

Variables Controlling the Elicitation and Suppression of the Subvocal Defence Mechanism

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Abstract: A persuasive, counter-attitudinal communication was individually delivered to 66 male respondents. While the base-line control group ($N = 12$) merely received the message, the 54 experimental subjects responded to concurrently distracting stimuli by performing visual, vocal or manual tasks. The results obtained suggest that those tasks which involve the participant in an active rather than a passive response are more likely to suppress the subvocal defensive process of counter-argumentation, as measured by a modification of Brock's (1967) procedure.

ONE of the ways in which an individual retains his attitudinal network intact in the face of constant stimuli, is by the process of "counter-argumentation"—the active, subvocal answering process by which one rejects counter-attitudinal arguments, thus defending one's attitudes and beliefs in a situation (such as a classroom or a lecture hall) where it is impossible to articulate disagreement vocally. It seems reasonable to assume (Festinger and Maccoby, 1964) that a person who is committed to a certain opinion or belief will not listen to an attacking communication without any counteraction on his part. Sokolov (1969), in differentiating between external vocalisation and the more sophisticated stage of internal speech or "latent articulation", defined the latter as the "reduced articulation of words accompanied by heightened tonus of the speech musculature". His research had indicated that the more novel or non-automatic the thought action, the more intense will subvocalisation become. Therefore the more counter-attitudinal a message, and the more it interferes with one's "ideologically monolithic environment" (McGuire and Papageorgis, 1961) the more intense will the subvocal response be.

If the listener's attention to the communication was sufficiently distracted so as to make it difficult for him to counter-argue, but not so distracting as to interfere with his comprehension of the speech, could this belief-defensive process

be interfered with; in other words, if the individual's attention was focused onto distracting stimuli which have little relevance to the persuasive arguments, but were presented simultaneously with them, would they block the process of counter-argumentation, while not interfering with comprehension levels? Osterhouse and Brock (1970) hypothesised that individuals who were not distracted while listening to counter-attitudinal arguments would counter-argue more than all distracted subjects, but that within distraction conditions, those who were required to respond to stimuli by performing a vocal-type task would counter-argue least of all. To the extent that counter-argumentation is part of a mechanism abstracted from verbal speech activity—a reduction from external to internal articulation—it was quite reasonable for them to predict a greater level of efficiency in a response task having a dominant vocal component. Unfortunately, they did not manipulate distraction in terms of medium of reception, and a preliminary study (MacCann Haslett, 1974) to the one discussed below, which used both a vocal and a non-vocal response to distraction, suggested (in spite of Sokolov's definition) that a vocal type distraction was no more likely to suppress counter-argumentation than any other non-vocal, but active, response task. The study reported here was designed to corroborate these results, and so the following hypotheses were tested.

(1) A persuasive message supporting a counter-attitudinal belief elicits counter-argumentation.

(2) Distracting stimuli (in this study groups of 1, 2 or 3 digit numbers) presented simultaneously with the message suppress counter-argumentation, and this counter-argumentation (while probably a subvocal activity) is more likely to be suppressed by active distraction tasks (i.e. Vocal—calling out numbers, and Manual—writing down numbers) than by a passive distraction task (i.e. Visual—watching numbers only).

(3) Comprehension levels will not be related to counter-argumentation, and all groups would be expected to comprehend the arguments in the communication equally well.

In this study an attempt was also made to investigate the effect of attention orientation towards either the communication or the response task. There is some evidence (e.g., *Zimbardo et al.*, 1970b) which suggests that as well as response task having an effect on counter-argumentation levels, these could also be affected by orientation—i.e., the subject, when placed in a forced-compliance situation in which he must simultaneously engage in two unrelated activities, will be more likely to counter-argue when set towards the communication than when set towards the distraction task. It could be argued that setting a subject's attention toward the distraction intensifies the distraction level, and setting him towards the message conversely weakens it. If this is so, then one would expect findings similar with those of Silverman and Regula (1968), Osterhouse and Brock (1970) and Keating and Brock (1974) all of whom found that where high and low intensity stimuli are used, the former has a much greater effect on the suppression of counter-argumentation. Therefore, the final hypothesis to be tested was:

(4) Distracted subjects who are set towards the response task (i.e., Vocal, Manual or Visual) are less likely to counter-argue than those who are set towards the message and those who are not set in either direction.

