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THE EFFECT OF NEED FOR APPROVAL AND INDUCED APPROVAL-
SEEKING ON NON-VERBAL FORMS OF COMMUNICATION

by

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ABSTRACT

THE EFFECT OF NEED FOR APPROVAL AND INDUCED APPROVAL-SEEKING ON NON-VERBAL FORMS OF COMMUNICATION

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The purpose of the study was to investigate the effects of need for approval and of induced approval-seeking on non-verbal behavior. Forty-eight male first-year university students were used as subjects. These subjects were trichotomized on the basis of need for approval scores and allocated randomly in equal numbers to an Approval-seeking and a Control group. Approval-seeking was induced, within a standardized interview session, by leading the subjects to believe that their status in a subsequent task would depend on how far they won the approval of the interviewer. Feedback from the interviewer was controlled as much as possible by reducing it to a minimum.

Approval-seeking subjects smiled less frequently than "neutral" subjects. This difference was greater in the second half of the interview than in the first. On the other hand, Approval-seeking subjects nodded more frequently than "neutral" subjects. The other categories of gesture investigated were not significantly influenced by the experimental condition of the subjects, and all except smiles showed a high stability of frequency over a ten-minute period. The personality variable of n-Approval did not produce any main effects. Relating the results to those of other relevant studies, it was apparent that the frequency of these gestures was considerably influenced by the feedback, or lack of feedback, from the interviewer.

Various interpretations of the data were discussed and suggestions for further research were presented.

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INTRODUCTION

The purpose of the present study was to investigate such non-verbal forms of communication as smiles and gesticulations within approval-seeking conditions and in relation to need for approval.

Several aspects of approval-seeking have already been extensively studied, including the relationship of approval-seeking to verbal communication, (e.g., Crowne & Marlowe, 1964; Jones 1964). Jones has found differences in the verbal tactics of subjects motivated to seek approval and those not so motivated. In these studies the consideration of the accompanying non-verbal behavior has been little more than incidental. It has been gradually realized, however, that non-verbal cues have an extremely important function in these types of inter-personal relationships. It is Rosenfeld's (1966a, p. 65) contention that, "much, and perhaps most, of the expression of emotional and motivational states occurs on non-verbal levels". He has therefore been concerned (1966a, 1966b) with gestures as clues to the psychological condition of seeking approval.

It may be possible to make predictions about the relationship between gestural activity and approval-seeking behavior on the basis of the "exchange" theories of Homans (1958) and Thibaut and Kelley (1959). As expressed by Homans (1958, p. 597) this theory holds that "interaction between persons is an exchange of goods, material and non-material". In a dyad situation we may therefore regard gestures as an exchange of goods. It might be anticipated that the more costly forms of non-verbal response would tend to be affected when there was an imbalance in this exchange of goods, as when, in the present study, positive feedback was not forthcoming. Thibaut and Kelley (1959, p. 89) suggest that, "For the person holding very

little power... the cost components of... outcomes will be heavily weighted." The term "cost" is understood by these authors (p. 10) to mean the "negative components" resulting from an interaction. If an approval-seeking subject within a dyad situation may be regarded as holding comparatively little power, then whatever he "gives" as a response to the experimental stimuli would appear to him as more "costly" than would the same "giving" to the more powerful "neutral" subject. Thus, the same non-verbal responses would have different cost-values for subjects differing in their approval-seeking motive. The different cost-values of gestural activity for approval-seeking and non-approval-seeking subjects might therefore result in differences in their gestural activity.

In seeking to provide empirical data applicable to these problems Rosenfeld studied approval-seeking in relation to non-verbal behavior. Three main methods were used for establishing his experimental conditions. The first method involved instructing the subjects in the experimental situation to imagine they wished, or did not wish, to win approval from a peer, who was actually a confederate. A second method differed from the first in that, while one subject in the dyad was instructed to seek or avoid approval, the other was a genuine and naive subject. Non-verbal and verbal responses of the experimental member of the dyad were analyzed, in addition to reciprocations of responses. Using a third method, Rosenfeld had each subject carry on a conversation with another subject while both understood that they were waiting for the experiment to begin, and then tested these subjects for n-Approval. In addition to manipulating Approval-seeking, Rosenfeld has also investigated differences between subjects high and low in n-Approval as measured by the Crowne and Marlowe n-Approval scale.

The main findings in Rosenfeld's investigations were that overall gestural activity was significantly higher among approval-seeking subjects, both when approval-seeking was experimentally induced, and when it was related to a predisposition to seek approval. This difference in gestural activity was mainly attributable to smiles and gesticulations. Although Rosenfeld measured six categories of response only four - smiles, nods, gesticulations, and self-manipulations - occurred in sufficient numbers to be subjected to statistical analysis.

In Rosenfeld's first two methods, as outlined above, the subjects in the experimental groups were simply asked to seek approval, which is, in effect, asking the subjects to act the appropriate role. In an attempt to correct this inadequacy, approval-seeking in the present study was manipulated so that the subjects were emotionally involved in seeking approval and their motivation was intrinsic to the nature of the study.

A further problem in Rosenfeld's research is related to his finding that non-verbal feedback from the confederate or naive subject was correlated with particular approval-related responses. Furthermore, Exline (1963) found that subjects high in n-Affiliation made use of glances in a manner different from those low in n-Affiliation. It therefore seems likely that, when such feedback from the interviewer is not controlled, it may influence the interviewee's non-verbal communication. Because of such contamination it is impossible to determine to what extent Rosenfeld's findings were due to his approval-seeking conditions and to what extent they were due to the effects of feedback. An attempt was therefore made, in this investigation, to control for the response of the interviewer by reducing them to a minimum.

It is also likely that, in Rosenfeld's studies, the different

experimental conditions may have had an influence on the nature of the conversations. This could have been unintentional on the part of the subjects, but it is possible that approval-seeking subjects deliberately guided the conversation to topics that would facilitate presenting themselves attractively. Differences in responses may therefore have been due to differences in the nature of the conversations. To overcome this difficulty the verbal stimuli in this study were standardized to a greater degree by asking the subjects to respond to prepared questions, rather than to carry on a spontaneous conversation.

