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Do Different Mood Scales Moderate Theinfluence of Moods in Attitude Judgments?

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Abstract— **Aim: This study aimed to examine whether or not mood scales would moderate the influence of moods on attitude judgments.**

Method: A 2 (mood scales: single vs. multiple) x 2 (moods: positive vs. negative) x 2 (arguments: strong vs. weak) between-subject factorial design was used and 88 undergraduate students were recruited to participate in the study.

Results: The results of this study supported the expectation that different types of mood scales would moderate the influence of moods on attitude judgments.

Conclusion: Cognitive overload and moods as information perspectives may explain the different results. Future studies may consider using different mood manipulation methods or different mood measurements to further examine the issue.

Keywords: moods; attitude judgements; mood scales

I. INTRODUCTION

Attitude is defined as a construct that contains cognitive, behavioral and affective components [1], but due to the influence of research paradigms, most theories of attitude are based on the cognitive or behavioral approaches [2] and the influence of affects on attitudes only began to draw the attention of social psychologists following the works of Worth and Mackie [3]. A series of their studies which employed the elaboration likelihood model found that participants with positive moods used a peripheral route to process information [3-6], and participants with negative moods used a central route to process information [7]. Social psychologists have adopted two perspectives to explain these results, which are cognitive overload and the mood-as-information perspective [7],[8].

This study aimed to examine whether mood scales would moderate the influence of mood on attitude judgments. A multiple-item scale is more reliable than a single-item scale [9], and therefore more effective than a single-item mood scale in understanding the nature or the construct of mood. However, multiple-item and single-item mood scales may create different effects in the context of information processing. Based on the view that moods can be understood as grounds or that moods can shift into or out of attention [10], it is expected that, as participants need to concentrate more on their feelings while filling in a multiple-item mood scale than while filling in a single-item mood scale, the cognitive working space of those participants who filled in the former would be overloaded to a greater extent by their mood-related elements than those participants who filled in the latter.

Nonetheless, from a mood-as-information perspective, different types of mood scales should not cause different results. Therefore, it is expected that participants in the positive mood condition will use the peripheral route to process information, as being in a positive mood signals that the situation is safe. Conversely, participants in the negative mood condition will use the central route to process information, as being in a negative mood signals that the situation is problematic and that more information is required before judgments can be made.

II. METHOD

A. Participants and design

A total of 88 undergraduate first year psychology students at Universiti Tunku Abdul Rahman in Malaysia participated in this study. A five ringgit token was given to them after they had completed the study. A block randomization method was used to assign the participants to one of the conditions of the 2 (mood scales: single vs. multiple) x 2 (argument: strong vs. weak) x 2 (mood: positive vs. negative) between-subject factorial design.

B. Procedure

On arrival at the lab, the participants were asked to read and sign an informed consent form. They were then asked to watch a three-minute new age music video, the aim of which was to reduce individual differences in terms of the initial mood and to maximize the effectiveness of the mood manipulation process afterwards. After watching the video, they were asked to fill in either a single or a multiple mood scale (PANAS: positive and negative affect schedule), which depended on the conditions (single vs. multiple-item mood scale) that they were assigned to.

C. Independent variables

- *Mood manipulation*. Next, the participants watched either a positive or a negative 10-minute video, the aim of which was to manipulate their mood states. The effectiveness of the videos in terms of mood manipulation had been examined in a pre-test, which showed that the participants who watched the positive video reported having a more positive mood (M = 3.68, SD = 1.95) than those who watched the negative video (M = 2.28, SD = 0.72), t (12.675) = 2.22, p = 0.03.

