

Chanting Meditation Improves Mood and Social Cohesion

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ABSTRACT

Chanting is a pervasive practice in almost every tradition all over the world. It has been found to improve attention and reduce depressive symptoms, stress and anxiety. The current study aimed to determine whether chanting “Om” for 10 minutes would improve attention, positive mood and increase feelings of social cohesion. The effects of vocal and silent chanting as a meditation practice were compared, as well as the effects of chanting for experienced and inexperienced chanters. It was hypothesized that vocal chanting would have a greater effect than silent chanting and experienced chanters would report stronger effects. Experienced and inexperienced chanters were randomly allocated to one of two conditions: vocal chanting or silent chanting. Prior to and following chanting, participants completed the *Digit-letter Substitution task*, the *Positive Affect Negative affect Schedule*, the *Multidimensional Measure of Empathy* and the *Adapted Self-Report Altruism Scale*. Following chanting participants also completed a *Social Connectedness Questionnaire* and a manipulation check. Results showed that positive affect and altruism increased more following vocal than silent chanting. Furthermore, whereas altruism increased following both vocal and silent chanting for experienced participants, it only increased following vocal chanting for inexperienced participants. No significant differences between vocal and silent conditions were observed for empathy, attention, or social connectedness. Overall, the results indicate that chanting has a positive effect on mood and social cognition. The findings are discussed in view of current understandings of the psychological and emotional effects of music and synchronization.

I. INTRODUCTION

Although chanting is a pervasive practice around the world, used in many traditions as a way of deepening spiritual awareness, there is very little understanding of the psychological, emotional and social implications of this widespread practice.

There are many different styles of chanting but all styles fall into two broad categories: vocalized and silent. Vocal chanting may be defined as the repetition of words or syllables that are either spoken or sung on the same note or a series of notes (Shearing, 2004). In contrast, “silent chanting” may be conceptualized as the repetition of imagined words or syllables in the absence of any vocalization.

As illustrated in Figure 1, vocal and silent chanting are forms of focused-attention (FA) meditation, a technique of concentration involving intense or prolonged focus on a single point (Bormann et al., 2006a). The most well known form of FA meditation is *mantra* meditation that involves focusing on the mental repetition of a specific sound or phrase, known as the *mantra* (Lutz et al., 2008; Bormann et al., 2014). Both vocal and silent chanting are forms of *mantra* meditation with the sound of phrase of concentration being the *mantra*.

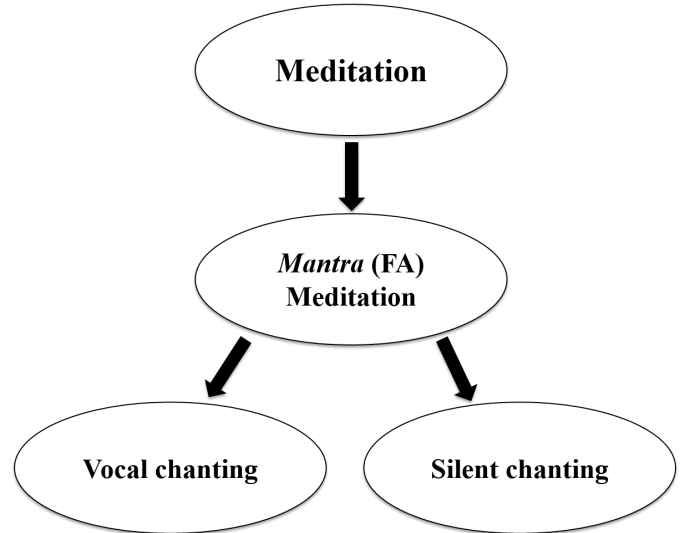


Figure 1. Chanting practices as a form of FA meditation.

Although a small body of research has identified some of the emotional and cognitive effects of chanting (Bernardi et al., 2001a; Kenny, Bernier & DeMartini, 2005; Pradhan & Derle, 2012; Wolf & Abell, 2003), no studies have compared the effects of silent and vocalized chanting, or the mediating effects of experience. The aim of the current study was to compare the effects of vocal and silent chanting on cognitive and affective states in both experienced and inexperienced chanters. Past research of explicit group synchronization has revealed that it leads to increased social cohesion (Valdesolo, Ouyang & DeSteno, 2010; Wiltermuth & Heath, 2009). Therefore, it is possible that explicit vocal chanting will enhance synchronization, such that the beneficial effects are stronger for this form of chanting than for silent chanting, which permits desynchronization given the absence of an explicit joint-action-task.