Since the absence of response from the interviewer might have a frustrating effect on the interviewee, or might drive him to greater efforts, it was anticipated that a change in the subjects' responses might take place over time. Therefore, in the present study the interview session was divided, for recording purposes, into ten equal intervals.

In summary, this study sought to investigate various non-verbal forms of communication within approval-seeking conditions and in relation to need for approval, and also to examine the effect of these variables over the duration of the experimental session. An attempt was made to replicate in part Rosenfeld's work and to overcome some of the difficulties which arise in his procedures. Because of the differences in experimental conditions, particularly in feedback, some differences in results were anticipated.

METHOD

Subjects

The subjects were 48 male students enrolled in introductory psychology. They were divided into three groups - low, with a score between 0 and 8 inclusive; medium, with a score between 9 and 12 inclusive; and high with a score between 13 and 20 inclusive - on the basis of their scores on the Social Recognition subscale of the Personality Research Form (Jackson, 1967), a scale designed to assess the predisposition to seek approval from others. This subscale, along with 88 filler items, was administered to a large sample independently of the present study.

Procedure¹

On arrival the subject was seated at a desk opposite the experimenter. Displayed on the desk was a supply of magazines, colored paper, scissors, pencils, rulers and glue, as well as five large place cards which read, "Supervisor", "Production Manager", "Copy Writer", "Copy Writer", and "Worker", in that order. Subjects in the three personality groups were randomly assigned to the experimental and control conditions. After the instructions² designed to induce experimental or control conditions had been given to the subject, he was taken to another room by the experimenter and introduced to the interviewer.

¹The procedure used in this study to induce the experimental condition of approval-seeking was adapted from Jones (1964, p. 95)

²All verbatim instructions and experimental materials are presented in Appendix B.

Experimental condition. In order to induce subjects to seek approval they were told that they would participate with others in a short task, the purpose of which was to measure productivity in groups with different organizational structures. They were led to believe that their rank in command would be high or low according to whether the "Supervisor", who would interview them later, judged them attractive or otherwise. For example, if judged most attractive he would be made Production Manager, if judged least attractive he would be the Worker. It was also explained that subjects in some of the other groups used in the project would be allocated on a different basis to the various levels of command. In addition, subjects were told that the "Supervisor's" judgment would be based on the subjects' answers to typewritten questions. The "Supervisor" would not respond to the subjects because such responses could influence their answers. With a view to increasing the subjects' motivation it was indicated that the task would follow immediately after the interview and that the subjects participating would probably be known to each other.

Control condition. The instructions for subjects in the Control condition differed from the above only in two respects. The Control subjects were told that they would be allocated at random to the different levels of command, and that the subject's interests, rather than his attractiveness, were to be assessed in the interview session since the experimenter wished to study how productivity would be influenced by the degree of similarity of the interests of the subjects in each of the task groups.

Interview session. The subjects were interviewed in a room equipped with a one-way mirror. The interviewer was seated behind a desk at one end of the room. Towards the other end of the room, near the door, was a

table on which were placed question cards. An armless chair which the subject sat on was sufficiently far from the desk to prevent the subjects leaning their elbows on it. The necessity of staying within reach of the cards on the table prevented subjects moving the chair towards the interviewer. This was of some importance since a study by Rosenfeld (1965) indicated that such increased proximity would be likely to influence gestural activity. The one-way mirror was on the subjects' left, with the subjects facing a point mid-way between the mirror and the interviewer. The interview was ten minutes long. At the end of the ten minutes subjects were allowed to complete their answer and were then told that this was sufficient and that the interview was over.

The interviewer then explained to the subjects that they could not be used in the main part of the experiment because their answers indicated a considerably above-average interest in the kind of task being used in the experiment and there was thus a possibility that their high level of interest might influence production. It was further explained that a few subjects, who had already "passed" the interview, were available at short notice so that the experimental task could proceed. This deception was intended to eliminate the possibility of the remaining subjects being given the information that there was no experimental task after the interview. The interviewer also appealed to the subjects to maintain secrecy.

As previously mentioned, questions were used, rather than an ordinary interview, in order to standardize, as far as possible, the verbal stimuli to which the subject responded. The questionnaire consisted of 22 questions, each typed on a separate card. Each question was designed to be provocative of discussion, rather than of a "Yes or "No" response; to be of some interest to first-year university students; to avoid topics

likely to arouse extreme emotions; to provide some scope for winning approval; and not to be too difficult for a subject to say at least a few words in response.

The interviewer was a male second-year student. In addition to being instructed not to reciprocate the subjects' responses, he was told to make brief notes of the subjects' remarks at varying pre-arranged intervals determined by a timing device, and then to glance at the subjects. A description of the pre-arranged intervals may be found in Appendix B, Table III. Thus, while the subjects were made aware of the interviewer's attention, the interviewer's note-making and glances were not related to the subjects' responses, so that those responses would not be systematically reinforced. When there was a prolonged silence, or when the subject was giving an undesirably long answer, the interviewer suggested that he go on to the next question.

Recording subjects' responses. Two scorers operated from behind the one-way mirror. In order that the interview could be timed in one-minute intervals, one of the scorers, using a stop watch, signaled these intervals to the other. Each wore headphones to prevent him hearing the subjects' verbalization. The scorers were given operational definitions of the dependent variables and received training prior to the experiment. Three scorers were available, two of whom were used at each interview, with all three participating approximately the same number of times.

Dependent variables

The dependent variables used in this study were adapted from those used by Rosenfeld (1966a), and were as follows:

1. Smiles.

2. Nods - movements of the head on a vertical plane.
3. Head Shakes - horizontal shakes of the head.
4. Gesticulations - any noticeable movement of arm, hand, or finger, while not in contact with another part of the body.
5. Self-manipulations - movements of one part of the body in contact with another.
6. Postural Changes - gross movements of body trunk, or change in position of the hips.

RESULTS

An examination of the number of questions answered by each subject showed that this factor was not systematically influenced by either the experimental conditions or the level of need for approval. The data were therefore analyzed without regard for the number of questions answered. The score for each dependent variable, for each subject, was the mean of the two recorders' scores.³ To study effects over time the ten-minute interview was divided into two equal periods.