- *Mood scales*. Following the mood manipulation process, all of the participants had to fill in another single or multiple-item mood scale, according to the condition that they were assigned to. The single-item mood scale was a seven-point item with a sad face at the left end and a smiling face at the right end. The PANAS contained 20 adjectives, and the participants were asked to fill in a number next to each adjective to indicate their feelings at the moment [11].
- *Arguments.* After filling in the mood scales, the participants were asked to read either a strong or a weakly worded message. Both messages were entitled 'Plastic water tumblers should be abolished', and contained five arguments of approximately similar length. Both the strong and the weak arguments advocated the same conclusion. Pre-testing revealed that the strong arguments were seen as more persuasive (M = 5.52, SD = 0.86) than the weak ones (M = 3.02, SD = 1.44) when rated on a seven-point scale ranging from 'disagree' to 'agree': t (19) = 8.93, $p < 0.05$.

D. Dependent variables

- *Attitude judgment.* The participants were asked to indicate the extent to which they agreed that the water tumbler should be abolished by circling a number on a seven-point rating scale, on which 1 was 'disagree' and 7 was 'agree'.
- *Cognitive responses*. The participants were then given two minutes in which to list 'all of the thoughts that came to mind while reading the message about abolishing plastic water tumblers'. The participants were provided with a sheet of paper divided into 15 boxes and were instructed to list only one thought per box and not to worry about grammar or spelling. The participants were asked to write as many thoughts as they could. After completing this section, two judges were asked to indicate whether or not each thought that the participants had listed was favorable (supportive of abolishing plastic water tumblers), unfavorable (opposed to abolishing plastic water tumblers), neutral (related to the issue but not expressing support or objection), or unrelated thoughts (unrelated to the issue).
- *Recall of message content.* The participants were given two minutes in which to write down any and all of the arguments which had been presented that they could remember.
- *Manipulation checks.* Finally, the participants were asked to report how they felt about the persuasiveness of the argument, how much mental effort they had invested in reading the arguments, whether they had enough time to read the arguments and whether they understood the argument, and whether or not they had followed the instructions.

III. RESULTS

A. Effectiveness of mood manipulations

The effectiveness of the mood manipulation process was examined using the planned comparison method. The PANAS were converted to seven points that were similar to those on the single-item mood scale.

B. Moods after the neutralize task.

After watching the new age music video, the results of the ANOVA did not reveal any significant differences in the moods of those who had filled in the single and PANAS mood scales: F (2, 123) = 1.034, p = 0.359. These results indicated the success of manipulation in reducing individual differences in terms of initial mood.

C. Mood after mood manipulation.

Planned comparisons were launched in order to examine the effectiveness of the mood manipulation process among three different mood-scale conditions. The results of an independent t-test revealed that the moods of those participants who watched a positive mood video were better than the moods of those who watched a negative mood video in all of the mood-scale conditions: t (41) = 13.47 for the single-item condition and t (43) = 10.385 for PANAS, $p <$ 0.05 for both. These results indicate the success of the mood manipulation process.

D. Attitude.

Planned comparisons were used to examine the feelings of the participants towards the abolition of water tumblers. The results of the independent t-tests showed that, among the participants in the positive mood condition, only those who filled in the single-item mood scale agreed more strongly with the strong argument than the weak one: t(14.99) = 3.21, p = 0.003, one-tailed. However, no such significant difference was found for those who filled in the PANAS: t (23) = 1.324, p = 0.099, one-tailed. However, similar significant differences were found for all of the participants in the negative mood condition, regardless of the types of mood-scale they filled in: t(20) = 3.31, p = 0.002 for single-item scale and t (18) =1.88, p = 0.038 for PANAS, all one-tailed (see Table 1).

E. Path analysis.

In order to examine whether or not the different mood scales would moderate the influence of moods on attitude judgments, path analyses were launched using the Structural Equation Modeling (SEM) program. It can be seen from Fig 1 and Fig 2 that the different mood scales did indeed moderate the influence of mood on attitude judgments. In Fig 1, attitude judgment of the participants in positive mood conditions was directly influenced by cognitive responses only when the single-item mood scale was used, and attitude judgment was neither influenced by cognitive responses nor positive moods when the PANAS mood scale was used. These results were in line with the results for attitudes (see Table 1) which showed that the participants in the positive mood condition who filled in the single-item mood scales

used a central route to process information, and that the participants in the positive mood condition who filled in the multiple-item mood scales (PANAS) would not use a central route to process information. The results in Fig 2 showed that attitude judgment of the participants in negative mood condition was influenced by cognitive responses when the single-item or PANAS mood scales were used. These results were also in line with the results of the planned comparisons which showed that the participants in the negative mood condition would use a central route to process information, regardless of the types of mood scales they filled in.

