

The Effects and Implications of Mood on Moral Judgements

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ABSTRACT

Vladimir A. Lefebvre [1, 2] proposed an algebraic model of self-reflection that predicts individuals will judge ambiguous stimuli positively with a proportional frequency of .618. While a number of studies have empirically supported this prediction [3, 4], Anderson and colleagues [5] found only partial support for Lefebvre's model. They moreover suggested that Schwartz and Garmoni's States of Mind (SOM; [7]) model could potentially explain the disparate findings as well as the variability of positive judgements seen across individuals. Consequently, this study explored whether ratios of psychological functioning posited by the SOM model correspond with proportions of positive judgements of ambiguous stimuli (viz., pairs of pinto beans). Results revealed that, while Lefebvre's predicted proportion of positive judgments was again replicated, individuals with relatively high positive affect were not more likely to rate greater proportions of the ambiguous stimuli positively.

Keywords: Judgements, Self-Reflection, Mood, States of Mind, Psychological Functioning

INTRODUCTION

Vladimir A. Lefebvre [1, 2] proposed an algebraic model of conscious reflection that explains how individuals view themselves, others, and the world. His model more specifically posits that each person has an internal 'computer' that regulates the evaluative processes involved in dichotomous choice tasks. When applied to judgments of ambiguous stimuli, Lefebvre's model predicts that people will judge such stimuli as 'good' (positive) for 61.8% of the choices and 'bad' (negative) for the remaining 38.2% of choices. Empirical support for this particular prediction has been published in a number of studies in which participants were asked to evaluate pairs of ambiguous stimuli (e.g., pinto beans, tiles, wooden balls) as 'good' or 'bad' [3,4]. Anderson and colleagues [5], however, found only partial support for Lefebvre's model and suggested in their conclusions that the States of Mind (SOM, [6]) model could be used to account for the inconsistent results. They moreover suggested that the SOM model could potentially explain the variability in participants' proportions of 'good' judgments, as individual proportions ranged in value from .14 to 1.0 across different stimuli.

In their original explication of the SOM model Schwartz and Garamoni [7] argued that a functionally optimal state of mind consists of a ratio of positive (P) and negative (N) cognitions and/or affects that approximates the golden proportion of .618 when computed as $P/(P+N)$. Using Lefebvre's

algebraic model, Schwartz [6] later revised this optimal balance point to .813 and moreover created ranges of values to delineate eleven different levels of psychological functioning (e.g., optimal range = .78 - .84). Successful clinical interventions were shown by Schwartz and his colleagues to result in individuals moving from sub-optimal to optimal states of psychological functioning [6-8]. Most recently, Schwartz and Grice [9] revised the ranges of psychological functioning and reduced the number of levels from eleven down to seven (see Table 1).

Table 1: Categorizations of Positive Ratio Ranges and the Corresponding SOM categories

SOM category	Category range
Extreme Positive	.901 – 1.00
Deep Optimal	.845 – .900
Optimal	.767 – .844
Normal	.673 – .766
Subnormal/Coping	.564 – .672
Conflicted	.438 – .563
Extreme Negative	.000 – .437

Following the suggestion of Anderson and colleagues [5], will these different levels of psychological functioning correspond to varying proportions of 'good' judgments of ambiguous stimuli? For example, will individuals in a negative state of mind tend to judge ambiguous stimuli negatively? The primary purpose of this study was to answer these questions while also attempting yet another replication of Lefebvre's original prediction regarding aggregate judgments of ambiguous stimuli. The seven levels of functioning for the SOM model were assessed using ratios of positive and negative ratings from the Positive and Negative Affect Schedule, and pairs of pinto beans were again used as the ambiguous stimuli to be judged as 'good' or 'bad.' Individual P/(P+N) ratios from the PANAS were then compared to the proportions of beans judged as 'good.'

