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THE EFFECTS OF MUSIC ON HELPING BEHAVIOR: A Field Study

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ABSTRACT: Several studies indicate that mood can influence the likelihood of an individual demonstrating instances of helping behavior, and one previous laboratory study has indicated that music can be used to bring about manipulations of mood to such an end. To investigate this in a naturalistic setting, 646 users of a university gym were played either uplifting or annoying music while they worked out. Upon completion of their workout, they were asked to either sign a petition in support of a fictitious sporting charity (i.e., a low-cost task) or to distribute leaflets on their behalf (i.e., a high-cost task). Responses to the petition-signing measure indicated a ceiling effect with almost all participants offering to help. However, consistent with previous research on mood and helping behavior, uplifting music led to participants offering to help more on the high-cost, leaflet-distributing task than did annoying music.

Keywords: music; helping; altruism; mood; emotion

Several studies have investigated the effect of mood on various forms of helping behavior (see reviews by Berkowitz, 2000; Manucia, Baumann, & Cialdini, 1984; Salovey, Mayer, & Rosenhan, 1991). One finding of this research is that helping behaviors are more likely to be demonstrated when participants are in positive moods (e.g., Baron, 1997; Berkowitz, 1987; Carlson & Miller, 1987; Dovidio, 1984; George, 1991; Gueguen, 2001; Gueguen & Legohérel, 2000). The effect of negative moods on altruism is less clear, but such emotional states seem to give rise to a reduction in helping behavior when they result from the person in question not being responsible for their negative mood (e.g., Rogers, Miller, Mayer, & Duvall, 1982) or when the negative feelings are not focused on the person needing aid (e.g., Carlson & Miller, 1987; Thompson & Hoffman, 1980; Thompson, Cowan, & Rosenhan, 1980; see Berkowitz, 2000). Similarly, Weyant (1978) demonstrated that negative moods only give rise to helping behavior when the costs of helping are low and the benefits are high.

Research on the effect of mood on helping has employed a variety of mood induction techniques, although the role of music has received little attention. This is surprising on two grounds. First, the potential of music to influence emotions is obvious. Second, several studies have indicated that music can mediate several behaviors related tangentially to altruism such as displays of aggression (Konecni, Crozier, & Doob, 1976), cafeteria customers' willingness to spend money (North & Hargreaves, 1998), or school pupils' willingness to maintain low levels of classroom noise (Wilson & Hopkins, 1973). Indeed, only one previous study has investigated the relationship between music and altruism directly: In a laboratory study, Fried and Berkowitz (1979) found that soothing music promoted greater levels of altruism than did either aversive music or no music. Such a finding is consistent with research on helping behaviors that indicates that *uncontrollable* exposure to an aversive stimulus (such as aversive music) should decrease the exhibition of altruism, because the participant is *not responsible* for their negative mood (e.g., Rogers et al., 1982). The present study aimed to determine whether similar effects could be obtained under more naturalistic conditions and whether the cost of helping mediates the relationship between music and altruism.

Two types of music were played to users of a university gym. The first type of music was selected to elicit a positive, uplifted emotional state, whereas the second type of music was selected to elicit an annoyed emotional state. Because users of the gym were not responsible for their exposure to the music and its subsequent effect on their mood, the findings of Rogers et al. (1982) and others led us to expect that the annoying music would be less likely to elicit helping behavior than the uplifting music. To test this, on

leaving the gym, users were asked to complete one of two tasks (similar to those employed by Weyant, 1978) in which they had the opportunity to help others. In the low-cost task, users were asked to sign a petition in support of a sporting charity. The findings of Weyant (1978) led us to expect that there would be little difference between the two music conditions on this task: The cost of helping is low and so the annoying music condition may not lead to a reduction in helping. In the high-cost task, users were asked to distribute leaflets on behalf of the same charity: The time involved in so doing represented a higher cost of altruism to the participant relative to merely signing a petition. The findings of Weyant led us to expect that the probability of helping in this high-cost task would be reduced by musically induced negative mood. Accordingly, although uplifting music should lead to greater levels of helping on both tasks, this effect should be accentuated among participants who are asked to complete the high-cost task.

METHOD

PARTICIPANTS

The study employed 646 users of two gyms at a university in the East Midlands region of the United Kingdom. The sample consisted of 366 males and 280 females (mean age = 24.63, $SD = 9.11$). All users had already completed an induction session run by the gyms.

FIELD SETTING

Two modern gyms were used as part of the research. The first was situated on a university campus, and the second was situated in a complex of student residences. The gyms were otherwise very similar, sharing the same name, equipment, and staff, and the same university ran both. Because it was not possible to obtain music videos for one of the music conditions, throughout the study, the television monitors in the gyms showed visual-only, Disney, animated feature films played from a conventional VHS video recorder.