Methodology

A. *Subjects*: Sixty-six first year male under-graduate students, at the University of Birmingham, participated in a post-test only control group experiment (Campbell and Stanley, 1963). All subjects were volunteers.

B. *Design*: Subjects were randomly assigned to the cells of a Two-Way Cross Classification design (Brownlee, 1965) with six subjects to each of nine experimental cells and 12 to the base line control group. The manipulated factors were:

- (i) Distraction task (Vocal, Manual, Visual).
- (ii) Orientation (Message-Set, Distraction-Set, No-Set)—see Instructions below.

C. *Apparatus*: The subjects arrived individually at 30 minute intervals and were seated in a small cubicle containing a table and chair. On a shelf facing the subject, slightly above eye level, was a monitor screen to his right (on which the number stimuli were displayed at a rate of 15 per minute) and a loudspeaker to his left (through which the message was relayed). Both were connected to and controlled from the adjoining laboratory. Before testing commenced each subject was given an introduction sheet, an instruction sheet, a sealed booklet, a "NUMBERS" sheet for recording numbers (Manual group only) and a tape-recorder for the same purpose (Vocal group only).

- (i) *Introduction*: The subject was thanked in advance for his "co-operation and help in completing this section of the overall study", and assured that he would not have to identify himself in any way. He was asked not to discuss the study with any other participant, and was finally requested to read the instruction sheet before opening the booklet.
- (ii) *Instructions*: All subjects were informed that they would hear a seven-minute speech through the speaker; experimental subjects were also told that simultaneously with the message, they would see groups of numbers displayed on the monitor screen. The instructions then varied according to the requirements of each experimental group; e.g., with regard to response task, vocal subjects were told to call out numbers into the recorder, and so on; in the case of orientation, subjects in the Message-Set groups were instructed to pay special attention to the speech, those in Distraction-Set cells were similarly instructed with regard to the numbers, and subjects in the No-Set groups were left uninstructed.
- (iii) *Booklet*: See "Dependent Measures" below.

D. *Message*: Each subject was exposed at the beginning of the test session to a persuasive counter-attitudinal communication. This message presented, in the form of an address to a meeting of the fictitious London University Graduates Association, four main arguments strongly advocating the need to cut back on university expansion and to build up the more socially-relevant polytechnics instead. Preliminary investigation, using a small independent group of male undergraduate students ($N = 5$) had indicated that the arguments used were counter-attitudinal and likely to elicit counter-argumentation from this particular population.

E. *Dependent Measures*:

- (i) *Comprehension Measurement*: In the first section of the booklet, comprehension levels were measured by asking each subject three yes/no questions dealing with the arguments used in the communication just delivered (Ausubel, 1969).
- (ii) *Counter-argumentation Measurement*: In section two, which had a time limit of five minutes, subjects were asked to list retrospectively their thoughts and ideas formed while listening to the communication; those which constituted statements directed specifically against one of the four main arguments proposed by the speaker were classified as counter-arguments, using the procedure developed by Brock (1967) and further modified by Osterhouse and Brock (1970). Three types of statements were classified as counter-arguments: (1) declarative statements which specifically mentioned possible undesirable consequences of the arguments used in the communication; (2) statements which suggested alternative means of achieving the ends advocated, and (3) statements which questioned the validity of the arguments presented. Not included as counter-arguments were statements of agreement with the communication, affective reactions, interrogative statements and simple, unqualified statements of disagreement. Statements classified as counter-arguments were given a score of 1, and all other statements a zero score.
- (iii) *Multiple Choice Questions*: In the final section of the booklet, three multiple choice questions were asked, designed to test certain experimental manipulations and their effects (questions 2 and 3 applied to distracted subjects only).

