of the hydro power plant, the potato harvesting operation and the potato processing operation. By the time respondents reached the fourth item, one of two things seemed to be starting to occur. Either they regained their composure (and objectivity) or forgetting set in.

FIGURE 2

Median Scores for Question #2 by Dates

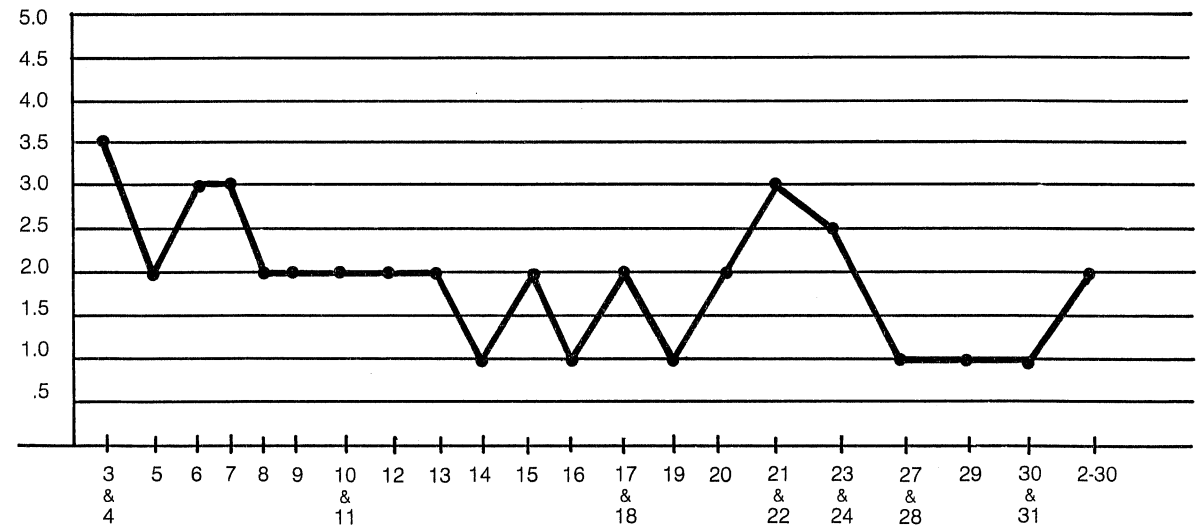
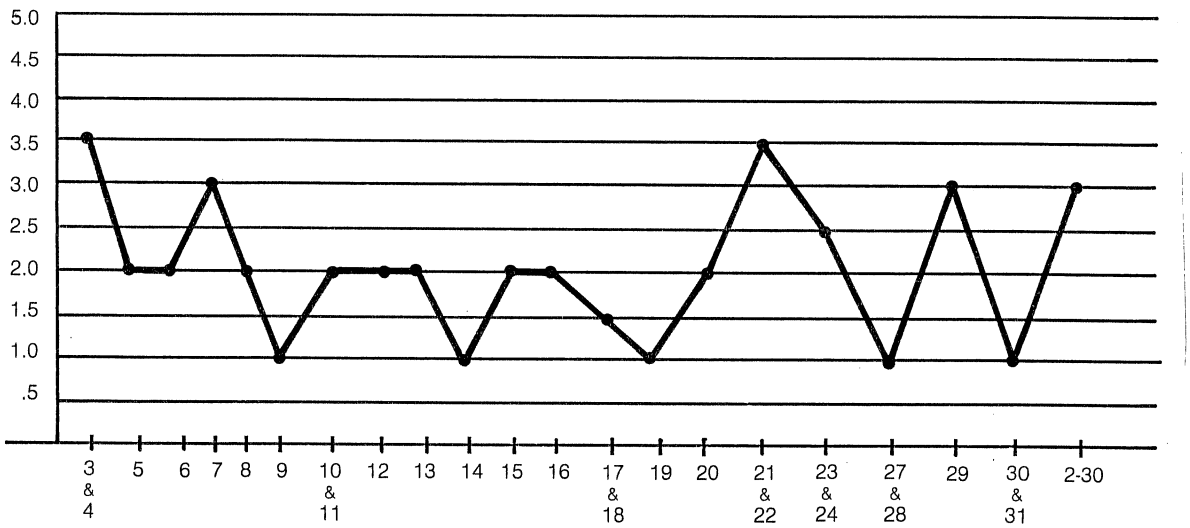


