

The Influence of Group Singing on Trust and Cooperation

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This study investigated the effects of two components of group singing—music and activity—on trust and cooperation. Relationships between (a) music and trust and (b) activity and cooperation were predicted. Group singing was expected to yield the highest trust and cooperation scores, indicating interaction effects between music and activity vis-à-vis each of the two dependent variables. The latter were measured with the Giffin-Trust-Differential (trust) and the Prisoner's Dilemma game (cooperation). A 2 × 2 (music/activity × trust/cooperation) factorial design was employed. Four groups (n = 24 each) of adult Israeli males participated in a single session of one of the following activities: group singing (music/activity), listening to music (music/no activity), poetry reading (no music/activity), and film viewing (no music/no activity). Results confirmed the predictions for the effects of music on trust and of activity on cooperation. No interaction effects were found. The discussion focused on implications concerning the use of music interventions in therapy.

Two of the most common music-related leisure activities have been listening to music and participating in group singing. These activities have been widely practiced by lay persons and are not viewed as involvements that require professional training and experience. Recognizing the unique role of music and its universality as a medium for expressing ideas and feelings, behavioral scientists have expressed a continuous interest in unraveling music's psychological characteristics. The findings, to mention only a few were, for instance, that music addressed both the intellectual and the emotional functions (Payne, 1965).

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Also, music has been said to involve the id and the ego as well as the superego, thus promoting better communication, identification, imagination, self-expression, and self-awareness (Alvin, 1975). One often-mentioned characteristic of music is its capacity to provide opportunities for catharsis (e.g., Ruud, 1980) and its potential to strengthen the ego in a manner that facilitates better coping.

Music listening and singing have emerged as involvements that occur in a group setting as a form of collective experience. It is not surprising, therefore, that researchers have evinced an interest in the effects of music on group behavior, group cohesion, and group communication (Alvin, 1975; Gaston, 1968). Similarly, a growing interest has been demonstrated in the application of music as a component of psychological treatments rendered in groups.

Several authors claim that exposure to music in group situations enhances self-confidence, self-awareness, emotional relief, pleasure, and communication, and that it affects interpersonal behavior. Some authors maintain that these could have a positive effect on cooperativeness (Gaston, 1968), which might be strengthened in collective singing (Nordoff & Robbins, 1971; Schipkowensky, 1977). Furthermore, the literature also suggests that some of these characteristics might contribute to greater trust among the participants (Gaston, 1968; Gibb, 1972).

The effect of music on trust and cooperation was studied by Shpizer (1975), who reported that listening to music combined with relaxation increased trust compared to listening without relaxation and a no-music treatment group. No significant differences were found related to cooperation.

Studies in group dynamics have shown that the component of activity, coordinated and active interactions among the members, caused greater cooperation (Cartwright & Zander, 1968). In music, too, Schipkowensky (1977) theorized that the activity/passivity dimension deserved serious consideration and that a distinction should be made between active (e.g., singing) and passive (e.g., listening) involvements in music. This has led to the hypothesis that the elicitation of trust and cooperation requires the type of involvement that combines both music and activity. Group singing is an intervention that complies with this requirement; it is an active, musical experience.

It was predicted that group singing would emerge as a special intervention characterized by an interaction between music and activity, thus resulting in significantly higher scores for trust and cooperation. It was also predicted that the increase in trust would be related to the element of music, whereas a greater cooperation would be related to the element of activity.

Method

Subjects

The subjects were 96 adult Israeli males who participated in a continuing education program/workshop. Their ages ranged from 22 to 41 years ($M = 32$, $SD = 4.2$) and their mean level of education was 13.5 years with a standard deviation of 2.2. Subjects were randomly assigned to four treatment groups, each consisting of 24 participants. A chi-square analysis showed no significant statistical difference among the groups in terms of age, ethnic background (judged by the father's country of origin), and education. To reduce the possible influence of the formation of acquaintances and friendships, the study was conducted on the first day of their arrival for the workshop. The subjects volunteered to participate in the study, which was described as an investigation of leisure time activities and attentiveness.