IV. Discussion

The main aim of this study was to examine whether or not different mood scales would moderate the influence of moods on attitude judgment. The results showed that participants in the positive mood condition who filled in the single-item mood scale employed the central route but those who filled in the multiple-item mood scales employed a peripheral route to process information. These results met the researchers' expectations in terms of the cognitive overload perspective. However, the results showed that participants in the negative mood condition employed the central route to process information, regardless of the types of mood scales that they filled in. These results met the researchers' expectation in terms of the mood-as-information perspective. The results of path analyses provided further support for the findings outlined above.

In conclusion, the results of this study support the expectation that different types of mood scales would moderate the influence of moods on attitude judgments, and that positive and negative moods may involve different mechanisms. Future studies may consider using different methods of mood manipulation or different mood measurements in order to examine the external validity of this study.

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TABLE I. Planned Comparisons of Participants' Attitudes toward the Arguments by Moods, Argument Quality, and Mood-Scales

Moods	Argument quality	Mood scales	
		Single	PANAS
Positive	Strong	5.80_{a} (1.03)	5.57 (1.34)
	Weak	3.55_{a}(2.07)	4.73 (1.85)
Negative	Strong	5.78_{b} (1.21)	$5.67\ (1.07)_{d}$
	Weak	3.54_{b} (1.76)	$4.62\ (1.41)_{d}$

Note: a similar subscript indicates significant different attitudes toward the strong and weak arguments

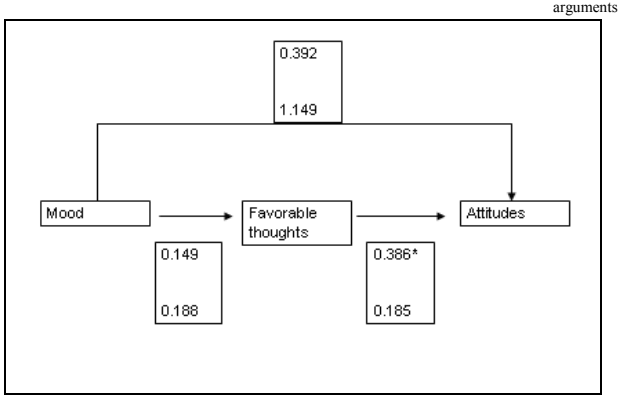

Figure 1. The effects of mood scales on the influence of positive moods in attitude judgments (the first path coefficient refers to analyses with the single-item mood scale. The second path coefficient refers to analyses with PANAS. * $p < 0.05$.)

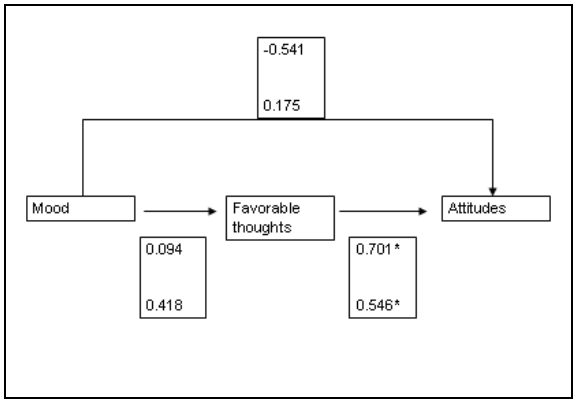

Figure 2. The effects of mood scales on the influence of negative moods in attitude judgments (the first path coefficient refers to analyses with the single-item mood scale. The second path coefficient refers to analyses with PANAS. * $p < 0.05$.)