Two music conditions were employed. The positive mood music featured up-tempo, British, top-20 selling singles from recent years and the negative mood condition featured avant-garde computer music. Participants' responses to a questionnaire (see below) allowed confirmation that the music in question was perceived as uplifting or annoying, respectively. Approximately 2 hours of music was recorded onto a CD for each condition to ensure

that participants would not hear any given piece twice (see the Appendix for details). The CDs were played over the gyms' high quality music system at a volume audible in all areas of the gym consistent with that at which music was usually played in the gyms.

Throughout the experiment, notices were displayed at the reception desk where users were required to sign in and sign out. The notices concerned a fictitious charity, named the British Disabled Athletes Association. They were printed on white A4 paper and stated in 36 point that "The British Disabled Athletes Association (BDAA) aims to improve access to sports for the disabled and is campaigning for greater funding from the government. Please show your support."

Two questionnaires were employed with gym users as they left the gym. In the low-cost condition, participants were first asked to sign the petition by an experimenter seated at the reception desk posing as a member of staff. The petition was headed, "The British Disabled Athletes Association," and asked people to sign it "in order to show your support for greater government funding of disabled people's access to sporting opportunities". In each case the petition was blank save for the signature of a B. Lancaster and his or her gym user number. Irrespective of whether participants signed the petition, they were then asked to state their age and sex, gym user number, and how long they had spent in the gym. Participants were then asked to rate the music played in the gym that day on a scale from 0 = *really annoying* to 10 = *really uplifting* consistent with the hypothesis of the research. Finally, participants rated their mood on a scale from 0 = *really annoyed* to 10 = *really happy*. Once the participant had left the gym, the experimenter marked the questionnaire to indicate whether that person had signed the petition. In the high-cost condition, the same experimenter gave users a printed sheet stating,

The British Disabled Athletes Association (BDAA) aims to improve access to sport for the disabled and is campaigning for greater funding from the government. A team of Leicester University students are participating in a sponsored cycle from Leicester to London [a distance of approximately 100 miles] to deliver a petition to the government in support of the BDAA. Would you be willing to help distribute leaflets to raise awareness in Leicester during any of the following periods? Transport will be provided.

A list of 10 dates for leaflet distribution was then provided representing various times of the day and week. Participants were then provided with boxes in which to state "Yes" or "No", and, if "Yes", to then state how many leaflets they would distribute selecting from options of 50, 100, 150, 200, and 250. Participants who stated that they were willing to distribute leaflets were also

TABLE 1
Ordering of the Conditions

	<i>Day 1</i>	<i>Day 2</i>
Gym 1	Low-cost task: uplifting music	High-cost task: annoying music
Gym 2	Low-cost task: annoying music	High-cost task: uplifting music

asked to leave a contact telephone number (to maintain the credibility of the request made of them). Irrespective of whether participants were prepared to distribute any leaflets, they were then asked to state their age and sex, gym user number, and how long they had spent in the gym. They were then asked to rate the music and their mood using the same scales as in the low-cost condition.

DESIGN

A 2 (type of music) \times 2 (type of task) independent-subjects design was employed. Testing was carried out over 2 consecutive weekdays during term time (see Table 1 for details) such that the same music was played in both gyms on any single day. This was to aid the credibility of the cover story prepared should any users question the choice of music played (namely that a cleaner had accidentally spilled liquid over the CD collection and that the gym was currently waiting for replacement copies). Gym user numbers were used to check that no single participant appeared in more than one condition.

PROCEDURE

Participants entered the gym and worked out in a manner of their own choosing. On leaving the gym, participants signed out at the reception desk and were then directed by the experimenter there (posing as staff member) to one of the two questionnaires dependent on the condition running that day. During the course of the study, 3 users questioned the choice of music playing. They were told the cover story by the experimenter and their data were excluded from analyses. Informal discussions with management at the gym prior to the study indicated that most users visited the gym every other day. Accordingly, on the second day of data collection, users were asked whether they had heard of the BDAA from a visit to the gym the previous day. Any that answered yes ($n = 73$) were excluded from the analysis. Debriefing sheets were posted on the walls of the gyms one week after data collection had been completed. These included a full explanation of the aims of the

study, invited participants to withdraw their data, and provided contact details of a genuine sports charity.

RESULTS AND DISCUSSION

MANIPULATION CHECKS

Two independent-subjects *t* tests were carried out to check the proposed manipulation of music and mood. The first compared participants' ratings of the two types of music. The results of this were significant, $t(643) = 30.17$, $p < .001$, with means of annoying music = 1.46 ($SD = 2.00$) and uplifting music = 6.06 ($SD = 1.84$). The second *t* test compared participants' mood ratings subsequent to exposure to the two types of music. The results of this were significant, $t(643) = 10.64$, $p < .001$, with means of annoying music = 4.18 ($SD = 2.55$) and uplifting music = 6.98 ($SD = 1.54$). These tests confirm that the putatively annoying and uplifting music were perceived as such and that participant mood differed accordingly between these two music conditions. Finally, an independent-subjects *t* test was calculated to check for any possible differences between the two types of music in the amount of time participants spent in the gym (i.e., the difference between when they signed in and signed out), because this might potentially confound participants' subsequent willingness to help. The results of this were nonsignificant, $t(643) = 0.19$, indicating that there was no difference between the two types of music in the amount of time participants spent in the gym. Mean time spent in the gym was 63.17 minutes ($SD = 25.25$) in the annoying music condition and 62.82 minutes ($SD = 22.12$) in the uplifting music condition.