Smiles

The mean number of smiles, for periods one and two, within the Approval-seeking and Control conditions for the three levels of n-Approval, is given in Table 1. The corresponding analysis of variance is presented in Appendix A, Table 1⁴. As indicated, subjects induced to seek approval smiled less than those who were neutral in this respect ($F = 4.2$, $df = 1$, 42 , $p = .05$). The Approval-seeking x Periods interaction was also significant ($F = 9.9$, $df = 1$, 42 , $p = .01$). This interaction is graphically illustrated in Figure 1. Control subjects increased their number of smiles from Period 1 to Period 2, whereas the Experimental subjects decreased their number of smiles. There were no other significant differences.

³Inter-observer reliability coefficients (Pearson product-moment correlations) based on the total sample were as follows: Smiles, $r = .83$; Nods, $r = .82$; Head Shakes, $r = .75$; Gesticulations, $r = .90$; Self-manipulations, $r = .87$; Posture Changes, $r = .87$.

⁴All analysis of variance tables are presented in Appendix A.

TABLE 1

MEAN NUMBER OF SMILES WITHIN APPROVAL-SEEKING AND CONTROL
CONDITIONS FOR THE THREE LEVELS OF n-APPROVAL

	<u>Conditions</u>				<u>Total</u>
	<u>Approval-seeking</u>		<u>Control</u>		
	<u>Period</u>		<u>Period</u>		
	<u>First</u>	<u>Second</u>	<u>First</u>	<u>Second</u>	
<u>n-Approval</u>					
High	.9	1.1	1.9	3.0	1.7
Medium	1.7	.6	1.8	2.2	1.6
Low	<u>2.4</u>	<u>1.6</u>	<u>2.3</u>	<u>3.2</u>	2.4
Total	1.7	1.1	2.0	2.8	

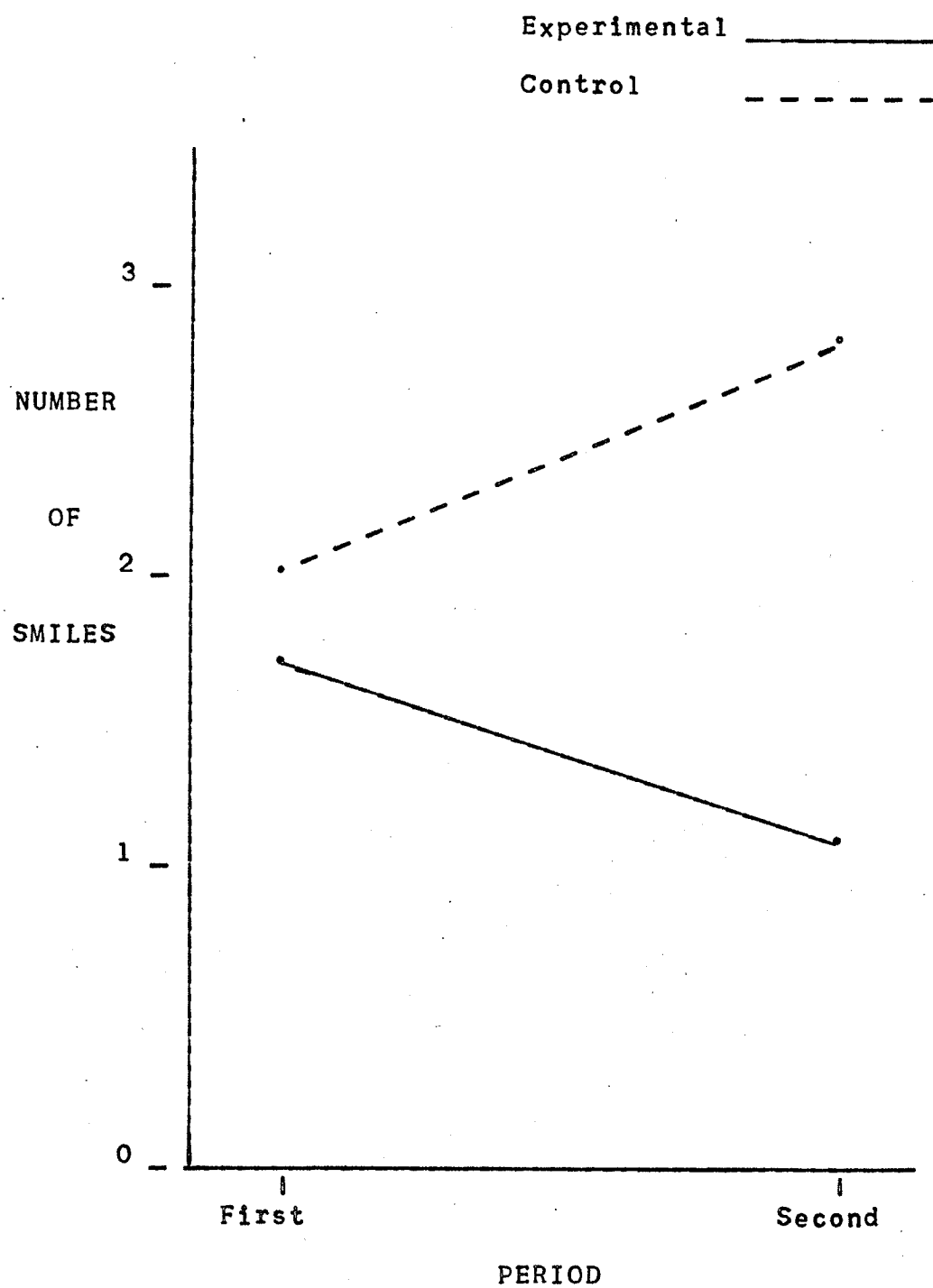


Figure 1. Mean number of smiles for Experimental and Control groups in First and Second Periods.

Nods

The mean number of nods within Approval-seeking and Control conditions for the three levels of n-Approval is presented in Table 2.⁵ As indicated, the subjects seeking approval used significantly more nods than did the "neutral" subjects ($F = 5.1$, $df = 1, 42$, $p < .05$).

Head Shakes, Gesticulations, Self-manipulations, Posture Changes

The mean number of head shakes, gesticulations, self-manipulations, and posture changes within Approval-seeking conditions for the three levels of n-Approval are presented in Tables 3, 4, 5, and 6 respectively. There were no significant differences within any of these dependent variables.