Tests

All subjects were administered two tests, described in the following sections.

The Giffin-Trust-Differential questionnaire. This questionnaire is designed to measure trust toward either a group or an individual (Giffin, 1968; Patton & Giffin, 1974). It consists of 27 bipolar adjectives arranged on a 7-point scale along the semantic differential format. Subjects are asked to evaluate a particular person according to their first, and general, impression of that individual by marking a number on the scale that separates each pair of adjectives. The overall score is comprised of the sum of the ratings of all the 27 items of the questionnaire, where the higher ratings (i.e., 5, 6, and 7) represent a more positive (trustful) assessment. Some of the pairs are arranged in the reverse order to prevent a response set.

According to Giffin (1968), the questionnaire contains three independent factors. One, labeled *Character*, consists of nine items that refer to the reliability and intentions of the assessed individual. The second, *Dynamism*, consists of nine items that concern the degree of activity and openness of the assessed individual. The third factor, *Expertness*, consists of nine items that address the knowledge, skill, and judgment of the assessed person. The last factor was deemed irrelevant to the present study because it concerns leadership. Since the individuals in the four groups were tested before the group had had a chance to be formed, the issue of leadership was moot. The questionnaire has achieved reliability coefficients ranging from .75 to .93 (Shpizer, 1975; Tubbs, 1969).

The Prisoner's Dilemma game. The Prisoner's Dilemma is a well-known game designed to measure cooperation and competitiveness among individuals (Luce & Raiffa, 1967; Rappaport & Chammah, 1965). Its name derives from the original version, which was set as a game between two prisoners. Since then it has been modified into several versions.

The version used in the present study involved playing in pairs. Each participant received a sheet of paper divided into three columns. One entitled "My choice" listed 30 identical items, each containing two words: "red" and "blue." The second was identical to the first, except that it was entitled "My partner's choice." It, too, contained 30 items of the words "red" and "blue." The third column, entitled "My score," had blank lines. The participants were told that the person who got the highest score would be the winner. The point, however, was that, although the individual's score depended on the partner's choices, each player had to make the choices independently. After making their own 30 choices individually, they needed to compare them with the partner. On a given item, if both players chose blue each received 3 points. In case both players chose red, each received 1 point. If, however, one player chose red and the other blue, the red received 5 points and the blue zero. The dilemma, therefore, was between choosing red to maximize personal gain and choosing blue, a choice that earned fewer points but indicated cooperativeness since both players got equal points. No communication, verbal or otherwise, was

allowed between the players during the period of making initial choices. The choices were irreversible.

Design and Procedure

The two variables thought to affect trust and cooperation were music and activity. Therefore, the study was planned as a 2×2 (music and no music vs. activity and passivity) factorial design. Accordingly, each of the four groups participated in a separate and different experimental condition.

Group singing (music and activity). This group participated in group singing. This included popular Israeli songs selected for ease and familiarity by independent judges. The words of the songs were given to the participants as a handout; in addition, the words were shown on a screen using a slide projector. The accompanying music (a combination of a piano and a trumpet) was produced on a tape recorder especially for the study. Two leaders conducted the group singing experience.

Listening only (music and passivity). This group participated in a session by listening to the music as played to them on the same tape used in the first condition.

Poetry reading (no music and activity). This group participated in a collective poetry reading. The verses were taken from a Hebrew book entitled *And This Child is Me*, and were written on a blackboard. To avoid tardiness and monotony, the format of the reading varied from reading aloud in dyads, triads, small groups, or all together. Again, two leaders conducted the reading experience.

Film viewing (no music and passivity). This group was shown a documentary movie entitled "The Life and Accomplishment of David Ben-Gurion." The film did not have musical accompaniment and was seen by the participants for the first time.