II. MATERIALS AND METHOD

A. Participants

The final analysis consisted of 45 inexperienced chanters (individuals who had chanted less than 5 times in total), consisting of 37 females and 8 males with ages ranging from 18 to 68 years ($M = 25.11$, $SD = 13.07$) and 27 experienced chanters (individuals engaging in chanting at least once a month for over 12 months), consisting of 13 females and 14 males with ages ranging from 18 to 68 years ($M = 38.22$, $SD = 14.31$). The inexperienced participants were recruited through the Macquarie University online participant pool or through social media. The experienced participants were recruited through social media and through a yoga studio. Participants recruited through Macquarie University were offered course credit for their participation. Members of the general public went into a draw to win 1 of 3 \$50 vouchers for a yoga studio.

B. Materials

Participants completed the *Digit-letter Substitution task* (DLST; Natu & Agarwal, 1995), the *Positive Affect Negative affect Schedule* (PANAS), the *Multidimensional Measure of Empathy* (MME; Davis, 1980), and the *Adapted Self-Report Altruism Scale* (SRA; Rushton, Chrisjohn & Fekken, 1981) prior to the experimental phase of the research. Following the experimental phase, participants completed the above measures again and also completed the *Social Connectedness Questionnaire* (SCQ) and the manipulation check. The experimental phase of the research involved listening to a recording of chanting, which was either chanted along with in the vocal condition, or listened to in the silent condition. This recording can be found at:

<https://www.youtube.com/watch?v=yoYrLM5rGX8&list=RDyoYrLM5rGX8#t=22>.

C. Procedure

Experienced and inexperienced participants were randomly assigned to one of two experimental conditions: vocal chanting or silent chanting. Participants were invited to sit on a chair or cross-legged on a cushion on the floor. They first completed a consent form after which they completed the DLST, PANAS, MME and SRA. They were then instructed to maintain a straight spine whether on a chair or on the floor, close their eyes and chant the sound “Om” for 10 minutes either vocally or silently, timed to coincide with a recording. The duration of each repetition was 10 seconds, as used in previous studies (Bernardi et al., 2001b). After 10 minutes of chanting, all participants completed the DLST, PANAS, MME, SRA, SCQ, and the manipulation check.

III. RESULTS

A. Assumptions of Normality

Variables were examined for their conformity to the assumptions of a two-way between subjects analysis of variance (ANOVA). Assumptions of normality were met for all variables with the exception of negative affect, which had a positive skew and was slightly leptokurtic. It was deemed unnecessary to remove outliers as the dependent variables were normally distributed. Furthermore, the two-way ANOVA is robust to small violations of assumptions of normality (Kenny & Judd, 1986). Levene’s tests were insignificant for all variables examined, indicating that homogeneity of variance was met. An alpha level of .05 was used for all significance tests.

B. Descriptive Statistics

The SCQ was completed post-chanting, and revealed that social connectedness was somewhat higher for experienced chanters in the silent condition, $M = 3.15$, $SD = 0.69$, than it was for experienced chanters in the vocal chanting condition, $M = 2.71$, $SD = 1.27$, inexperienced chanters in the silent condition, $M = 2.83$, $SD = 0.937$, or inexperienced chanters in the vocal condition, $M = 2.64$, $SD = 0.953$. For other measures, the mean and standard deviation of pre-chanting and post-chanting scores for each of the four conditions are displayed in Tables 1-4.

Table 1. Experienced participants’ scores before and after silent chanting (N = 13).

| Measure | Before M (SD) | After M (SD) | t | p |
|-------------------|---------------------|--------------------|--------|------|
| Attention** | 60.92 (11.93) | 65.23 (12.54) | -4.856 | .000 |
| Positive Affect | 32.23 (6.59) | 33.15 (9.13) | -0.746 | .470 |
| Negative Affect** | 18.54 (2.11) | 11.08 (1.55) | 11.910 | .000 |
| Altruism** | 50.92 (5.84) | 53.08 (4.48) | -3.742 | .003 |
| Empathy | 81.38 (7.43) | 82.77 (6.44) | -1.133 | .279 |

Note. Mean (M) and standard deviations (SD) (listed in parentheses) before and after chanting for measures of attention, positive affect, negative affect, altruism, and empathy. * $p < .05$, ** $p < .01$.