Intercorrelations of dependent variables

Pearson product-moment correlations were computed between all the dependent variables and are shown in Table 7. Nods and gesticulations were positively related ($r = .34$, $df = 47$, $p < .02$), as were the dependent variables self-manipulations and posture changes ($r = .35$, $df = 47$, $p < .02$). These correlations were relatively low and no other correlations were significant. Thus, it would appear that these dependent variables are relatively independent from one another.

⁵For each of the remaining dependent variables there were no significant main effects or interactions for Periods. Thus, in all subsequent analyses, these data were collapsed over the first and second Period.

TABLE 2

MEAN NUMBER OF NODS WITHIN APPROVAL-SEEKING AND CONTROL
CONDITIONS FOR THE THREE LEVELS OF n-APPROVAL

	<u>Condition</u>		
	<u>Approval-seeking</u>	<u>Control</u>	<u>Total</u>
n-Approval			
High	7.06	2.00	4.53
Medium	7.19	1.38	4.28
Low	<u>7.75</u>	<u>7.69</u>	<u>7.72</u>
Total	7.33	3.69	

TABLE 3

MEAN NUMBER OF HEAD SHAKES WITHIN APPROVAL-SEEKING AND
CONTROL CONDITIONS FOR THE THREE LEVELS
OF n-APPROVAL

	<u>Conditions</u>		
	<u>Approval-seeking</u>	<u>Control</u>	<u>Total</u>
<u>n-Approval</u>			
High	9.75	6.94	8.34
Medium	7.63	4.69	6.16
Low	<u>9.12</u>	<u>13.56</u>	11.34
Total	8.83	8.52	

TABLE 4

MEAN NUMBER OF GESTICULATIONS WITHIN APPROVAL-SEEKING AND
CONTROL CONDITIONS FOR THE THREE LEVELS OF n-APPROVAL

	<u>Conditions</u>		
	<u>Approval-seeking</u>	<u>Control</u>	<u>Total</u>
<u>n-Approval</u>			
High	12.00	11.38	11.69
Medium	9.75	12.75	11.25
Low	<u>8.12</u>	<u>11.00</u>	9.56
Total	9.96	11.71	

TABLE 5

MEAN NUMBER OF SELF-MANIPULATIONS WITHIN APPROVAL-
SEEKING AND CONTROL CONDITIONS FOR THE THREE
LEVELS OF n-APPROVAL

	<u>Conditions</u>		
	<u>Approval-seeking</u>	<u>Control</u>	<u>Total</u>
<u>n-Approval</u>			
High	23.44	36.81	30.12
Medium	35.00	36.44	35.72
Low	<u>26.88</u>	<u>31.25</u>	29.06
Total	28.44	34.83	

TABLE 6

MEAN NUMBER OF POSTURE CHANGES WITHIN APPROVAL-SEEKING
AND CONTROL CONDITIONS FOR THE THREE
LEVELS OF n-APPROVAL

	<u>Conditions</u>		
	<u>Approval-seeking</u>	<u>Control</u>	<u>Total</u>
<u>n-Approval</u>			
High	14.19	9.69	11.94
Medium	8.12	11.25	9.68
Low	<u>12.19</u>	<u>8.69</u>	10.44
Total	11.50	9.88	

TABLE 7

PEARSON PRODUCT-MOMENT CORRELATIONS BETWEEN THE
DEPENDENT VARIABLES (N = 48)

	(1)	(2)	(3)	(4)	(5)	(6)
1) Smiles		-.23	.05	-.09	.15	-.05
2) Nods			.17	.34*	-.06	.25
3) Head Shakes				.04	-.23	.13
4) Gesticulations					.07	.20
5) Self-manipulations						.35*
6) Posture Changes						

* $p < .02$

DISCUSSION

It would appear that approval-seeking subjects smile less frequently than "neutral" subjects. In addition, "neutral" subjects tended to increase the number of smiles over time, and approval-seeking subjects to decrease this number. On the other hand, approval-seeking subjects nodded more than "neutral" subjects. Considerably fewer smiles were recorded than any other response, and considerably more self-manipulations than any other gesture.

It may seem surprising that a subject seeking approval smiles less than a subject who was not concerned with winning approval, since smiling would seem to be one of the most obvious ways of obtaining approval. A possible interpretation is that the stress of seeking approval had an inhibiting effect on the subjects' self-expression, and that this effect was manifested mainly in the reduction of smiles. It might also be suggested that the induced Approval-seeking condition increased the anxiety of the subjects in that condition, and that the differences obtained were the result of anxiety and not of the Approval-seeking conditions. Such an explanation was not supported by the casual data obtained from a post-experiment questionnaire. This questionnaire consisted of a six-point scale ranging from "extremely uneasy" to "completely calm". Approval-seeking subjects did not indicate any greater anxiety within the experimental session than did "neutral" subjects. This suggests that results obtained in this study were not due to effects of anxiety. A further possible interpretation is that the subjects in the approval-seeking condition encountered a conflict between, on the one hand, their desire to obtain approval and, on the other, the psychological necessity of convincing themselves, and the strategic necessity of convincing the target person, that they had no such

approval-seeking motives. Such an interpretation is supported by Jones (1964) who found that subjects wishing to present themselves attractively and to win respect faced the dilemma of achieving these results by conforming, "without appearing to conform and without having to acknowledge their conformity to themselves." (pp. 98-102). In trying to conceal that he was seeking approval the subject was apparently over-cautious and tended to defeat his purpose by reducing his smiles to an extent greater than was appropriate for concealing his approval-seeking motives. Further weight is given to this interpretation by the findings of Ekman (1967) whose data support the hypothesis that "purposeful deception head cues are much more under the command of the deceptive processes" than are body cues. This seems to imply that head expressions, and perhaps smiles in particular, are to some extent under conscious control, in such situations, and would therefore be subject to the miscalculation suggested above.

