Response Process in Judgmental Contrast

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ABSTRACT. College students ranked opposite-sex and same-sex celebrities on their attractiveness as potential partners for an evening (dateability) in Experiment 1 (n = 130). The opposite-sex rankings were used to establish three stimulus contexts varying in average dateability for each sex. Subjects then gave two types of magnitude estimations (line drawings and dollars) on the dateability of common stimulus names in the three contexts (Experiment 2, n = 117). Both types of magnitude estimations were inversely related to the average dateability of the entire ensemble; that is, judgmental contrast was demonstrated. Contrast was not, however, obtained in Experiment 3, when subjects (n = 43) made a between-sex celebrity-matching response on dateability. It was concluded that the observed contrast effects were due to contextual influences on response processes rather than perceptual processes.

THE EFFECT OF CONTEXT on the judgment of stimuli has long been acknowledged by students of perception; the literature on judgment is replete with examples of context effects. A context effect occurs when the judgment of a particular stimulus is influenced by the array of other stimuli being judged. Contextual stimuli frequently produce apparent repulsion (contrast) of one stimulus from other stimuli. According to Helson’s (1964) adaptation-level (AL) theory, the total stimulus distribution produces an

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adaptation level that corresponds to an internalized standard (a momentary sensory neutral point), and each stimulus is perceived relative to that standard. This view, that judgmental contrast effects are perceptually real, has had wide influence even in areas in which a sensory argument seems not applicable, for example, social-personality research (Manis, 1967).

An alternative view is that contrast effects are not perceptual but are linguistic (e.g., Campbell, Lewis, & Hunt, 1958; Stevens, 1958), especially with more abstract stimuli (Park & Hicks, 1980). This view suggests that the use of situationally relative, arbitrary, and restricted response languages combines with the subject's attempt to communicate differentiation between stimuli to produce contrast. For example, suppose that a given stimulus is presented as the most intense of an array in one session and the least intense of an array in another session. Further, suppose that subjective intensity is being indicated on a 7-point category scale. Not surprisingly, the common stimulus is rated as intense in one situation and weak in the second situation irrespective of differential perception of the stimulus. Contrast effects may result not from any real change in the perceptual experience of stimuli but merely from the subject's attempt to categorize stimuli relative to their context. In other words, it may be that one's experience of an event is the same regardless of other events being judged, but what one says about the experience depends on other experiences.

The present study was an attempt to separate experiential and response-translation components of contrast on judgments of a social-personal dimension. Three experiments were conducted, the first to quantify the stimulus dimension, the second to demonstrate contrast effects, and the third to eliminate contrast using an appropriate response mode.

Experiment 1

The specific dimension chosen was dateability (judged attractiveness of an individual of the opposite sex as a partner for an evening). This dimension is theoretically akin to initial phases of interpersonal attraction. As an experimental variable, however, dateability has been treated most often as a correlate of physical attractiveness, and the two variables have been found to be positively related (Tesser & Brodie, 1971).

Previous researchers have used in situ ratings of actual interactions or ratings of photographs to assess dimensions of physical attractiveness. The present stimuli consisted of celebrity names (Brislin & Lewis, 1968).

Method

Subjects. The subjects were from an experimental psychology class. There were 50 men and 80 women.
Procedure. During the regularly scheduled class period each subject was given a sheet of paper with 15 names on it, male names for female subjects and female names for male subjects (Table 1). Each set of names was in one of five random orders with approximately 20% of the subjects of each sex receiving each order.

The names were read aloud in class, and any questions about the identity of the celebrities listed on the sheet were resolved. The subjects were then instructed to rank the celebrities on the basis of how much they would like a date with each, with 1 representing the most desired partner and 15, the least desired. The women were then given copies of the female names and the men, copies of the male names, and they were instructed to rank these same-sex celebrities on dateability as they thought a typical member of the opposite sex would.

Results and Discussion

The mean and standard deviation of the ranks were obtained for each celebrity name. The data for female subjects rating male celebrities and those for male subjects rating female celebrities are contained in Table 1.