Table 2. Experienced participants’ scores before and after vocal chanting (N = 14).

| Measure | Before M (SD) | After M (SD) | t | p |
|-------------------|---------------------|--------------------|--------|------|
| Attention | 51.86 (14.72) | 54.86 (12.25) | -1.580 | .138 |
| Positive Affect | 30.57 (5.88) | 29.93 (5.81) | 0.374 | .714 |
| Negative Affect** | 20.00 (4.26) | 11.43 (2.98) | 7.569 | .000 |
| Altruism** | 50.07 (4.12) | 55.07 (5.08) | -4.746 | .000 |
| Empathy | 82.07 (6.73) | 82.57 (7.31) | -0.559 | .586 |

Note. Mean (M) and standard deviations (SD) (listed in parentheses) before and after chanting for measures of attention, positive affect, negative affect, altruism, and empathy. * $p < .05$, ** $p < .01$.

Table 3. Inexperienced participants’ scores before and after silent chanting (N = 23).

| Measure | Before M (SD) | After M (SD) | t | p |
|-------------------|---------------------|--------------------|--------|------|
| Attention** | 53.65 (12.83) | 58.52 (12.85) | -2.963 | .007 |
| Positive Affect* | 26.35 (7.74) | 23.43 (8.75) | 2.347 | .028 |
| Negative Affect** | 18.87 (4.98) | 11.26 (2.05) | 8.020 | .000 |
| Altruism | 49.52 (9.53) | 50.13 (9.02) | -0.984 | .336 |
| Empathy | 78.74 (7.00) | 78.43 (8.30) | 0.370 | .715 |

Note. Mean (M) and standard deviations (SD) (listed in parentheses) before and after chanting for measures of attention, positive affect, negative affect, altruism, and empathy. * $p < .05$, ** $p < .01$.

Table 4. Inexperienced participants’ scores before and after vocal chanting (N = 22).

| Measure | Before M (SD) | After M (SD) | t | p |
|-------------------|---------------------|--------------------|--------|------|
| Attention* | 59.91 (9.66) | 63.91 (12.31) | -2.202 | .039 |
| Positive Affect* | 29.91 (6.24) | 32.45 (8.77) | -2.096 | .048 |
| Negative Affect** | 19.23 (2.98) | 11.09 (1.74) | 14.347 | .000 |
| Altruism** | 47.55 (7.18) | 50.91 (8.54) | -3.108 | .005 |
| Empathy* | 79.27 (8.97) | 81.45 (11.23) | -2.577 | .018 |

Note. Mean (M) and standard deviations (SD) (listed in parentheses) before and after chanting for measures of attention, positive affect, negative affect, altruism, and empathy. * $p < .05$, ** $p < .01$.

IV. DISCUSSION

C. Analyses

Paired sample t-tests were used in order to examine the different effects of before and after chanting for each of the groups. Those measures that significantly increased or decreased following interventions are indicated in Table 1-4 by one ($p < 0.05$) or two ($p < 0.01$) asterisks. The change in score for attention, positive affect, negative affect and empathy were calculated by subtracting the 'pre score' from the 'post score', with the change in score used as the dependent variable. For example, the dependent variable for altruism was calculated by subtracting the pre-experiment altruism score from the post-experiment altruism score. As such, positive scores on the dependent variable represent a post-experiment increase in that variable, whereas a negative score represents a decrease in the variable. For each dependent variable a two-way ANOVA was carried out using the independent variables of engagement and experience.

D. Positive Affect

A two-way ANOVA using the mean difference of scores showed a significant interaction between type of chanting and amount of experience on positive affect, $F(3, 68) = 6.320$, $p = .014$, $\eta_p^2 = .085$. Positive affect increased more in the vocal chanting condition ($M = 1.00$, $SD = 1.00$) compared with the silent chanting condition ($M = 0.95$, $SD = 0.98$) and inexperienced chanters in the vocal condition ($M = 2.55$, $SD = 1.22$) showed a greater increase in positive affect than experienced chanters in the vocal condition ($M = -0.65$, $SD = 1.53$).

Post Hoc comparisons were conducted using Bonferroni adjusted alpha level of 0.025. These comparisons revealed that inexperienced chanters showed a significant overall increase in positive affect ($p = 0.003$) whereas experienced chanters showed no significant increase. Furthermore inexperienced chanters only showed a significant increase in positive affect for the vocal chanting condition ($M = 2.55$, $SD = 5.70$) and not the silent chanting condition ($M = -2.91$, $SD = 5.95$).

