

GOVERNMENT HEALTH WARNINGS AND THE "BOOMERANG" EFFECT¹

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Summary.—The experiment shows that the presence of a government health warning on cigarette advertisements can "boomerang," leading to an increased desire to smoke. 24 housewives saw a series of 25 cigarette advertisements; for 12 subjects the health warning was present and for 12 it was absent. Half the subjects in each group were smokers and half non-smokers. The presence of the warning increased the desire to smoke but the increase seems to be greater for smokers than for non-smokers. The presence of the warning decreases the perceived goodness of the advertisement but does not affect its perceived familiarity.

Common sense leads one to expect that the presence of a Government health warning should discourage people from buying a product. The presence of such a warning should reduce the desirability of a product as the warning provides negative information about the product and, when coupled with an advertisement, the Government health warning should reduce the effectiveness of the advertisement. There is evidence from the psychological literature, however, that the relationship between added information and attitude change is not as simple as common sense suggests. Some research has focused on the size of the discrepancy between the favorability of a person's attitude towards an object and the favorability of the new information. The results have been described by Whitaker (1965, 1968) as a theoretical curve. Where there is either very little or a very great difference between the favorability of the new material and

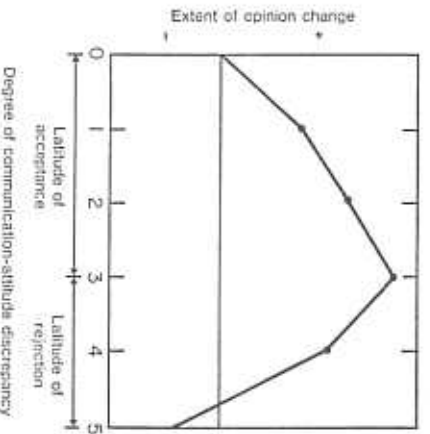


FIG. 1. Predicted relation between discrepancy of new attitude information and attitude change, from Whitaker (1968)

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the individual's own attitude, then very little attitude change takes place. Where the extent of difference falls between these two extremes, then the amount of attitude change is much greater. However, if the new information is extremely discrepant, then a so-called "boomerang" effect occurs and the attitude change occurs in the direction *opposite* to that of the new material. The predictions of attitude change are made on the basis of where the new information falls on the individual's latitude of acceptance or rejection, and so one should look not just to the absolute discrepancy between the attitude and new material but also the discrepancy in terms of the individual's own belief system.

A second area of research has focused on the effects of threats on attitude change (Heilman, 1974; Heilman & Garner, 1975). Heilman and Garner (1975) stress that "Despite the widely shared assumption that threats are an effective means of influencing another's behaviour, there is much evidence to the contrary. It has consistently been found that threats often boomerang, producing defiance rather than compliance" (p. 911).

What effect do Government health warnings have on the desirability of a product when they are added to advertisements promoting that product? We investigated this question using a Government health warning against smoking. In Britain, smoking advertisements appearing in magazines or on billboards must include a standard Government health warning. The words have changed: the health warning first appeared in 1971; in 1974 a tar band was added; on 1 October 1977 the warning was strengthened with the words "seriously damage." We used the advertisements with the 1974-77 warning:

High/Middle/Low tar group as defined in HM Government tables. Every packet carries a Government health warning.

The warning on the cigarette packet itself states:

Warning by HM Government. Smoking can damage your health. High/Low/Middle Tar.

METHOD

Forty-eight housewives (aged 25 to 45 yr.) saw a series of alternating cigarette and alcoholic drink advertisements (25 and 24, respectively, in a slide presentation). Subjects were randomly assigned to one of two conditions, one in which the warning was deleted from the cigarette advertisements. In the other, the Government health-warning condition, the warning was retained in its original form. On presentation of a slide, subjects filled in four scales in a response booklet (see Fig. 2), and the next slide was then presented. Each slide was presented for approximately 45 sec. The cigarette and alcoholic drink "desire" scales were used both for the cigarette and drink advertisements. Before the experiment began, subjects indicated how often they smoked (never, seldom, less than 5 per day, between 5 and 20 per day, more than 20 per day) and how

often they drank alcoholic drinks (never, seldom, regularly, every day). Subjects were allowed to smoke, as a pilot study indicated that prohibition was extremely uncomfortable for most smokers.

The responses of two groups of subjects were analyzed, smokers—those who smoked more than five cigarettes per day, and non-smokers—those who never smoked. Half of each group experienced the Government health-warning condition and half the non-Government health-warning condition. Subjects were randomly dropped from conditions to obtain equal numbers in each group ($n = 6$).

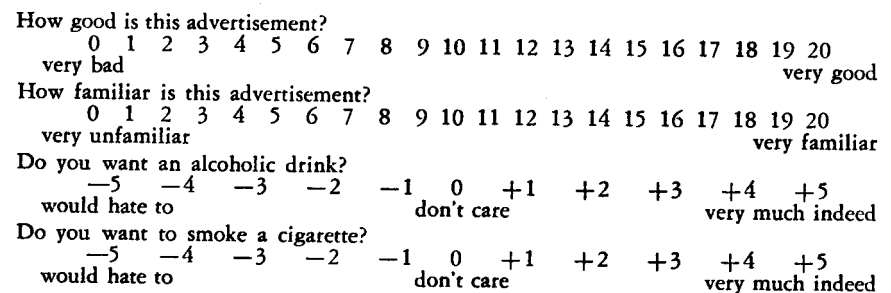


FIG. 2. Rating scales completed for each advertisement

RESULTS AND DISCUSSION

Separate analyses of variance (advertisements \times warning or no warning \times smokers or non-smokers) were carried out on the scales, "How good," "How familiar," and the "Desire to smoke," associated with the cigarette advertisements, and the scale, "Desire to smoke," associated with advertisements for drink. Results of the analyses of variance and cell means for groups of subjects across all advertisements are shown in Table 1.