Not only did the subjects of the two experimental groups express themselves differently in the number of smiles they employed, but this difference increased from the first to the second period. In general, it would seem that the factors discussed above in relation to the small number of responses from approval-seeking subjects apply, to an even greater extent, as the interview progresses. Apparently the absence of response from the interviewer either inhibited the approval-seeking subjects still further, or increased the conflict already mentioned, and those subjects reacted by being less willing to disclose themselves, or by lowering still further their estimate of the number of smiles that could safely be used without revealing their approval-seeking motives. It would seem a likely conclusion that the longer a person continues to produce smiles, without the smiles being reciprocated, the more inappropriate the smiles become. The "neutral" subjects appear to

enjoy a greater freedom of manoeuvre, having no motives to conceal. In a normal social situation, where reciprocation of smiles would tend to be the rule, both persons would establish a growing rapport and, as a result, become more at ease and willing to express themselves. Even though such a situation did not exist in this experiment, the "neutral" subjects may have tended to assume that it did, or that it was within their power to produce it. In increasing their smiles through time they were trying to behave as they were accustomed to do in a more normal and, presumably, more desirable situation, or were taking the initiative in trying to make it a more normal situation. There is also the possibility that frequency of smiles, and other head expressions, vary directly with the degree of cognitive activity. In support of this it was found, in the present experiment, that the remaining two head gestures, nods and head shakes, did increase, though not significantly, from the first to the second period. Differences within each of the three body gestures from the first to the second period were very small, but were all in the direction of reduced activity. An alternative explanation of the significant interaction between experimental conditions and periods, for smiles, is that as time passed, the "neutral" subjects become aware of the unusual and undesirable features of the situation and their cognitive activity increased as they attempted to find a solution, resulting in a greater frequency of smiles. Subjects seeking to win approval, however, became more and more convinced of the impossibility of achieving this aim. Instead of making greater efforts to find a solution, they increasingly abandoned the attempt, with a reduction in their cognitive activity and a consequent reduction in the frequency of their smiles.

Irrespective of how these findings may be explained - and some of the interpretations given are of a speculative nature - it should be recognized that the time factor is one which requires study and can not be ignored in experiments of this nature. Conclusions can not be generalized from a situation of one duration to a similar situation of a different duration.

Nods, unlike smiles, were significantly greater in number for the Experimental group than for the Control group. This is as might have been anticipated. For example, Crowne and Marlowe (1964) found that subjects high in n-Approval showed a significantly greater tendency to conform than did those low in n-Approval. Nodding would seem an obvious method of expressing conformity. It is true that, in the author's experiment, the target person had not expressed any opinion with which the subjects could have conformed but, again, the subjects seem to have been reacting here as they would have done in a more normal situation. Assuming that nods are habitually used in everyday communication to express conformity, the habit appears to persist, even in a situation in which there is no criterion with which to conform.

While some changes over time were found in particular responses, the total number of gestures remained remarkably stable. It might have been expected that, when the gestures did not produce any response from the interviewer, the subjects would cease to use them. On the other hand, the tendency might have been to increase gestures until a response from the interviewer was obtained. In fact, the frequency of gestures was neither increased nor decreased. The subjects, it is true, had been informed that the interviewer would not make any responses. It is impossible to know whether the subjects understood this to refer only to

verbal responses, or how salient this information was in the subjects' minds during the interview. It can be concluded, however, that while gestures may be influenced selectively by responses and reciprocations, resulting, for example, in the increase of smiles when they were reciprocated by the interviewer, the overall use of gestures does not depend on such responses and reciprocations being forthcoming but are, at least in part, a habitual activity.

A point which is seldom considered, but which is relevant to this report, is the relationship of the induced condition of Approval-seeking to the personality variable of high n-Approval. In this study significant differences were obtained for the Approval-seeking conditions, but there were neither significant differences between the responses for the three levels of n-Approval nor significant interactions between these three levels of n-Approval and the Approval-seeking conditions. One possible interpretation is that n-Approval, measured by a pencil and paper test, is not the same factor as the approval-seeking induced in this experiment.

Since some of Rosenfeld's studies have basic elements in common with this one it is helpful to compare certain findings. There are indications which suggest that the absolute reduction in smiles in this experiment, as compared with the Rosenfeld experiments, was mainly due to the absence of responses and reciprocations from the interviewer. This interpretation is supported by some casual data from the present study. One Approval-seeking subject, who was eliminated because it was discovered that he was closely acquainted with the interviewer, twice induced the interviewer to reciprocate smiles. The total smiles recorded for this subject were approximately five times above the mean for all subjects, and amounted to more than the total smiles for the eight subjects in his cell. One subject, who was not

required for the experiment, was given the same instructions as the approval-seeking subjects, with the omission of references to responses from the interviewer. The interviewer was instructed to behave as he normally would do while the subject responded to the questions. That is, the interviewer did not inhibit his natural inclinations to respond to the subject's smiles and gestures. The number of smiles used by this subject was almost seven times greater than the mean for all subjects, and considerably more than the total for the eight subjects in the cell to which he would have been allocated in the experiment. The above interpretation is also supported by the report of a later experiment published by Rosenfeld (1967) after the data for the present study had been obtained. Rosenfeld found that smiles occurred significantly more frequently in a period when the interviewer responded than they did in a period of equal length when the interviewer did not respond. In part of an earlier study (Rosenfeld, 1966a), in which there was complete freedom of response between members of dyads, smiles were significantly correlated between members of each dyad. These indications, taken together, suggest that responses to smiles, and reciprocations to smiles, increase the production of smiles considerably. If this is so then it would appear that Rosenfeld was measuring, among other factors, the tendencies of Approval-seeking and "neutral" subjects to react to the reciprocation of smiles.

The fact that Rosenfeld obtained highly significant differences between the gesticulations of Approval-seeking and "neutral" subjects, while in this study the corresponding differences were very slight, also requires an explanation. Rosenfeld's recent report (1967) showed that gesticulations were reduced when the interviewer did not respond. It

thus seems possible that Approval-seeking subjects were more sensitive than "neutral" subjects to the interviewer's responses to their gestures, and therefore gesticulated more frequently in the earlier Rosenfeld study, in which responses were permitted. The effectiveness of role-playing may again be questioned.