Each of the above activities lasted for approximately 1 hour. The seating was arranged in one row of chairs in a U-type formation. At the end of each activity, subjects were asked to complete a Hebrew translation of the Giffin-Trust-Differential questionnaire. Each was instructed (by a note) to complete it with regard to the person sitting to the right; those sitting at the two ends of the U formation were instructed to evaluate the person sitting opposite to them.

Following administration of the questionnaire, subjects in each group were divided at random into pairs according to a predetermined arrangement. These pairs did not include persons who evaluated each other before. The dyads played the Prisoner's Dilemma game. Six experimenters watched the game to ascertain that the players abided by its rules.

Results

The measure of trust was represented by the scores derived from the 18 items of the Giffin-Trust-Differential questionnaire that comprised the two factors, Character and Dynamism. The remaining nine items (Expertness factor) were not included with the results because they were considered irrelevant to the characteristics of the participating groups. The appropriateness of the decision to use the combined scores of the two factors only was also supported by the results of the intercorrelations between the total scores for the entire questionnaire and the scores obtained for each of the three factors. The product-moment correlations between the total scores (all three factors combined) and the scores on Character and Dynamism were $r = .85$ and $r = .70$ respectively, with a correlation of $r = .94$ for the two factors combined. Also, each of the Character and Dynamism factors resulted in a high correlation coefficient with their combined scores, $r = .85$ and $r = .80$ respectively. As expected, the two factors themselves correlated significantly but not very highly ($r = .38$). All cited correlations were statistically significant at the $p < .001$ level.

The split-half reliability results for the present Hebrew version of the Giffin-Trust-Differential questionnaire was very high ($r = .91$). Table 1 presents the results obtained by the subjects in the four treatment groups on the measures of trust and cooperation.

On the measure of trust, subjects exposed to music either in the form of group singing or as merely listening scored higher than did subjects who were engaged in the nonmusical activities of poetry reading and film viewing. A two-way analysis of variance showed a statistically significant main effect for music [$F(1, 95) = 28.30, p < .001$] but not for the main effect for activity. There was also no significant interaction effect. It ap-

TABLE 1
*Means and Standard Deviations for Scores on Trust and Cooperation**

Intervention:	Music		No Music	
	Group Singing (Active)	Listening Only (Passive)	Poetry Reading (Active)	Film Viewing (Passive)
Trust				
<i>M</i>	86.33	80.17	68.17	69.17
<i>SD</i>	13.50	11.83	11.60	15.72
Cooperation				
<i>M</i>	17.25	9.00	15.52	5.08
<i>SD</i>	9.64	6.29	8.95	6.05

* $N = 96$.

peared, therefore, that musical activity increased trust compared to nonmusical activities, regardless of whether the participants were active or passive.

On the measure of cooperation as derived from the Prisoner's Dilemma game, subjects exposed to cultural experiences (musical or not) that require active participation scored higher than did those who participated passively. Subjects in the group singing and poetry reading groups emerged as more cooperative than those in the listening and film viewing groups. A two-way analysis of variance revealed a statistically significant main effect for activity [$F(1, 95) = 33.23, p < .001$] but not for the main effect of music, which only showed a slight trend ($p = .078$). Again, no significant interaction effect was discerned.

The results obtained by subjects in all the four groups indicate that increased cooperation was related to the level of active participation rather than to whether or not the activity involved music. This general picture notwithstanding, it seemed that the cooperation scores obtained by the two primary groups of interest, those exposed to musical interventions, were congruent with the hypothesis under investigation. The cooperation scores of subjects involved in group singing were significantly higher [$t(47) = 3.43, p < .01$] than for those who merely listened to music.

The results showed that the measures of trust and cooperation used in the present study represented separate psychological dimensions. The product-moment correlation between the combined scores for the Character and the Dynamism factors and

the scores on the Prisoner's Dilemma Game was $r = .12$, $p = .11$.