FIGURE 3

Median Scores for Question #3 by Dates

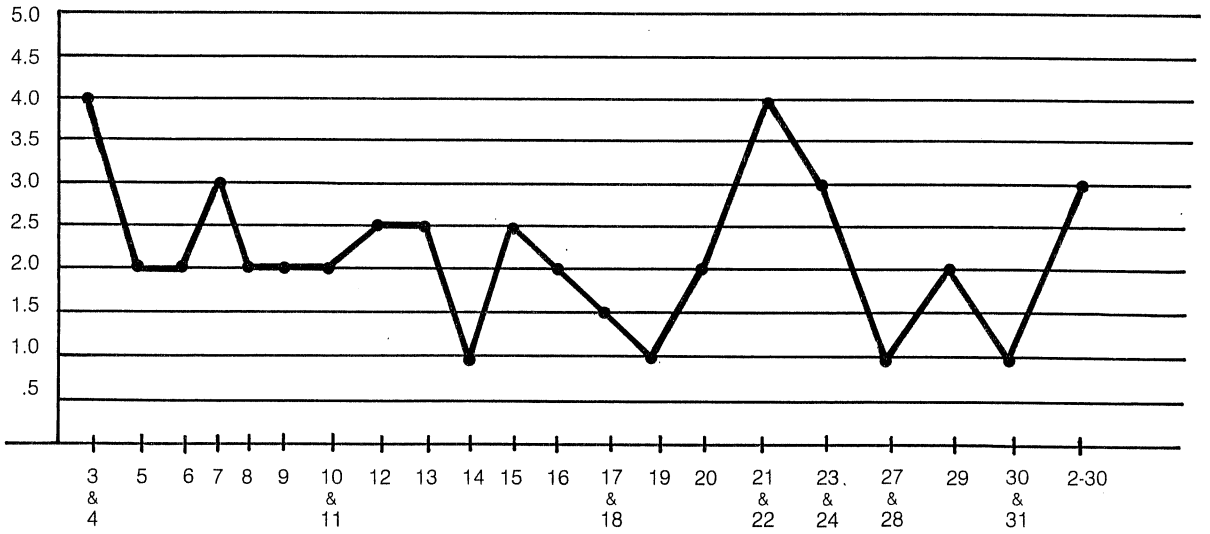


Another way to illustrate this phenomenon is shown in Table 3. Here we subtracted the median scores (by date) on question #1 (nukes) from each of the other three. Again it is very apparent that the "hot" question sets the pattern, but over time the effect begins to wane. The foot of each column shows means for these differences. The first is a net mean (includes sign- age) and the second stems from the absolute deviations.

It might also be worth noting that the proportion of deviations rises over time (i.e., as respondents proceed through the four questions). In this case it commences at 0.29 (col. 2) and increases to 0.48 (col. 4), merely demonstrating the same thing in another way.

FIGURE 4

Median Scores for Question #4 by Dates



The very high number of matches from question to question is indeed striking. Given the nature of the data there were nine medians possible per date (i.e., 5, 4.5, 4, 3.5, etc.). If one viewed this as a binomial process with a success probability of one-ninth, these matches are in no way attributable to chance. Perhaps a more realistic (and conservative) approach would be to consider the process as having a one in five probability (as opposed to one in nine) of matching by chance alone. This would mean removing the extremes at each end of the scale and considering only 4, 3.5, 3, 2.5 and 2 as outcomes.

The general form of the binomial is:

$$\Pr[X] = \frac{n!}{X!(n-X)!} \cdot p^{x} \cdot q^{n-x} \text{ for } X = 0, 1, 2, \ldots, n$$

Where:
X = the number of successes
n = the number of trials
p = the success probability
q = (1 – p) or the failure probability

Where:

X = the number of successes
n = the number of trials
p = the success probability
q = (1 - q) or the failure probability

For column two of Table 3, using p = .2 (i.e., one in five) the probability of 15 or more matches (successes) by chance (i.e., X = 15 or 16 or 17 . . . or 21) is .00000. For column three of Table 3, using the same "success" rate, the probability of eleven or more (out of 21) perfect matches by chance alone is .00078 + .00016 + .00003 + .00000 . . . + .00000 = .00097.

The fourth column wherein the medians of question #1 were subtracted from those of question #4 also exhibits 11 out of 21 perfect matches. Therefore, the chance probability here is similarly .00097.

If one adopted an extreme, ultraconservative approach and employed a success probability of .33 (i.e., one in three), the resulting probability for column 2 is .00035 and for columns 3 and 4 the probability is .052.

This makes it very difficult to believe that our observed responses represent a random process. Clearly there is a pattern involved.