A further interesting difference between this and Rosenfeld's investigations is the fact that, in the latter's studies, there were always one or more categories of gesture which did not yield sufficient responses for statistical techniques to be applied. In this study, there was no such paucity of responses. If Rosenfeld is correct in suggesting that posture changes reveal discomfort (1966a), the absence of response from the interviewer, in this study, may have increased the discomfort of the subjects, with the resulting increase in postural changes. If it may be assumed that head shakes are a sign of non-conformity, it is likely that the effect of any kind of response from the interviewer would be to establish some degree of rapport, thus reducing the subjects' non-conformity and, consequently, their head shakes. This would explain the discrepancy between the number of head shakes in the two experiments. It therefore appears that lack of response from the interviewer is the most likely cause of a greater number of responses, in this study, in those categories of gesture for which Rosenfeld did not obtain sufficient frequency of response to permit statistical analysis.

It should be pointed out that one apparently unique feature of this investigation is the attempt to study smiles and gestures, as they are related to seeking approval, in isolation from other social factors as expressed through the feedback of the interviewer. It is the view of

this experimenter that the subject's inherent tendencies to react to his need for approval in terms of gestures should first be investigated. When such tendencies are more fully understood it will then be possible to broaden the investigation, with advantage, to various social situations.

Nevertheless, it should not be concluded that this study is completely remote from everyday life. There are fairly common situations in which approval-seekers do not receive responses from the target person. It is only on rare occasions that a speaker on a platform will see his audience nod, shake their heads, gesticulate, use self-manipulations, or change their postures, or smile in relation to the speaker's approval-seeking rather than as an expression of amusement. Those broadcasting on radio or television, without a studio audience, have no immediate feedback. An unwanted salesman will find his audience in the doorway extremely unresponsive, or that the responses are limited to those that indicate rejection. Thus, this study has a relevance beyond the immediate objects of the research.

Suggestions for further research

The fact that many of the suggested interpretations are of a speculative nature is an indication of the need for further research. Such research might be directed to the solution of such problems as those discussed below.

Does approval-seeking have a repressive effect, or does it inhibit subjects in expressing themselves? That is, do these subjects divert psychic energy to the process of keeping their approval-seeking motives out of consciousness, with the result that their behavior is generally more rigid and restrained, or does the knowledge that they are seeking

approval have some such effect as embarrassing them and thus making them more cautious in how they express and reveal themselves. If experiments could be designed to yield measures of such repression or inhibition, in relation to approval-seeking, then any increase in repression or inhibition accompanying approval-seeking would appear to account, at least in part, for the smaller number of smiles employed by approval-seeking subjects.

Jones (1964) found that approval-seeking subjects modify their verbal responses to avoid betraying their approval-seeking motives. It would be of interest to know to what extent subjects in this situation modify their non-verbal responses. In an elaboration of the present study, subjects in one experimental group might be interviewed in a face-to-face encounter while those in another group would be limited to verbal communication with the interviewer, who would not be visible. Less gestural activity on the part of the "face-to-face" group would suggest that subjects reduce such activity to avoid betraying their approval-seeking motives.

It has been generally assumed, by those studying non-verbal communication, that the information so conveyed relates mainly or entirely to affective states. It has been found, however, by Goldman-Eisler (1961) and Lay (1964) for example, that one aspect of non-verbal communication namely, hesitation phenomena, is highly related to ongoing cognitive processes. The possibility should therefore also be considered that non-verbal behavior may be in the nature of a language expressing information that is not particularly subject to affective influence. If this is in fact so it would be reasonable to expect an increase in behavior expressive of such non-

verbal communication when a person's cognitive activity is known to have increased. As a preliminary investigation to determine whether there is a relationship between gestures and ongoing cognitive activity, subjects might be presented with tasks differing in cognitive difficulty. For example, one task might require simple description of a situation and the more difficult task call for the solution of problems arising out of the situation. Greater frequency of a particular gesture while performing the cognitively difficult task would indicate a positive relationship between that gesture and ongoing cognitive activity.

Some of the data in the present study suggests that, when a subject is not consciously attempting to produce gestures, the total number of gestures produced in a short period, say one minute, is limited and that if he increases one form of gesture he compensates by reducing others. This requires further investigation by statistical comparisons of the numbers of different gestures produced within short periods. It would also be important to investigate individual differences in the general tendency to use gestures and in the tendency to prefer particular gestures. One suitable method of study here would involve the correlation of the frequency of these responses with subjects' scores on selected personality variables.

An investigation of the tendency to use gestures as a substitute for speech, or to emphasize or tone down what is verbally expressed, could yield highly important results. Such a study might be made through the comparison of simultaneous recordings of verbal and non-verbal behavior.

The possibility that gestures, because they may be less subject to

censorship, contradict what is verbally expressed may be investigated by involving subjects in situations in which their preferred verbal responses could, or could not, honestly be given. It would be expected, for instance, that if a subject responded "Yes" verbally when he believed the true answer to be "No" he would tend to accompany this verbal answer with a shake of his head.

Further research might also be concerned with the gestures of blind, deaf, or dumb subjects in comparison with the corresponding gestural activities of subjects not thus handicapped. Since subjects blind from birth would have no direct knowledge of the gestures of others, except perhaps by tactual contact, it would be interesting to determine the extent to which they use gestures. Deaf subjects might presumably depend to a greater than average extent on the gestures of others for receiving information. On the other hand, dumb subjects could be expected to have developed to a greater than average extent the use of gestures for the purpose of expressing themselves.

SUMMARY

The purpose of the study was to investigate the effects of need for approval and of induced approval-seeking on non-verbal behavior. Forty-eight male first-year university students were used as subjects. These subjects were trichotomized on the basis of need for approval scores and allocated randomly in equal numbers to an Approval-seeking and a Control group. Approval-seeking was induced, within a standardized interview session, by leading the subjects to believe that their status in a subsequent task would depend on how far they won the approval of the interviewer. Feedback from the interviewer was controlled as much as possible by reducing it to a minimum.

Approval-seeking subjects smiled less frequently than "neutral" subjects. This difference was greater in the second half of the interview than in the first. On the other hand, Approval-seeking subjects nodded more frequently than "neutral" subjects. The other categories of gesture investigated were not significantly influenced by the experimental condition of the subjects, and all except smiles showed a high stability of frequency over a ten-minute period. The personality variable of n-Approval did not produce any main effects. Relating the results to those of other relevant studies, it was apparent that the frequency of these gestures was considerably influenced by the feedback, or lack of feedback, from the interviewer.

Various interpretations of the data were discussed and suggestions for further research were presented.