METHOD

Participants

The current study included 111 undergraduate students (30 men, 81 women; 18 to 24 years of age, $M = 18.82$, $SD = 1.25$) who were given course credit for their participation. The majority of participants identified their ethnicity as Caucasian ($n = 86$), with the remaining participants identifying as African American ($n = 7$), multi-racial ($n = 8$), Hispanic/Latinx ($n = 5$), Native American ($n = 3$), Asian American ($n = 1$), and other ($n = 1$).

Materials

Research assistants sorted 100 pinto beans into 50 pairs and eliminated any bean with a visible defect or marking (e.g., discoloration, crack, disproportionate size, etc.) that might skew the participants' ambiguous judgments. Each of the 50 pairs was then placed in a separate clear, small, plastic bag, similar to those used by coin collectors, to allow participants to easily inspect and judge each pair.

Positive and Negative Affect Scale (PANAS).

The Positive and Negative Affect Scale (PANAS; see [10]) is a 20-item self-report inventory that assesses the current feelings and emotions (mood) of each participant. The PANAS contains two subscales, with 10 items in each subscale: Positive Affect ($\alpha = 0.87$) and Negative Affect ($\alpha = 0.75$). Participants are instructed to rate their current feelings (e.g., distressed, guilty, strong) on each item

from 1 (very slightly or not at all) to 5 (extremely). As recommended by Schwartz and Garamoni [11], the responses were recoded to range from 0 (very slightly or not at all) to 4 (extremely).

Procedures

Participants signed an informed consent form and then completed a basic demographic questionnaire that assessed age, ethnicity, and biological sex. Upon completion of the demographic questionnaire participants were seated at a desk with a tray of pinto beans and two brown bags labeled '+' and '-' indicating good and bad, respectively. To control for potential bag placement confounds (e.g., handedness), the bag positions were alternated so that for approximately half of the participants the '+' bag was placed to the left of the '-' bag. In line with past research, participants were asked to judge the 50 pairs of pinto beans as 'good' or 'bad' based upon their own reasoning [3-5]. Pairs of beans that were judged as good were placed by the participant into the brown bag labeled '+' whereas pairs of beans that were deemed bad were placed into the '-' bag. To control for potential questionnaire variation confounds, approximately half of the participants completed the PANAS after the bean sorting task, while the remaining participants completed the PANAS prior to the sorting task.

RESULTS

Seven participants were excluded from the analyses because they violated the given instructions (e.g., they placed all beans into one of the bags without evaluating each individual pair). Consistent with prior research [2, 4-5], analyses of the remaining responses indicated that, on average, participants judged the pairs of beans as 'good' ($M = 30.91$, $SD = 8.03$) more frequently than 'bad', $M = 19.07$, $SD = 8.03$. The mean proportion of beans judged as good was found to be consistent with Lefebvre's model ($M = .618$, $min = .30$, $max = 1.00$, $SD = .16$). A two-tailed single-sample t -test revealed that, as predicted, participants' good bean judgement proportion did not differ from the theoretically derived proportion (viz., $31/50 = .62$; see [1]), $t_{0.62} = -.11$. The 95% confidence interval [0.52, 0.71] moreover excluded the mean proportion expected from chance judgments of the pairs of beans (viz., $25/50 = .50$).

The positive and negative PANAS scale scores were used to compute the $P/(P+N)$ affect ratios for the participants, with one case being list-wise deleted due to the participants' missing data. The resulting values produced a negatively skewed distribution with a mean equal to 0.87 ($mdn = 0.89$, $min = .07$, $max = 1.00$) and standard deviation equal to .15. The ratios were then classified into the SOM model's seven categories of psychological functioning reported in Table 1. The proportions of beans judged as 'good' were similarly divided into seven categories comprised of ranges of values. This latter categorization was done solely for the sake of comparing the two variables in a simple manner, as shown in Figure 1. As can be seen, and contrary to expectation, the relationship between the $P/(P+N)$ ratio and bean proportion variables was in no way linear or otherwise systematic.