I. *Reaction*: The subject was asked for his reaction when requested to list his ideas concerning the arguments presented to him, and was given five alternative answers from which to choose one. This question was designed to assess the extent to which the recipient felt expected to argue against the message (i.e., felt "compelled" to counter-argue).

2. *Distraction*: This question, asked only of distracted subjects, was intended to determine if the task performed; (a) helped listening to the speech; (b) made listening difficult; (c) did not make any difference.

3. *Orientation*: The 54 experimental subjects were asked whether they found themselves paying most attention to (a) the recorded message; (b) the numbers; (c) evenly to both; this question would test the effectiveness of the orientation manipulation.

Results

(i) *Comprehension Measurement*: The mean comprehension scores for each experimental cell and for the base line control group are shown in Table 1. As predicted, χ^2 analysis of the distribution of total scores indicated that there were no significant differences between conditions with regard to the subjects' abilities to comprehend the arguments presented in the counter-attitudinal communication.

TABLE 1: Mean scores for (i) comprehension of arguments, (ii) production of statements and (iii) counter-argumentation by (a) response task (Vocal, Manual, Visual) and (b) orientation (Message-Set, Distraction-Set, No-Set)

	Comprehension			Statements			Counter-argumentation		
	Vocal	Manual	Visual	Vocal	Manual	Visual	Vocal	Manual	Visual
Message-Set	2.33	2.33	2.17	6.5	6.67	6.17	0.83	0.5	1.33
Distraction-Set	2.17	2.5	2.17	5.5	4.67	5.83	0.33	0.0	1.5
No-Set	2.5	2.83	2.67	6.67	5.33	5.67	0.17	0.0	0.83
Base Line	2.58			5.1			0.67		

(ii) *Counter-argumentation*: Table 1 also shows, for each condition, the mean number of statements produced, and the mean number of counter-arguments derived from these statements. With regard to the distribution of statements, analysis revealed, again as expected, no differences in the production of "ideas". All groups had similar mean outputs.

Of these statements, approximately 10.5 per cent of the total number ($N = 379$) were classified as counter-arguments and here differences in distribution were found. On the basis of the total number of statements produced by each experimental cell, analysis indicated that the passive (i.e., Visual) group, as predicted, counter-argued significantly more than the active groups ($\chi^2_2 = 17.37$, significant at 0.1 per cent). Within the orientation manipulation, however, although it was predicted that the Distraction-Set subjects would counter-argue significantly less than either Message-Set or No-Set, analysis indicated no differences in distribution ($\chi^2_2 = 3.68$, non-significant); although the mean Distraction-Set score (0.61) is lower than that for the Message-Set groups (0.89), the mean No-Set score (0.33) is lower than both (see "Discussion" below).

(iii) *Multiple Choice Questions*

1. *Reaction*: Out of a total of 66 subjects only a small number ($N = 4$) felt that they were "expected" to counter-argue against the communication received. The majority of subjects regarded the measurement as either (a) a test of speed or (b) a personality-type test.

2. *Distraction*: From the results of this question it would appear that the particular task associated with each manipulation made listening to the speech difficult; only three subjects found that it facilitated listening and four thought it made little difference. It can be concluded that each task was in fact "a distraction" and that this manipulation appeared to be successful.

3. *Orientation*: If the setting manipulation was successful, it would be expected that those subjects instructed to pay special attention to the message would in fact assess themselves as having done so, and the same for distraction-set subjects. In fact the differences between the oriented groups was not significant although there was a trend in the expected direction with more than three times as many Message-Set subjects than Distraction-Set participants attending to the message. Nonetheless, the manipulation does not appear to have been successful (see "Discussion" below). Within the response task manipulation however, the Visual group paid significantly more attention to the message ($\chi^2 = 10.51$, significant at 5 per cent) than either Vocal or Manual groups, an interesting finding in view of the fact that, subjectively, each task appeared to be equally "distracting".