APPENDIX A

ANALYSIS OF VARIANCE TABLES

TABLE I
ANALYSIS OF VARIANCE OF SMILES

Source	df	MS	F
Approval-seeking (A)	1	26.042	4.198*
n-Approval (B)	2	5.789	.933
A x B	2	1.112	.179
Subjects within AB group	42	6.204	
Periods (C)	1	.510	.472
A x C	1	10.667	9.860**
B x C	2	1.893	1.750
A x B x C	2	.424	.392
Subjects within ABC group	42	1.082	

* $p < .05$

** $p < .01$

TABLE II
ANALYSIS OF VARIANCE OF NODS

Source	df	MS	F
Approval-seeking (A)	1	159.505	5.071*
n-Approval (B)	2	58.771	1.867
A x B	2	39.083	1.243
Subjects within AB group	42	31.453	

* $p < .05$

TABLE III
ANALYSIS OF VARIANCE OF HEAD SHAKES

Source	df	MS	F
Approval-seeking (A)	1	.750	.020
n-Approval (B)	2	120.005	3.193
A x B	2	66.109	1.759
Subjects within AB group	42	37.583	

TABLE IV
ANALYSIS OF VARIANCE OF GESTICULATIONS

Source	df	MS	F
Approval-seeking (A)	1	36.750	.371
n-Approval (B)	2	20.146	.203
A x B	2	16.938	.171
Subjects within AB group	42	99.087	

TABLE V
ANALYSIS OF VARIANCE OF SELF-MANIPULATIONS

Source	df	MS	F
Approval-seeking (A)	1	490.875	3.223
n-Approval (B)	2	204.602	1.344
A x B	2	154.759	1.016
Subjects within AB group	42	152.280	

TABLE VI
ANALYSIS OF VARIANCE OF POSTURE CHANGES

Source	df	MS	F
Approval-seeking (A)	1	31.688	.451
n-Approval	2	21.000	.299
A x B	2	68.688	.978
Subjects within AB group	42	70.208	

APPENDIX B

SOCIAL RECOGNITION SUBSCALE OF THE PERSONALITY
RESEARCH FORM A

TABLE I

SOCIAL RECOGNITION SUBSCALE OF THE PERSONALITY
RESEARCH FORM A

1. When an instructor or teacher criticises my work, I sometimes feel depressed for a while. (T)
2. When someone tells me I am mistaken, I often assume that he is probably right. (T)
3. If a friend refuses to speak to me, I'm likely to figure I am to blame and should change whatever I was doing wrong. (T)
4. If someone disapproves of me, I just forget about it and go my own way. (F).
5. I usually feel better when I give in to avoid arguments and bad feelings than I do if I try to have my own way. (T)
6. I worry about what other people think of me. (T)
7. I like to say what I think about things. (F)
8. I find it difficult to get rid of a salesman to whom I do not care to listen or give my time. (T)
9. If I make an awkward social mistake, I can soon forget it. (F)
10. I am apt to pass up something I want to do because others feel that I am not going about it in the right way. (T)
11. I sometimes avoid social contacts for fear of doing or saying the wrong thing. (T)
12. I usually get over a humiliating experience quickly. (F)
13. I often feel self-conscious in the presence of important people. (T)
14. It is difficult for people to hurt my feelings or embarrass me. (F)
15. I usually feel bad if someone does not approve of what I am doing. (T)

16. I have sometimes stayed away from another person because I feared doing or saying something that might offend him. (T)
17. Criticism disturbs me very little. (F)
18. My mood is easily influenced by people around me. (T)
19. It is easy for me to act naturally wherever I am. (F)
20. I am too sensitive for my own good. (T).

APPENDIX C

INSTRUCTIONS

TABLE I

INSTRUCTIONS USED FOR INDUCING APPROVAL-
SEEKING CONDITION

We are studying productivity in groups with different kinds of organizational structure. You will be one of a group taking part in a short task.

In this part of the study the person the Supervisor thinks most attractive will be immediately under him in command, and will work beside him as Production Manager. The two persons judged next most attractive will be Copy Writers, with command over the person judged least attractive, who will be the Worker. This is our seating arrangement here (indicating place cards). These are our materials. I'll move them into the work room.

In another part of the study, with different subjects, these roles will be changed around. For example, the person the Supervisor likes most might be at the bottom of the chain of command, as the Worker. To-day, as I explained, if the Supervisor thinks you most attractive, you will get the job of Production Manager, and so on down.

The Supervisor is going to judge the attractiveness of yourself and the other subjects by the way you answer a number of questions. In the interview room you will find, face-down on the table, a number of cards, with a question typed on each. Lift one card at a time. Read it. Place it in the box provided, and answer the question orally. The ideal time for answering a question is about two minutes, but you can use a little more or less. The questions are all general. They are not of a personal nature.

A lot of research has shown that any kind of response from another person could bias the answer you might have been going to give. Because of this the Supervisor will not make any response to your remarks, but

will listen very carefully to what you say.

We should be ready for the experiment a few minutes after your interview. The other three subjects should be along by then. They have had their interview. When we get your score we'll see how you all fit in.

You may know some of the others. I think they're all from your class.

Are there any questions?

TABLE II
INSTRUCTIONS USED FOR INDUCING
CONTROL CONDITION

We are studying productivity in groups with different kinds of organizational structure. You will be one of a group doing a short task together.

The subjects in this part of the study are being allocated at random to these different levels of command (indicating place cards). These are our materials. I'll move them into the work room.

At the same time we are interested in how productivity is influenced by a person's interests. We want to see whether people with similar interests will work better together.

The Supervisor will determine your interests by the way you answer a number of questions. In the interview room you will find, face-down on the table, a number of cards, with a question typed on each. Lift one card at a time. Read it. Place it in the box provided, and answer the question orally. The ideal time for answering a question is about two minutes, but you can use a little more or less. The questions are all general. They are not of a personal nature.

A lot of research has shown that any kind of response from another person could bias the answer you might have been going to give. Because of this the Supervisor will not make any response to your remarks, but will listen very carefully to what you say.

We should be ready for the experiment a few minutes after your interview. The other three subjects should be along by then. They have had their interview. When we get your score we'll see how you all fit in.