The differences between name means are significant: \( F(14, 1106) = 850.67, p < .01 \) for male celebrity rankings and \( F(14, 686) = 789.43, p < \)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Male celebrities</th>
<th>M</th>
<th>SD</th>
<th>Female celebrities</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Paul Newman</td>
<td>2.89</td>
<td>2.57</td>
<td>Susan St. James</td>
<td>3.28</td>
<td>1.82</td>
</tr>
<tr>
<td>2</td>
<td>Robert Redford</td>
<td>2.95</td>
<td>2.52</td>
<td>Raquel Welch</td>
<td>3.60</td>
<td>2.47</td>
</tr>
<tr>
<td>3</td>
<td>Alan Alda</td>
<td>4.03</td>
<td>2.71</td>
<td>Olivia Newton-John</td>
<td>3.91</td>
<td>2.52</td>
</tr>
<tr>
<td>4</td>
<td>James Caan</td>
<td>4.06</td>
<td>3.04</td>
<td>Sally Struthers</td>
<td>4.06</td>
<td>2.80</td>
</tr>
<tr>
<td>5</td>
<td>Peter Falk</td>
<td>6.04</td>
<td>2.95</td>
<td>Barbie Benton</td>
<td>4.68</td>
<td>3.19</td>
</tr>
<tr>
<td>6</td>
<td>Burt Reynolds</td>
<td>6.42</td>
<td>2.49</td>
<td>Cher Bono</td>
<td>5.28</td>
<td>2.67</td>
</tr>
<tr>
<td>7</td>
<td>Johnny Carson</td>
<td>7.67</td>
<td>1.82</td>
<td>Carol Burnett</td>
<td>8.15</td>
<td>2.49</td>
</tr>
<tr>
<td>8</td>
<td>Charles Bronson</td>
<td>7.82</td>
<td>2.80</td>
<td>Dinah Shore</td>
<td>8.70</td>
<td>2.97</td>
</tr>
<tr>
<td>9</td>
<td>Telly Savales</td>
<td>8.63</td>
<td>2.46</td>
<td>Doris Day</td>
<td>8.71</td>
<td>2.71</td>
</tr>
<tr>
<td>10</td>
<td>Sonny Bono</td>
<td>9.31</td>
<td>2.47</td>
<td>Rose Marie</td>
<td>10.57</td>
<td>2.46</td>
</tr>
<tr>
<td>11</td>
<td>Don Rickles</td>
<td>11.17</td>
<td>2.78</td>
<td>Joyce Brothers</td>
<td>10.66</td>
<td>3.04</td>
</tr>
<tr>
<td>12</td>
<td>Ed McMahon</td>
<td>11.28</td>
<td>3.19</td>
<td>Shelly Winters</td>
<td>11.20</td>
<td>2.78</td>
</tr>
<tr>
<td>13</td>
<td>Charlie Weaver</td>
<td>11.40</td>
<td>2.50</td>
<td>Nancy Walker</td>
<td>12.20</td>
<td>2.50</td>
</tr>
<tr>
<td>14</td>
<td>Ronald McDonald</td>
<td>12.00</td>
<td>2.67</td>
<td>Phillis Diller</td>
<td>12.48</td>
<td>2.57</td>
</tr>
<tr>
<td>15</td>
<td>Tiny Tim</td>
<td>14.25</td>
<td>2.97</td>
<td>Totie Fields</td>
<td>12.51</td>
<td>2.95</td>
</tr>
</tbody>
</table>
.01 for female celebrity rankings. The rankings were accepted as reliably
different across celebrity names. In addition, the mean rankings are linearly
ordered and, thus, constitute interval scales; the linear component of the
difference between male celebrity names is significant, \( F(1, 79) = 910.32, p < .001 \), as it is for female celebrity names, \( F(1, 49) = 1,173.20, p < .001 \).
Tests for significant nonlinearity produced \( F < 1.0 \) in each case. The \( r^2 \) for
linearity is 0.981 for male celebrity names and 0.959 for female celebrity
names.

It is noteworthy that the variability of rankings is roughly invariant
across celebrity names. There was, thus, consistent intersubject agreement
on the rankings.

The ordinal ranks (not mean ranks) of male celebrities as ranked by
women and by men as they thought women would rank them produced a
rank-order correlation of .976 (\( p < .01 \)). The correlation was .91 on female
celebrities (\( p < .01 \)). Members of each sex knew approximately how attrac-
tive (relatively) the same-sex celebrities were to their opposite-sex
classmates.

Experiment 2

Method

Subjects. This experiment was designed to test for contrast effects. The sub-
jects were from the same class that produced the initial rank orders. Three
groups of men and women were randomly formed. To equalize the number
in each group within sexes, the data from 4 men and 7 women were not
used. This left 15 men and 24 women per group.

Procedure. Groups were defined by the ensemble of celebrity names with
which they were presented. Groups AL-4 received the names corresponding
to ranks 1, 2, 3, 4, 7, 8, 9; Groups AL-8, those corresponding to ranks 5, 6,
7, 8, 9, 10, 11; and Groups AL-12, those corresponding to ranks 7, 8, 9, 12,
13, 14, 15. The group designation thus represents the median stimulus.

