

# Extraversion-introversion and the effects of favorability and set size on impression formation

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In an impression formation task extraverts ( $n = 20$ ) and introverts ( $n = 20$ ) were asked to rate the likability of target persons described by varying numbers of favorable or unfavorable traits. The extraverts rated target persons described by favorable traits as more likable ( $p < .05$ ) and target persons described by unfavorable traits as less likable ( $p < .05$ ) than did the introverts. These findings support the hypothesis that the differences in social responsiveness between the extravert and the introvert are a product of two processes. First, the extravert, because of his stronger need for stimulation, is more likely than the introvert to interact with other persons. Second, as a result of this interaction the extravert learns to be more responsive to both the positive and negative reinforcement potential of other persons.

Eysenck (1967) has postulated that extraverts are characterized by strong stimulus hunger. This stimulus hunger is a consequence of the extravert's chronic low level of arousal which results in performance differences in the favor of introverts on vigilance tasks (Bakan, Belton, & Toth, 1963), sensory threshold tasks (Haslam, cited in Eysenck, 1967), formation of conditioned responses (Jawanda, cited in Eysenck, 1967), and learning tasks (McLaughlin & Eysenck, 1967). This stimulus hunger is also hypothesized to characterize the extravert's approaches to social behavior. As Eysenck writes: "most stimulation is mediated by other people, and this would be expected to lead to extraverts (a) seeking out other people in order to receive this stimulation and (b) being conditioned through reinforcement to continue ever more strongly to indulge in this type behavior (1967, p. 163)." Some empirical support for these notions has been generated. For example, it has been demonstrated that extraverts spend more time looking (Mobbs, 1968) and look more frequently at their partner than do introverts (Rutter, Morley, & Graham, 1972; Kendon & Cook, 1968). Since eye contact is associated with increases in arousal (Nichols & Champness, 1971), these differences in frequency and duration of eye contact are interpretable as differences in preferences for stimulation.

In the present experiment, introverts and extraverts were shown descriptions of target persons made up of varying numbers of favorable or unfavorable prescaled personality traits (Anderson, 1968) and were asked to rate how likable they would expect each person to be. When another person is described by favorable traits both (a) the assumption that others provide stimulation for the stimulus hungry extravert and (b) the assumption

that the extravert learns through reinforcement to be gregarious (Eysenck, 1967) lead to the prediction that the extravert would rate others as being more likable than would the introvert. It may also be hypothesized from the stimulus hunger assumption that the extravert would rate another person described by unfavorable traits as more likable than would the introvert. That is, any person, whether described by favorable or unfavorable traits, may be rated as more likable by the stimulus hungry extravert. There is some evidence from research using nonsocial stimuli which supports the prediction that extraverts respond more favorably to aversive stimulation than do introverts. For example, Lynn and Eysenck (1961) found that extraverts could tolerate more pain than introverts, indicating that a given level of painful stimulation is judged to be less painful by the extravert than by the introvert. Whether these findings also hold for social stimuli is open to question. It could also be argued that since the extravert avails himself of more opportunities for interaction with people he may have learned to be more responsive to both the positive and negative reinforcement potential of others. As a result the extravert may rate people described by negative traits as less likable than does the introvert. The number of favorable and unfavorable traits was varied to determine if the obtained effects generalized across various set sizes.

## METHOD

### Subjects

The 80 subjects who participated in this research were students in an introductory psychology course at the University of Missouri-Columbia.

### Procedure

**Stimulus selection.** Anderson's (1968) list of 555 trait words was divided into five equal intervals with 111 words in each interval. Two replications of stimulus sets of one, two, three, and

This paper is sponsored by Russell G. Green, who takes full editorial responsibility for the contents. David Stonner is now at Oakland University, Rochester, Michigan 48063.

six traits were randomly chosen from the most favorable interval and the most unfavorable interval. Four additional sets of stimuli, one favorable trait, one unfavorable trait, a set of six favorable traits, and a set of six unfavorable traits, were randomly chosen from the most favorable and least favorable intervals to serve as anchors. Traits were selected without replacement.

**Administration.** The questionnaire was administered to groups of 14 to 22 subjects. The booklet informed the subjects that this was a study of first impressions, the purpose of which was to determine how impressions are formed on the basis of personality traits. The subjects were then given, as an example, a target person who was described as kind and witty. Based on this information, the subjects were asked to rate the person's likability on a 21-point scale running from -10 (dislike very much) to +10 (like very much). The four anchor sets and 16 experimental sets were then presented, each of which the subjects were to rate on the 21-point scale. The 16 sets of experimental stimuli were presented in a randomly determined sequence which was the same for all subjects.