A question which now arose dealt with finding something beyond the foregoing to tell us a little about the downward trends. Although somewhat uncomfortable with the necessary assumptions, we regressed the "interest in visiting" scores against time for all cases (not collapsed as in Figures 1 to 4). The results are shown in Table 4.

TABLE 4

OLS Results

ITEM	SLOPE	SIGNIFICANCE
Electric Power Generating Nuclear Reactor	-.02142	.01277
Hydro Electric Power Plant	-.01815	.01992
Potato Harvesting Operation	-.00794	.19069
Potato Processing Operation	-.00383	.34023

The inference we draw is that there is a related pattern here. All slopes are negative over time, but decrease in degree.

As we see it, there are two possible explanations. The first is the potential eventuality that the characteristics of the respondents changed over time. The second is a halo effect variant.

To examine the first we broke responses into four categories by date of postmark and then ran chi-squared contingency tests against the demographic variables of sex, age, years in school and income. The four category break on time gave roughly equal numbers of respondents in each. They ranged from 60 in the smallest to 88 in the largest. Results are summarized in Table 5.

TABLE 5

Results of Contingency Tests—Demographics by Time Blocks

VARIABLE	CHI-SQUARED	DEGREES OF FREEDOM	PROBABILITY
Sex	3.66	3	.3011
Age	5.96	9	.7437
Years in School	3.75	6	.7103
Income	7.74	9	.5608

Independence came through loud and clear in all cases. In our estimation, this leaves only one plausible explanation and that is a manifestation of the halo effect.

Conclusions and Implications

In light of the evidence (the data plots, the binomial probabilities and the sequential but decreasingly negative slopes of the OLS's) there can be little doubt that something went on here. Our explanation is "forward halo" from the first item through the succeeding (and largely unrelated) three. Past research has demonstrated more nearly a "backward halo"--i.e., from general attitude toward an object back into the ratings of associated performance criteria or attribute/belief structures for that object.

Granted, the case at hand was extreme given the magnitude of the Chernobyl incident. However, the situation does suggest that this sort of bias could beset an unwary researcher anytime or anyplace. In any sampling procedure involving humans, there are likely to be cases where personal triumphs or tragedies could lead to distorted responses on an individual basis. Researchers, of course, lean on the law of large numbers to overwhelm or "wash" such instances. But our experience suggests that there could easily be events which would affect substantial numbers of people and still go unnoticed. In survey work covering a large geographic area it would certainly be impossible to be aware of all localized phenomena.

It's tough to assess just what it would take to cause this "forward halo" for any given survey topic, but things such as a plant closing, a plant opening, a local political scandal, an Ivan Boesky episode, or a meteoric drop in the stock market, would sure be likely candidates. Our unique situation could never be deliberately replicated, but it might be well to be aware of the possibility of something such as this occurring in any project and going undetected. Across the whole spectrum of social science research that which deals with marketing, vast in scope as it is, is probably only a tiny fraction. It's somewhat frightening to consider how many improper inferences may have been drawn over the years. In marginal situations it might not take a great deal of forward haloing (positive or negative) to introduce spurious statistical significance or remove that which is real.

Researchers of all ilks pay much attention to considerations such as question structure, question sequencing, sampling, pre-testing and so on. Perhaps there is too great a tendency to delude ourselves into thinking that we are well on our way to mastering the art. Complacency may very well lead to a fatuous acceptance of contaminated and meaningless results arising from sources of which no one has yet even dreamed.

The implications of the results of our experience are primarily for standard survey research and not theory. A very typical scenario might entail the P.I.'s closely supervising a project up to the point where data begin to arrive. The coding and loading then get relegated to a research assistant, graduate assistant, secretary or perhaps a work-study helper. The P.I.'s then phase back into the picture with the data safely in a computer and engage in some sort of analysis befitting the situation. Quirks in the data get lost.

In our case the circumstances were so extenuating that we took a long, hard look. However this is not the general rule. It's conceivable that another event could have occurred which would have produced a similar effect and we would never have known it. Envision, for instance, a regional environmental brouhaha over the proposed damming of a free-flowing river and intense, but only regional, press coverage. If reporting on the issue happened not to extend to the location of the P.I.'s a subset of the sample could have been affected and no one would have known to look.

Again referring to the propitious timing of the Chernobyl incident, we could see the impact longitudinally as the event transpired during the project. In the case of an unrecognized happening which transpired prior to the outset of a project, the distortions would surely be there, but without the distinct downward trend. Detection would be impossible. This is not a positional bias and no amount of rotation (which we doubt is routinely done anyway) would forestall it.