You may know some of the others. I think they're all from your

class.

Are there any questions?

TABLE III

INSTRUCTIONS FOR INTERVIEWER

You will be seated behind a desk. The Experimenter will introduce the subject to you and will then leave the room.

You will instruct the subject to pick up the first question card, read it, put it down, and answer the question.

Note the time when the subject lifts the first card. Ten minutes later let the subject finish the answer he is giving. Then tell him that this is sufficient and that the interview is over.

During the interview do not respond to the subject verbally or non-verbally, except as follows:

1. After he has begun to answer a question allow the following time intervals: 10 seconds, 1 minute 20 seconds, 1 minute 50 seconds, 2 minutes 45 seconds, measuring each from the beginning of the answer. At the end of each of these intervals make a brief written note of what the subject is saying (6 or 7 words) and glance for a few moments at the subject.

2. If there is a prolonged silence (about 15 seconds), or if the subject is giving an unnecessarily long answer (about $3\frac{1}{2}$ minutes), suggest that he go on to the next card.

After telling the subject that the interview is over you will present the questionnaire, with the following instructions:

"This questionnaire has nothing to do with our experiment. It is something the Committee for Psychological Research wants filled in by all subjects. They want it filled in during the experiment to get your real reaction, rather than wait till it's finished, when you might feel a

sense of relieve that it's all over. Take a few minutes and fill it in. Then put it in the envelope, and seal it, and give it to me."

While the questionnaire is being completed you will pretend to make some calculations. When the subject returns the envelope you will give him the following de-briefing:

"Maybe you won't mind this, but I'm sorry we will not be able to use you in the experimental task. Your answers to the questions were very satisfactory in every other way, but do indicate that you have a considerably above average interest in the kind of task we are using, and that might influence the amount of production. It's all right as far as the experiment is concerned. We anticipated that this would happen with about 1/3 of the subjects, and that's just about how it's turning out. A few subjects, who were OK'd in the interview, are available on short notice in case this would happen, so that we can go on with the task as scheduled. There's only one other thing. Mr. Montgomery is doing this for his M.A. thesis, and is depending on you not discussing the experiment with anyone during the next three weeks. You have some clues as to what the task is, and you know the questions. If this information was passed along everybody might be able to answer the way you did, and we wouldn't get any subjects for the task at all! We know it's not your fault that we couldn't use you, and Mr. Montgomery is very grateful to you for coming along. Of course we'll give you the full hour's credit."

You will then dismiss the subject. Immediately after his departure write the name, or number, of the subject on the envelope he used. Check the number of cards he answered and indicate this number also on the envelope. Make sure the cards are in their original order for the next subject.

TABLE IV

INSTRUCTION FOR RECORDERS

Sounds made in the room where you will record are heard clearly in the mirror room. In addition, you will have to wear earphones to avoid being influenced by the subjects' verbalizations, so noises will seem reduced to you. Do not make any noise while the subjects are in the mirror room.

It will not be possible to give any signal when recording is to begin, so - stay alert!

Begin recording when the subject lifts the first card. Continue to record responses irrespective of what the subject is doing, e.g., whether he is reading or answering a question. Movements necessary to pick up or dispose of a card are not recorded.

Stop recording exactly ten minutes after the subject lifts the first card. One of you must give the other a signal to indicate that recording has ended.

For the ten minutes of recording fixate on the subject.

Each response should be recorded by writing its number, which appears at the end of its definition below.

The responses to be recorded are as follows:

- a) Smiles - definition unnecessary (1).
- b) Nods - movements of the head on the vertical plane (2).
- c) Head Shakes - horizontal shakes of the head (3).
- d) Gesticulations - any noticeable movement of arm, hand, or finger, while not in contact with another part of the body (4).
- e) Self-manipulations - any movement of one part of the body in contact with another part (5).

f) Posture Changes - movements of the body trunk or changes in the position of the hips (6).

A connected series of repeated responses is recorded as one response.

It is necessary to record the occurrence of responses in intervals of one minute. One of you must use a stop-watch and signal these minute intervals to the other.

APPENDIX D

INTERVIEW SESSION QUESTIONS

TABLE I

INTERVIEW SESSION QUESTIONS

- 1.^a Some countries are making efforts to explore space. What advantages do you think our descendants will enjoy, 100 years from now, as a result of these efforts?
2. Apart from events associated with some particular faith, what do you think is the happiest think that ever happened, and why?
3. Would it, on the whole, be a good thing if the state took over the care of children whose parents are not sufficiently interested in providing them with supervision and companionship?
4. What do you think of the idea that young people associate too much with those of their own age and not enough with older people?
5. Suggest a few practical ways to reduce cheating in examinations.
6. How could high schools give better preparation for life and study at the university?
7. If the public school curriculum included the teaching of good manners and consideration, what items should be included in such a course?
8. Suggest a few changes that would make men's clothing fashions more adventurous.
9. What is wrong with this tendency for girls to look more like boys and boys to look more like girls?
10. A relative that you never heard of before has left you \$100,000, on condition that it is all spent within the next ten years. What plans will you make to use the money?

^aQuestions were presented in this order to all subjects, to the number which the time limits of the interview permitted.

11. How far would you agree with the view that people look for too much "fun" in life?

12. Give some facts to support or contradict the view that most people are too pessimistic about international affairs.

13. What would you feel if you were allowed to live any three days of your life over again, at the cost of shortening your life one week for each day re-lived?

14. How far would it be to the advantage of the university student if a reasonable minimum participation in sports and social activities was made compulsory?

15. Help me to decide whether good looks and a kind heart usually go together.

16. Some students would like to have a more personal contact with their professors. How could this best be arranged?

17. Some people are not good at organizing their leisure time. Suggest some things which an advisory body might do for those who would welcome guidance in planning their leisure.

18. Canada has not become one of the United States. Is this a good thing for anyone, apart from the politicians?

19. Do we tend to expect too much from mothers? Can you think of any of their rights and privileges which should override those of their families?

20. Does religion let people down, or do people let religion down?

21. What would be the effect, in a political election, if the voters could vote either for the candidate they thought most suitable to represent them or against the candidate they thought least suitable?

22. Can you suggest any legitimate ways by which mass media of communication could contribute much more to people's feelings of security and happiness?

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