Discussion

Involvement in group singing was shown to stimulate, perhaps promote, trust and cooperativeness among the participants. Ample evidence has been presented in the literature on group dynamics to suggest that both trust and cooperation are primary contributors to the formation of group cohesion, which constitutes a necessary ingredient in getting group members to work together constructively (Cartwright & Zander, 1968; Deutch, 1986; Sampson, 1976). The obtained results, therefore, support the clinical application of group singing as a therapeutic intervention in conducting group treatments.

What are the sources for these effects, and are they unique to group singing? The tendency of group singing to enhance trust and cooperation was traced to the influence of two elements, music and activity. There was a good reason to expect an interaction effect between these two elements, an interaction that would result in significantly higher trust and cooperation scores among the group singing group compared to the scores of the rest of the groups. The expectation stemmed from earlier findings (Cassity, 1976; Drabes & Shrift, 1957; Shpizer, 1975) that involvement in musical experience increased communication among the participants. Some of the manifestations found to contribute to better communication were greater group cohesion, trust, and positive self-image. According to Gaston (1968), the effect of music on communication should be more pronounced in group singing. The present results, however, showed that, while subjects in the group singing condition produced the highest average scores on both trust and cooperation, no statistically significant interaction effects occurred between music and activity for either of the two measures under study.

The comparison of four combinations of music and activity revealed, on the other hand, that each of these two elements was associated with a different psychological process. Thus, the increase in trust was related to the effect of music, whereas the greater cooperativeness was primarily related to the effect of activity. Having identified a differential effect for music and activity might suggest, perhaps, that *any* musical experience

that contains these two elements could be expected to elicit similar results. In other words, group singing conceivably may not represent a special case but rather one of several examples of such interventions. This tentative conclusion needs to be further tested with other music therapy techniques having the same characteristics (e.g., making existing music and improvising or creating new melodies with a group of players playing various instruments).

The caution expressed regarding the foregoing interpretation of the results is based on two observations. First, the design of the present study provided unusual conditions for the development of trust and cooperativeness. The participating subjects were studied on the first day they met and were exposed to one session of each of the four activities. The rationale for adopting the strategy of studying complete strangers was that this neutralized the likely effect of factors such as the formation of new friendships and increased cohesiveness due to other group activities. This was also the basis for the decision to expose the subjects to one session only. True, the single exposure was sufficient to demonstrate the existence of a few main effects. It might be questionable, however, whether or not it also constituted an optimal condition to produce the interaction effects. Second, the analysis of variance results concerning cooperation indicated a clear, significant main effect for activity. The main effect for music, however, yielded an interesting, though not statistically significant, level of confidence ($p = .078$). Given the preceding discussion and the possibility of insufficient exposure, no definite conclusion can be reached regarding the relation between music and cooperation. This issue should be studied using experimental designs not limited to single musical exposures.

A study by Shpizer (1975) found that subjects exposed to listening to music following relaxation scored significantly higher on trust compared to subjects listening to music without relaxation, and to no-listening controls. The present findings did not support the association of relaxation with listening to music as a necessary factor in creating trust. Rather, they showed that music alone, either in the form of listening or singing, was sufficient to cause elevated trust scores. Furthermore, the lack of significant differences on the measure of cooperation between

the various listening groups and their control group as reported in Shpizer's (1975) study might now be explained. The results of the present study revealed that cooperation was related to the element of activity. Film viewing and listening to music elicited significantly lower cooperation scores. Therefore, it was not surprising that a comparison of several groups exposed to an equally inactive musical experience showed no difference on a measure of cooperativeness.

Finally, the present study focused on the music and the activity aspects of group singing. While little doubt exists that these indeed represent central ingredients of this particular intervention, others have also suggested (Nordoff & Robbins, 1971; Schipkowensky, 1977) that group singing contains other characteristics (e.g., facilitating self-expression, creating arousal, and enhancing self-confidence). These may also contribute to the relationship between group singing and trust and cooperation. Their influence may be direct, as mediating and facilitating variables, or completely unrelated to either trust or cooperation. Such factors should be included in future studies to shed further light on the psychological characteristics of group singing.

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