A New Test of Music Mood Induction and Mood Congruent Memory

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Background

Mood-Congruent Memory (MCM) is defined as the observation that a given mood tends to enhance the encoding or retrieval of target events that are similar in valence or mood. Mood induction has been used to study MCM in the lab. Two common methods are the Velten Mood Induction Procedure (VMIP) and the Music Mood Induction Technique (MMIT).

A potential problem with VMIP is it may lead to demand characteristics because subjects are explicitly told to feel a certain way. With MMIT, there is currently controversy over whether the music (melody), the lyrics, or their combination are most effective at mood induction. However, not all combinations have been systematically tested (Table 1). Further, previous research has either used pre-existing songs, which decreased control over the variables, or the music and the lyrics were presented to separate modalities (listen to music and read lyrics).

Table 1: Possible Combinations of Music and Lyrics

	Combination Condition	Music	Lyrics
*/**	NM/NL	None	None
**	NM/HL	None	Happy
	NM/SL	None	Sad
*	HM/NL	Happy	None
**	HM/HL	Happy	Happy
	HM/SL	Happy	Sad
*	SM/NL	Sad	None
	SM/HL	Sad	Happy
	SM/SL	Sad	Sad

Note. Conditions not tested by Sousou (1997)* or by Stratton and Zalanowski (1994) **

Assuming mood can successfully be induced, will participants show MCM? Although many researchers have investigated this question, Teasdale and Russell (1983) are often cited. They used VMIP, and they found strong evidence of MCM using valenced personality trait words. However, demand characteristics may have occurred due to the obvious nature of the manipulation, and further, they did not use a standardized mood measure.

The current experiment aimed to address some of the shortcomings of these previous studies.

Objectives of the Current Experiment

Experiment 1: Create and test a new music mood induction technique that made use of classical music (professionally categorized selections taken from Sousou, 1997) with embedded song lyrics (Velten's (1968) mood-induction statements as adapted by Teasdale & Russell, 1983). However, unlike previous attempts to study musical-mood induction, all nine possible combinations of Music and Lyrics were used. (Refer to Table 1.)

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Further, unlike any previous mood induction studies, the duration of the induced mood was assessed by measuring the size of the mood change across three time periods. Additionally, mood was assessed using the standardized MAACL- R State Test.

Experiment 2: Using the most effective mood manipulation conditions from Experiment 1, determine how mood influenced memory, specifically the recognition of valenced material (personality trait words from Teasdale & Russell, 1983). Determine if the same versus different encoding and retrieval modalities influences recognition.

Experiment 1:

Methods

- 3 Music conditions (Happy Music, Sad Music, and No Music) x 3 Lyric conditions (Happy Lyrics, Sad Lyrics, and No Lyrics) x 3 Reflection-time periods, (0 min., 5 min., and 10 min.)
- Mozart's "Eine Kleine Nachtmusik" and Barber's "Adagio for Strings" represented the Happy Music and Sad Music, respectively selections rated by professional musicians and used by Sousou, 1997).
- Song lyrics taken from the mood-inducing statements used by Teasdale and Russell (1983).
- Music and lyrics combined professionally. Mood measured using MAACL-R state test.
- Procedure: test mood, listen to mood-inducing stimulus, test mood, reflect on mood for 5 minutes, repeat.

Results

- No mood induction conditions significantly increased Positive Affect (PA), but there was a trend for Happy Music to do so; Sad Music and Sad Lyrics significantly decreased PA.
- There were significant increases in Negative Affect (NA). The combination of Sad Music / Sad Lyrics led to the largest increase; The combination of Happy Music / Happy Lyrics led to smallest increase. For the incongruent combinations, lyrics were more powerful than music.
- As time increased PA decreased; NA showed maximum increase at 5 minutes, and decreased slightly after that.

Conclusions

- We observed a general decrease in PA over time, possibly due to the testing procedure (boredom). There was a significant increase in NA at the 5 minute interval, possibly due to a combination of the testing procedure and mood induction. Lyrics were more influential than music.
- It is possible that our participants (traditional college students) did not interpret the music as strongly happy or sad as the professional musicians. Future work should investigate and use music that the targeted group finds happy/sad.
- Researchers using mood induction should carefully assess whether or not mood is being manipulated, and should assume that the manipulation most likely is transient.

Experiment 2:

Methods

- 3 Mood Induction conditions (Happy, Sad, and none) x 2 personality trait word presentation conditions (visual and auditory) x 3 personality trait word valence conditions (positive, negative, and neutral).
- Auditory presentation: trait words professionally combined with music and inserted between lyrics.
- Visual presentation: use same timing as auditory presentation, participants shown words using a powerpoint presentation.
- Memory tested using recognition: participants circled target words that were imbedded in a list of matched decoy words.
- Procedure: test mood, mood manipulation & trait word presentation, reflect on mood 5 min, test mood, take memory test.

Results

- Memory scores showed a significant interaction between mood induction condition and target word valence: There were MCM trends for the sad and the control conditions.
- Visually presented words were better recognized, especially for the control condition.
- Mood analyses suggest only the sad mood was successfully induced.
- Analyses using measured (actual) mood rather than manipulated mood condition also showed MCM for the sad but not the happy participant moods.

Conclusions

- MCM supported for sad mood induction and control group. Thus, only partial replication MCM as found by Teasdale and Russell (1983).
- Same modality for target word presentation and recall (visual) is advantageous for recognition.
- As found by Sousou (1997), the control group performed best, possibly due to lack of interference from mood induction.
- Happy moods may be especially hard to induce experimentally, especially when participants know they will be given a memory test.
- MCM may be more successful if induction and items-to-be-remembered were more personally relevant to the participants.