A majority of the $P/(P+N)$ ratios ($n = 71$, 68%) were observed in the 'extreme positive' and 'deep optimal' ranges, whereas the proportions for the beans were less varied and concentrated in the .42 - .55 and .56 - .69 ranges, $n = 71$, 68%. The median proportions of beans judged as 'good' for each of the seven SOM model categories are also reported in Figure 1, and as can be seen the values ranged from .54 to .60 (excluding the 'conflicted' category with $n = 1$). Contrary to expectation, the medians did not decrease monotonically from the 'extreme positive' to the 'extreme negative' levels of psychological functioning, although the largest value ($mdn = .60$) was observed for the highest level.

Finally, the Pearson ($r = .18$) and rank-order ($\rho = .25$) correlations between the ratios from the PANAS and the proportions of beans judged as 'good' were very low, consistent with the lack of a discernable relationship between the variables in Figure 1.

		Good Beans Proportion							Mdn
		0.00 : 0.13	0.14 : 0.27	0.28 : 0.41	0.42 : 0.55	0.56 : 0.69	0.70 : 0.83	0.84 : 1.00	
P/P+ N Recoded ratio	Extreme Positive (.901, 1)			2	10	19	7	9	.60
	Deep Optimal (.845, .900)			1	10	9	3	1	.54
	Optimal (.767, .844)			2	6	3	3	1	.56
	Normal (.673, .766)			1	4	3	1		.54
	Subnormal/Coping (.564, .672)				1	2		1	.58
	Conflicted (.438, .563)					1			.64
	Extreme Negative (0, .437)				2	1			.54

Figure 1. Ratios from the PANAS and proportions of beans judged as 'good.'

DISCUSSION

The results of our attempted replication of Lefebvre's [1] prediction regarding ambiguous stimuli was successful. The mean proportion of pairs of beans that were judged as 'good' was equal to .618, matching the predicted value to three decimals of precision. This study therefore adds to the work of Anderson and Grice [4] and Anderson and colleagues [5] in offering support for this particular prediction of Lefebvre's algebraic model of conscious reflection as it pertains to ambiguous stimuli. As with previous studies, however, individuals varied in their proportions of bean pairs judged as 'good.' The proportions ranged in value from .30 to 1.0, and it was only in the aggregate that the predicted .618 value was found. This variation is in need of explanation as Lefebvre's model is most applicable to predictions about individuals, which is to say that his model is primarily person-centered.

Schwartz and his colleagues [6-8] showed that ratios of positive cognitions or emotions changed over the course of therapy in a manner consistent with predictions made from Lefebvre's model. Exploring the possibility of mood as a moderator of the proportion of beans judged as 'good,' we administered the PANAS to the participants in our study to assess positive (P) and negative (N) states of mind. The computed ratio of positive cognitions or affects, $P/(P+N)$, was compared to the proportion of beans judged as 'good,' and contrary to expectation the two variables were not related in any systematic fashion. More specifically, individuals with relatively high positive affect were not more likely to judge greater proportions of the ambiguous stimuli (i.e., the pairs of beans) positively. Why the prediction from Lefebvre's algebraic model of conscious reflection only holds in the aggregate for judgments of ambiguous stimuli is still unexplained. Across several studies aggregated responses of individuals' judgments demonstrated an asymmetry in which ambiguous stimuli were judged as 'good' with a proportional frequency of approximately .618. Similar asymmetry can be found in individuals' self-reflective judgments of their cognitions and emotions, and Lefebvre's

model offers one possible explanation for this asymmetry as well [9]. Judgments regarding oneself, however, are distinct from judgments regarding ambiguous stimuli. While Lefebvre's model is flexible enough to be applied to such varying cognitive tasks as completing the PANAS and judging pinto beans as 'good' or 'bad,' the underlying processes involved in their completion may be largely independent. If this is the case, then the two variables compared above would also not be expected to correlate. Assessing the $P/(P+N)$ ratio using self-report measures is also fraught with difficulties (see [11]), and other questionnaires and inventories should be explored. Further work on such methodological issues, as well as the nuances of Lefebvre's model, are clearly needed to gain a clearer picture of the relationship between psychological functioning and ambiguous choice tasks.

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