**E-I.** In addition to the impression formation booklet, each subject filled out the Eysenck personality inventory (Eysenck & Eysenck, 1965) either before or after having filled out the impression formation booklet. Based on the E-I score, the top 25% (Es) and the bottom 25% (Is) of the sample were selected for analysis. Thus, the results to be presented include data for 20 Is and 20 Es, 18 of whom were males, and 22 of whom were females.

## RESULTS

The likability ratings for the two replications within each set size were averaged resulting in four favorable trait sets and four unfavorable trait sets. These data were analyzed in a 2 by 2 by 2 by 4 ANOVA with sex of subject and E-I (extraverts vs. introverts) as between-subjects factors and valence of traits (favorable vs. unfavorable) and set size (one, two, three, and six) as within-subjects factors. The finding of most interest was the E-I by Valence interaction ( $F = 13.05$ ,  $df = 1/36$ ,  $p < .01$ ). A posteriori tests [Tukey (a), Winer, 1971] showed that extraverts rated target persons described by favorable traits as more likable ( $M = 6.70$ ) than did introverts ( $M = 5.34$ ,  $p < .05$ ), and also rated target persons described by unfavorable traits as less likable ( $M = -6.28$ ) than did introverts ( $M = -4.81$ ,  $p < .05$ ). Set size did not interact with extraversion nor were there any other significant E-I effects.

A Valence by Set Size interaction was also obtained ( $F = 104.50$ ,  $df = 3/108$ ,  $p < .0001$ ). A posteriori tests indicated that as set size increased, the positive trait targets were rated more favorably and the negative trait targets were rated less favorably. The only exception to this pattern was that there was not a reliable difference between Set Sizes 2 and 3 for favorable traits. The only significant finding involving sex was a Set Size by Sex interaction ( $F = 2.94$ ,  $df = 3/108$ ,  $p < .05$ ). Since the means for this interaction combine ratings for both positive and negative stimulus sets, they can be considered as estimates of the relative importance given to positive over negative traits. A posteriori comparisons

within males indicated no reliable differences in the means across the different set sizes. For females, however, there were reliable differences across set sizes. Females rated single traits more favorably ( $M = 1.19$ ) than Set Size 3 ( $M = -.45$ ) or six ( $M = -.18$ ). This pattern of means indicates that females were relatively more charitable in their ratings of persons described by single negative traits than of persons described by multiple negative traits. Main effects obtained for valence ( $F = 843.63$ ,  $df = 3/108$ ,  $p < .0001$ ) and set size ( $F = 9.28$ ,  $df = 3/108$ ,  $p < .0001$ ) must be interpreted in terms of the Valence by Set Size, Set Size by Sex and Valence by E-I interactions.

## DISCUSSION

The extraverts rated target persons described by favorable traits as more likable and target persons described by unfavorable traits as less likable than did the introverts. This finding does not support the hypothesis that all other persons, irrespective of their personality characteristics, would be responded to more favorably by the stimulus hungry extravert than by the introvert. It does support the formulation that the differences in social responsiveness between the extravert and introvert are a product of two processes. First, the extravert, because of his stronger need for stimulation, is more likely than the introvert to interact with other persons. Second, as a result of this interaction the extravert learns to be more responsive to both the positive and negative reinforcement potential of other persons.

These differences in likableness ratings could also be accounted for by assuming that the extravert has a different cognitive response style than the introvert. For example, the extravert may use a narrower psychological perspective (Ostrom & Upshaw, 1968) and hence make more extreme ratings on any judgment task. However, the extravert does not make more extreme judgments on all tasks. For example, Lynn and Eysenck (1961) demonstrated that extraverts find extreme levels of pain stimulation less aversive than introverts.

There has been little research on individual differences in impression formation. The present findings suggest that predictions of impression formation judgments would be improved if the extraversion-introversion dimension were taken into account. In Anderson's (1971) basic model a response ( $R$ ) or judgment is a function of a weighted ( $w_i$ ) sum of the scale values ( $s_i$ ) of the items in the stimulus set ( $R_i = \sum w_i s_i$ ). Given the bivalent scale values (negative values for negative traits), the present findings that introverts make less polarized judgments than extraverts could be accounted for in the model if introverts assigned a smaller value to the weight parameter for each stimulus in the set than did extraverts. It may be that future research will indicate that the assumption that introverts assign consistently smaller values to the weight parameter than extraverts may be too simplistic. The evaluative ratings in the present research were made without consideration of other dimensions of meaning such as activity and potency (Osgood, Suci, and Tannenbaum, 1957). If extraverts prefer greater stimulation then they should prefer persons described by active traits over persons described in inactive traits. The opposite should be true for introverts.

Finally, "liking" ratings may not adequately characterize the affiliation needs of the extravert. For example, what would happen if extraverts were asked how willing they would be to spend some time with persons described by negative traits? It is possible that a "listerine" effect may occur. That is, although

extraverts dislike such persons more intensely than introverts, they may still be more willing to spend time interacting with them.

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(Received for publication December 23, 1974.)