E. Altruism

A two-way ANOVA, using the mean difference scores showed a significant overall effect of type of chanting on altruism, $F(3,68) = 9.097$, $p = .004$, $\eta_p^2 = .118$. Altruism increased to a greater extent following vocal chanting ($M = 4.18$, $SD = 0.65$) than silent chanting ($M = 1.38$, $SD = 0.66$). Chanting experience did not significantly affect altruism, $F(3,68) = 2.935$, $p = .091$, $\eta_p^2 = .041$ and there was no significant interaction between level of experience and type of chanting on altruism $F(3,68) = 0.002$, $p = .961$, $\eta_p^2 = .000$.

F. Manipulation Check

To determine whether participants were chanting in both conditions, a manipulation check was conducted by measuring how much participants felt they *engaged* in the practice. The results of a two-way ANOVA revealed significantly higher scores in the vocal chanting compared with the silent chanting $F(3,68) = 31.451$, $p = .007$, $\eta_p^2 = .101$. Also, engagement scores were significantly higher for experienced chanters than for inexperienced chanters $F(3, 68) = 7.634$, $p = < .001$, $\eta_p^2 = .316$.

Consistent with previous research, chanting increased positive mood, decreased negative mood and improved attention. Furthermore, altruism increased more following vocal chanting than silent chanting, suggesting that an explicit joint-action activity is more effective at creating feelings of social connectedness than a silent group activity. These findings indicate that chanting not only has a positive effect on mood and cognition; it also has the ability to improve feelings of social connectedness. Table 5 provides a synopsis of the significant increases and decreases of each variable following vocal and silent chanting. Significant benefits were observed in all four participant groups, but it is especially striking to note that *inexperienced* chanters exhibited significant benefits following vocal chanting in all five measures of mood and social cohesion. Although the source of these effects has yet to be determined, Figure 2 illustrates some hypothetical mechanisms underlying these benefits.

Table 5. Significant increases and decreases of measures for experienced and inexperienced participants following silent and vocal chanting conditions.

| | Attention | Positive Affect | Negative Affect | Altruism | Empathy |
|-------------------------|-----------|-----------------|-----------------|----------|---------|
| Experienced Silent | ↑ | - | ↓ | ↑ | - |
| Experienced Vocal | - | - | ↓ | ↑ | - |
| Inexperienced Silent | ↑ | ↓ | ↓ | - | - |
| Inexperienced Vocal | ↑ | ↑ | ↓ | ↑ | ↑ |

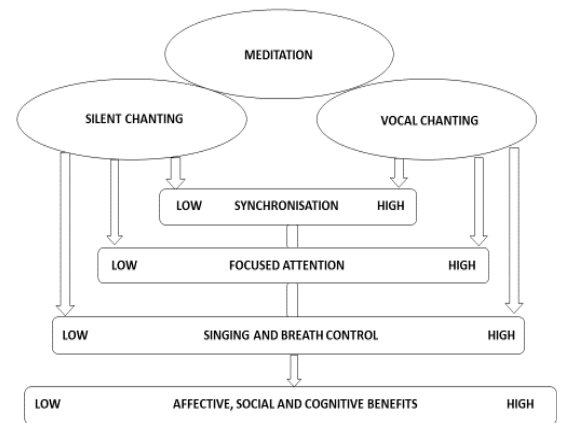


Figure 2. Factors associated with the benefits of chanting.

V. CONCLUSION

Chanting is a pervasive practice that has been part of human behaviour for thousands of years, yet the emotional and cognitive effects of chanting are not well understood. The results of this investigation demonstrate that the benefits of vocal chanting may be mediated by three factors: group synchronization, which increases feelings of social cohesion; physiological changes (breath control and singing), which may contribute to increased positive mood; and focused attention, which may inhibit ruminative thinking and lead to increased positive mood.

As one of the first studies to systematically investigate the benefits of chanting, the current study provides a basis for

future research on the emotional, social, and cognitive benefits of this pervasive human activity. As revealed by this investigation, chanting has emotional and social benefits for both experienced and inexperienced individuals, and these benefits can be observed following either vocal or silent chanting. The extent of these benefits was dependent on the type of chanting meditation and the experience of participants, with inexperienced participants who engaged in vocal chanting reaping the greatest number of significant benefits. Such results are encouraging, and suggest that chanting may be an effective tool for enhancing mood and creating a sense of social cohesion. These benefits, in turn, may be associated with increased health and wellbeing.

ACKNOWLEDGMENTS

This research was supported by an Australian Research Council Discovery Grant DP130101084 awarded to WFT and by a fellowship awarded to VP by the Australian Research Council Centre of Excellence in Cognition and its Disorders.

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