MAIN ANALYSES

A χ^2 test was carried out on data collected in the low-cost, petition-signing condition to investigate any association between the type of music played and whether participants signed the petition. The result of this was nonsignificant, $\chi^2(2) = 1.90$, and frequencies are presented in Table 2. These indicate that this measure was subject to a ceiling effect whereby the great majority of participants signed the petition irrespective of the music they had been exposed to in the gym.

A second χ^2 test was carried out on data collected in the high-cost, leaflet-distributing condition to investigate any association between the type of music played and the number of leaflets that participants were prepared to

TABLE 2
Frequency With Which Participants Signed the Petition × Type of Music

	<i>Uplifting Music</i>	<i>Annoying Music</i>
Did not sign	0	3
Signed	121	192

TABLE 3
Number of Leaflets Participants Were Willing to Distribute × Type of Music

	<i>Uplifting Music</i>	<i>Annoying Music</i>
0 leaflets	73	105
50 leaflets	31	17
100 leaflets	19	5
150 leaflets	2	1
200 leaflets	2	0
250 leaflets	1	0

distribute. The result of this was significant, $\chi^2(5) = 21.34, p = .001$, and frequencies are presented in Table 3. These data indicate that there was an association between the music played and the number of leaflets that participants were prepared to distribute. Specifically, participants were prepared to distribute more leaflets in the uplifting music condition.

CONCLUSIONS

Table 2 indicates that virtually all the participants were willing to sign the petition because this required little immediate effort and had no longer term consequences for them (i.e., low relative cost). In contrast, the data concerning leaflet distribution (see Table 3) indicate that, when the help requested required a greater amount of time from the participants and had longer term consequences (i.e., high relative cost), then the music did influence the incidence of helping behavior. In particular, Table 3 indicates that the direction of this effect supported the hypothesis—namely, that music that induces an uplifted rather than annoyed emotional state should produce the most positive effect. This finding is consistent with research concerning mood and altruism and indicates that music can influence helping behavior in naturalistic, music-listening situations.

In addition to the obvious need to replicate the present findings, the present study suggests several other opportunities for future research. First, future research could investigate helping behavior in everyday contexts in which music is less frequently experienced: Would music still influence helping behavior even if it is not a regular feature of the environment? The management of the gyms used in the present study was not willing to allow a no-music condition to be run, because they felt that music should always be played. Consequently, the present findings tell us nothing about the impact of different types of music on helping behavior relative to that of no music, so this represents another obvious opportunity for future research. Finally, future research could also consider existing theories of emotional responses to music (e.g., North & Hargreaves, 1997). These allow predictions to be made about participants' reactions to music on the basis of structural properties of the music, and they might allow for the present findings to be applied to a range of other participant groups. In the meantime, the present research has provided an initial indication that music can influence helping behavior in an everyday environment.

APPENDIX MUSIC

UPLIFTING MUSIC

"Rockafellar Skank" by Fatboy Slim; "Dreams" by The Corrs; "Believe" by Cher; "Music Sounds Better With You" by Stardust; "Men in Black" by Will Smith; "Livia" la Vida Loca" by Ricky Martin; "One More Time" by Daft Punk; "Music" by Madonna; "Mambo No. 5" by Lou Bega; "Hey Boy Hey Girl" by Chemical Brothers; "Rock DJ" by Robbie Williams; "Waiting for Tonight" by Jennifer Lopez; "King of My Castle" by Wamdue Project; "It Feels So Good" by Sonique; "Sex Bomb" by Tom Jones; "Sandstorm" by Darude; "All the Small Things" by Blink 182; "Around the World" by Daft Punk; "S Club Party" by S Club 7; "Ray of Light" by Madonna; "Praise You" by Fat Boy Slim; "Rise" by Gabrielle; "The Time Is Now" by Moloko; "The Thong Song" by Sisqo; "Spice Up Your Life" by Spice Girls; "Gettin' Jiggy Wit It" by Will Smith; "Zombie Nation" by Kernkraft 400; "Reach" by S Club 7; "Toca's Miracle" by Fragma; "Sky" by Sonique.

ANNOYING MUSIC

"Clarinet Threads" by Denis Smalley; "Idle Chatter" by Paul Lansky; "Masque" by Jon Hassell; "Nscor" by Curtis Roads; "Ravinia/Vancouver" by Jon Hassell; "Relationships for Melody Instruments" by Clarence Barlow; "Sequence Symbols" by

James Dashow: "The Hands Movement 1" by Michael Waisvisz; "The Hands Movement 2" by Michael Waisvisz; "Transition No. 2" by Stephen Kaske.

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