(iv) *Task Performance*

The actively distracted subjects recorded the number stimuli either orally (Vocal) or in written form (Manual). A total of 107 digit combinations was delivered, and records of task performance for all subjects varied between 103 and 107 responses. No difference was found between groups, with Vocal having a mean of 105.9 responses, and Manual a mean of 105.7.

Discussion

Before discussing the extent to which the various hypotheses were supported, it is necessary to comment on certain aspects of the procedure used in this study.

It will be noted that a post-test only control-group design was used in spite of the fact that several of the studies referred to have preferred to use a pre-test/post-test design. Over the last few years, however, many workers have been influenced by this Campbell and Stanley (1963) procedure in spite of the fact that "it is difficult to give up knowing for sure that the experimental and control groups are 'equal' before the differential experimental treatment". It is, however, the least complex design which can minimise most internal sources of invalidity (such as subject changes, testing effects and subject selection biases which prevent the experimenter from being able to draw any inferences) and also several external

sources (such as reactive effects of measurement) which make it difficult for the experimenter to generalise beyond his results to events and samples not included in his study.

Probably one of the most difficult tasks in this type of experiment is to formulate a sufficiently counter-attitudinal message, and this depends heavily on the communicator's biased scanning of the relevant arguments and on his ability to choose those which will be sufficiently discrepant while at the same time remain plausible and credible. In spite of Murphy, Murphy and Newcomb's (1937) observation that the most prominent effects are on individuals whose initial reaction scores were "neutral" or "undecided", the findings reported here and in related studies would certainly suggest that prior commitments to an opposing position is essential, if counter-argumentation is to be elicited or suppressed.

Finally, with regard to the distracting stimuli used, the first and most basic problem is to define, for working purposes, a satisfactory external distraction. The importance of an external over an internal stimulus was demonstrated by Valins (1966) whose study of male attitudes toward slides of semi-nude women indicated that externally manipulated "distractions" overcame any internal cues upon which decisions might otherwise have been based. Thus, although some evidence exists (e.g., Cameron *et al.*, 1968) which indicates that self-generated internal distractions are being constantly produced, they are not as intense as those produced and controlled by an external agent.

Having decided on a stimulus (which should be readily reproducible, like the numbered lights used by Osterhouse and Brock, or the groups of digits used here) the next and more complex problem involves the pairing of the response task (to the distraction) with the communication in such a way that performance and reception can be simultaneously conducted. Peterson (1969) has pointed out that, on the whole, the human organism can perform two or more activities concurrently, with certain limitations (eg., where highly complex vocalisation is required) which do not apply to the circumstances described in this study; here it was demonstrated that it was possible to receive a visual distraction and respond by performing vocal or manual tasks while still comprehending the major tenets of a persuasive argument.

With regard to the hypotheses formulated in the introduction to this study, three of them were supported to a greater or lesser extent, and the failure of the fourth can almost certainly be accounted for by the inability of the orientation manipulation to simulate the effects of stimuli intensity on counter-argumentation.

The first hypothesis predicted that a persuasive counter-attitudinal communication will elicit subvocal counter-argumentation from the recipient, and although preliminary testing indicated that the communication used was persuasive, counter-attitudinal and highly ego-involving to the participants involved, nevertheless the resulting 10.5 per cent counter-argumentation figure was not as high as expected. It is noticeable that other researchers who have used a modified form of Brock's (1967) measurement have not given any indication as to what lower percentage limit of counter-arguments could be taken as acceptable.

Without some sort of guiding criteria it is difficult to assess the significance of the result obtained except to say that it does compare rather unfavourably with the 25 per cent figure obtained by a compulsory-vasectomisation communication (MacCann Haslett, 1975).

With regard to the second prediction, the results indicate that those subjects who were actively distracted, whether by vocal or manual type distractions, counter-argued significantly less than the passively distracted subjects. Recently Keating and Brock (1974) produced evidence supporting this particular hypothesis. Their data suggested that counter-argumentation (while still probably a subvocal activity, in that inhibition of counter-argumentation was most enhanced by vocal tasks) is more likely to be suppressed by those distractions which can be classified as "active" (including vocal responses) and less likely to be suppressed by "passive" tasks.