Even if one were ever on the alert for a "history" bias among the many types which are known, there are pockets of prosperity and ebullience and pockets of despair and desperation everywhere even in the absence of a momentous event. The implication here is less clear, but this "forward halo" bias could be particularly insidious, very pervasive and nearly completely immune to diagnosis. The ingenuous researcher is probably victimized far more frequently than anyone would ever guess.

References

1. Becker, Boris and John G. Myers (1970), "Yeasaying Response Style," *Journal of Advertising Research*, 10 (December) 31-37.
2. Beckwith, Neil D. and Donald R. Lehmann (1975), "The Importance of Halo Effects in Multiattribute Attitude Models," *Journal of Marketing Research*, 12 (August), 265-275.
3. Bemmaor, Albert C. and Joel C. Huber (1978), "Econometric Estimation of Halo Effect: Single versus Simultaneous Equation Models," in *Advances in Consumer Research*, Vol. 5, ed. H. Keith Hunt, Ann Arbor, MI: Association for Consumer Research, 477-480.
4. Cooper, W.H. (1981), "Ubiquitous Halo," *Psychological Bulletin*, 90 (Number 2), 218-244.
5. Couch, Arthur and Kenneth Kenistan (1960), "Yeasayers and Naysayers: Agreeing Response Set as a Personality Variable," *Journal of Abnormal and Social Psychology*, 60 (March), 151-174.
6. Dillon, William R., Narendra Mulani and Donald G. Frederick (1984), "Removing Perceptual Distortions in Product Space Analysis," *Journal of Marketing Research*, 21 (May), 184-193.
7. Henik, Avishai and Joseph Tzelgov (1985), "Control of Halo Error: A Multiple Regression Approach, *Journal of Applied Psychology*, 70 (August), 577-580.
8. Holbrook, Morris B. and Joel C. Huber (1979), "Separating Perceptual Dimensions from Affective Overtones: An Application to Consumer Aesthetics," *Journal of Consumer Research*, 5 (March), 272-283.
9. Holbrook, Morris B. (1981), "Integrating Compositional and Decompositional Analyses to Represent the Intervening Role of Perceptions in Evaluative Judgments," *Journal of Marketing Research*, 18 (February), 13-28.
10. _____ (1983), "Using a Structural Model of Halo Effect to Assess Perceptual Distortion Due to Affective Overtones," *Journal of Consumer Research*, 10 (September), 247-252.
11. Johansson, Johny K., Douglas L. MacLachlan and Richard F. Yalch (1976), "Halo Effects in Multiattribute Attitude Models: Some Unresolved Issues," *Journal of Marketing Research*, 13 (November), 414-417.
12. King, Larry M., John E. Hunter and Frank L. Schmidt (1980), "Halo in a Multidimensional Forced-Choice Performance Evaluation Scale," *Journal of Applied Psychology*, 65 (October), 507-516.
13. Landy, Frank J., Robert J. Vance, Janet L. Barnes-Farrell and James W. Steele (1980), "Statistical Control of Halo Error in Performance Ratings," *Journal of Applied Psychology*, 65 (October), 501-506.
14. Lorge, Irving (1937), "Gen-Like: Halo or Reality," *Psychological Bulletin*, 34, 545-546. (Abstract)
15. McLenithan, D. Bruce (1981), "Judgmental Errors Can Slant the Evaluation Process," *Management World*, 10 (January 1), 32-33.
16. Myers, J.H. (1965), "Removing Halo from Job Evaluation Factor Structure," *Journal of Applied Psychology*, 49 (June) 217-221.
17. Murphy, K.R. (1982), "Difficulties in the Statistical Control of Halo," *Journal of Applied Pshycology*, 67 (April) 161-164.
18. Reibstein, David J., Christopher H. Lovelock and Ricardo De P. Dobson (1980), "The Direction of Causality Between Perceptions, Affect and Behavior: An Application to Travel Behavior," *Journal of Consumer Research*, 6 (March), 370-376.
19. Thorndike, E.L. (1920), "A Consistent Error in Psychological Ratings," *Journal of Applied Psychology*, 4 (March), 25-29.
20. Wells, William D. (1961), "The Influence of Yeasaying Response Style," *Journal of Advertising Research*, 1 (April), 1-12.
21. _____(1963), "How Chronic Overclaimers Distort Survey Findings," *Journal of Advertising Research*, 3 (April), 8-18.