The results indicate that the presence of a Government health warning in an advertisement increased the desire to smoke² though it decreased the perceived goodness of the advertisement. The presence of the Government health warning did not seem to affect the perceived familiarity of the advertisement, a finding consistent with post-experimental reports that subjects were unaware of the condition in which they were. The facilitating effect of the Government health warning was not constant over all advertisements (as indicated by the interaction between warning condition and advertisement); the interaction may be the consequence of a general warm-up effect associated with a ceiling on the desire-to-smoke scale (see Fig. 3).

²This conclusion is based on the "desire to smoke" scale for the cigarette advertisements only. As one subject did not complete the "desire to smoke" scale for the drink advertisements, the numbers in those cells were reduced to 5. Although a pattern similar to the cigarette advertisements emerges, the numbers are too small for meaningful interpretation.

TABLE 1
MEAN RATINGS FOR FOUR GROUPS OF 6 SUBJECTS AND SIGNIFICANT EFFECTS
FROM ANALYSIS OF VARIANCE

Question		Smokers				Effects*
		warning	no warning	warning	no warning	
'How good?', 0 to 20	M	6.29	10.37	7.15	9.71	Warning Advertisements Warning × Advertisements
	σ	2.8	3.5	4.9	4.0	
'How familiar?', 0 to 20	M	7.72	6.88	3.61	4.54	Smoking Smoking × Advertisements Warning × Advertisements
	σ	3.3	4.0	2.4	4.1	
'Desire to smoke' -5 to +5 cigarette advertisements	M	0.61	-0.81	-4.33	-4.89	Smoking Warning Warning × Advertisements
	σ	1.0	1.0	1.9	0.2	
'Desire to smoke' -5 to +5 drink advertisements	M	0.65	-0.75	-5.00	-4.70	Smoking Warning × Smoking
	σ	1.0	1.0	0	0.4	

* $p \leq .05$

One surprising finding is that non-smokers also form part of the main effect of warning/no warning; the interaction of smoking/warning is not significant. Because the interaction could be expected for theoretical reasons, we considered the possibility that the absence of an interaction was a Type 2 error. Separate breakdown analyses showed that the effect of warning was significant for smokers ($p < 0.04$) but not significant for non-smokers.

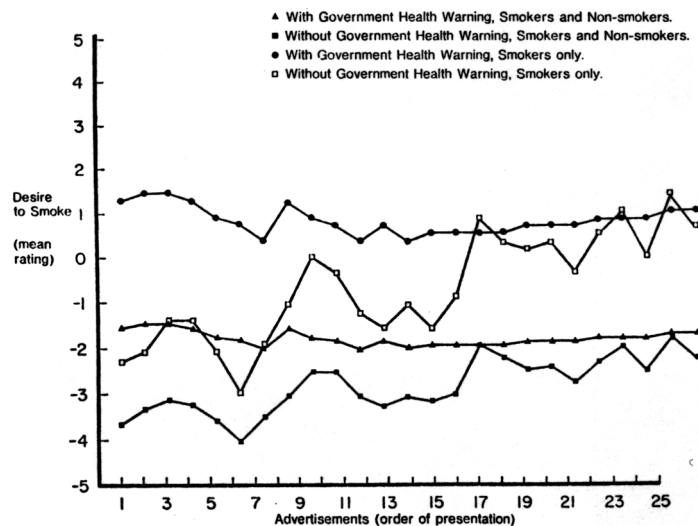


FIG. 3. Mean rated "Desire to smoke" for 25 different cigarette advertisements

The significant main effect of warning/no warning indicates that the presence of the Government warning boomerangs, i.e., it increases the desire to smoke a cigarette. Such a finding is consistent with previous research and theory. The Government health warning can be interpreted as a threat and threats are often associated with boomerang effects. Also, the Government health warning introduces an extremely dissonant relation into a smoker's (and presumably only a smoker's) belief system, namely, that his actions (which he has freely adopted) are likely to lead to his death. Such highly dissonant information must surely fall at the extreme end of the latitude of rejection.

Although the conclusions from this experiment must be very tentative in view of the small number of subjects involved and the samples used (there were fewer smokers than anticipated), nevertheless, we feel that we may have uncovered an area in which more research is needed, particularly in view of the possible implementation of new Government health warnings. It is certainly not possible to conclude from this study that Government health warnings are a 'bad thing' as they may well have a discouraging effect on non-smokers; however, the effects of Government health warnings on different populations of subjects clearly need to be established.

REFERENCES

- HEILMAN, M. E. Threats and promises: reputational consequence and transfer of credibility. *Journal of Experimental Social Psychology*, 1974, 10, 310-324.
- HEILMAN, M. E., & GARNER, K. A. Counteracting the boomerang: the effects of choice on compliance on threats and promises. *Journal of Personality and Social Psychology*, 1975, 31, 911-917.
- WHITTAKER, J. O. Opinion change as a function of communication and attitude discrepancy. *Psychological Reports*, 1963, 13, 763-772.
- WHITTAKER, J. O. Resolution of the communication discrepancy issue in attitude change. In C. Sherif & M. Sherif (Eds.), *Attitude, ego involvement and change*. New York: Wiley, 1968. Pp. 159-177.

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