While differences in counter-argumentation were predicted and obtained, the results of the comprehension measurement indicated, as expected, that this was a non-mediating factor. The major reason for including this measurement was to counteract once again the claims of certain "learning" social psychologists who believe that distracting stimuli presented simultaneously with a persuasive communication should interfere with comprehension and thus affect the process of learning. They deny the existence of the counter-argumentation phenomenon, and would argue that those subjects who appeared to counter-argue, rather had their comprehension ability interfered with, learned less of the communication, and therefore agreed less by producing a lower number of communication-agreeing statements.

This opposition was spear-headed by Haaland and Venkatesan (1968) who supported their claim by quoting the Gardner (1966) study; this work purported so find that distraction interfered with the reception and understanding of the persuasive communication, as measured by the poor recall of the communication, a finding which influenced and was upheld by other workers who challenged the counter-argumentation explanation. Among these can be included Vohs and Garrett (1968), Rosenblatt (1966) and Silverman and Regula (1968). All of these researchers, however, have one fault in common—they did not measure *comprehension* but rather a memorisation of factual details of the communication, and found that the more actively or intensely distracted subjects remembered less of the communication and so, they presumed, learned less. But learning, does not involve memorising single word-units which physically make-up a structured persuasive communication, in spite of Zimbardo and Ebbensen's (1970a) comment on "bits of information"; rather it involves an understanding and acceptance of the conceptual words used, which implies a "meaningful" response to the attitude-object in question (Ausubel, 1969). This point is repeatedly made by Hovland, Janis and Kelley (1953) in their analysis of the dynamics of the learning process in a persuasive communication context, but is repeatedly forgotten about, even by those who quote the learning theory and who should perhaps have been more meticulous in their interpretation.

With regard to the fourth, and final, hypothesis, the orientation manipulation does not appear to have been very successful either of itself (as the results for the final multiple-choice question indicate), or as a method of introducing varying degrees of intensity to the distraction tasks. Zimbardo *et al.* (1970b) did stress, in their final study, that the essential conditions for demonstrating orientation relationships were "sensitive to operational details", so perhaps, without exactly replicating their studies, these relationships are impossible to produce. This negative finding, however, in no way minimises the, by now, quite strong body of empirical data which is revealing the importance of stimulus intensity over activity-passivity as the major counter-argumentation controlling variable (Kiesler and Mathog, 1968; Osterhouse and Brock, 1970; Keating and Brock, 1974; MacCann Haslett, 1974).

Conclusions

The effects of a secondary distraction on a primary task, whether this task be cognitive (as in this study) or manipulative (e.g., Gibson and Curran, 1974), are increasingly becoming the focus for investigation by those researchers concerned with (a) the classification and prediction of personality types, (b) the educational potential of visual-auditory teaching aids and (c) the processes by which individuals succumb to counter-attitudinal information in circumstances where they cannot vocally articulate.

In the latter case, evidence has been produced both here and in other studies, which suggests that a subvocal means of defence is the process used. Although this hypothesis was first proposed by Festinger and Maccoby (1964) they did not make any attempt to measure this admittedly complex concurrent response, in spite of the fact that an attempt had been made previously by Janis and Terwilliger (1962) and work had been done on other concurrent and anticipatory responses in general (e.g., Hovland, Lumsdaine and Sheffield, 1949). The first serious attempt (Brock, 1967) has been used and modified several times since then, but still needs to be employed in other manipulated situations before one can assume unequivocally that counter-argumentation is the mediator actually being measured. So far there is no evidence which suggests that it is not, and, in the meantime, the effects of activity-passivity, varied intensity of stimuli, and external-internal distraction sources are apparently indicating a profoundly significant effect on this measurement—whatever it may be finally declared to measure!

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