The stimuli (names) were printed on sheets in the random order 3, 7, 1,
5, 2, 6, 4, with the numbers indicating the rank ordering of dateability of
the celebrities with respect to the ensemble of stimuli given that particular
group. The subjects were also given an 8½- × 11-in. response booklet and
were instructed to respond to each name on a separate page by drawing a
line with length proportional to how much they desired a date with the par-
ticular celebrity. Thus, a long line was to represent a strong desire for a date
and a short line, a weak desire for a date. Subjects were allowed approx-
imately 3 min for this portion of the study.

Next the stimuli were again presented to the subjects. The random
order of the names on the sheet was 5, 4, 3, 6, 1, 7, 2, with the numbers
representing ranks as before for each group. Subjects were instructed to pretend that they had been stranded on a desert island, deprived of the company of the opposite sex for over a year. Further, they were provided with $1,000 for each name. The subjects were to record how much of the $1,000, if any, they would spend for a date with each celebrity.

Results

The stimuli for men and women differed. Therefore, the results for the two sexes were analyzed separately. The design was thus a split-plot with celebrities—7, 8, 9—as a within-subjects variable and with AL-groups—4, 8, 12—as a between-subjects variable. The effects of both variables were decomposed by orthogonal polynomial analysis (Grant, 1956).

Women: Line drawing. The linear component of the AL effect is significant, $F(1, 69) = 7.73, p < .01$. The quadratic component produced $F < 1.0$. The mean line lengths for Celebrities 7, 8, and 9 are 4.44 in., 4.52 in., and 6.18 in. for AL-groups 4, 8, and 12, respectively. In addition, the difference between celebrities (ignoring AL-groups) is significant, $F(2, 138) = 5.15, p < .01$, and this effect is linear, $F(1, 69) = 6.87, p < .025$. The mean line lengths for Celebrities 7, 8, and 9 are 5.40 in., 5.53 in., and 4.19 in., respectively (Figure 1). The interaction $F$ is less than 1.0.

![Figure 1. Mean line length (inches) drawn by women judging male celebrities for each AL-group.](image-url)
Men: Line drawing. The AL effect is significant, $F(2, 42) = 6.16, p < .01$, and this effect is linear, $F(1, 42) = 11.34, p < .01$. The mean line lengths for celebrities are 3.91 in., 4.61 in., and 6.78 in. for AL-groups 4, 8, and 12, respectively. The other terms in the analysis both produced $F < 1.0$. The mean line lengths for all celebrities of each group are presented in Figure 2.

![Figure 2. Mean line length (inches) drawn by men judging female celebrities for each AL-group.](image)

Women: Dollar estimates. The linear component of the AL effect is again significant, $F(1, 69) = 8.32, p < .01$. The mean dollar estimates (collapsed across Celebrities 7, 8, and 9) are $333.31, $364.65, and $386.33 for AL-groups 4, 8, and 12, respectively (Figure 3). The main effect of individual celebrities and the interaction produced $F$s $< 1.0$.

Men: Dollar estimates. The only significant effect is the linear component of the AL effect, $F(1, 42) = 10.43, p < .01$. The mean dollar estimations are $403.82, $422.44, and $434.04 for AL-groups 4, 8, and 12, respectively (Figure 4). Both the main effect of celebrities and the interaction are non-significant at the .25 level.
FIGURE 3. Mean dollars estimated by women judging male celebrities for each AL-group.

FIGURE 4. Mean dollar estimated by men judging female celebrities for each AL-group.
Discussion

Contrast effects were demonstrated for both sexes on both types of judgment; that is, judgments of the common stimulus names varied inversely with the median stimulus name being judged. These results are consonant with a perceptual explanation of contrast. They are, however, also consonant with a response interpretation. They could easily have occurred if subjects made: (a) responses of largest magnitude to the stimulus names of most dateability, (b) responses of least magnitude to the stimulus names of least dateability, and (c) responses of (proportionately) intermediate magnitude to the stimulus names of intermediate dateability. Because the common stimulus names would be the least dateable for AL-group 4, of intermediate dateability for AL-group 8, and the most dateable for AL-group 12, the contrast effect would be produced. If this process occurred, the actual perceptions of the common stimuli might be invariant with the context.

What was needed to test between these interpretations was a response mode not implicitly relativistic. The third experiment was an attempt to provide such a response mode.

Experiment 3

Method

Subjects. The subjects were 43 women enrolled in education classes. They were nonsystematically assigned to two groups (ns = 20 and 23).

Procedure. The experiment was conducted in a classroom. The subjects were given a two-page booklet. The first page contained a list of 4 male celebrity names. For Group AL-3, the names were Paul Newman, Robert Redford, Alan Alda, and James Caan; for Group AL-13, the names were Tiny Tim, Ronald McDonald, Charlie Weaver, and Ed McMahon. The second page of the booklets was the same for all groups. It contained the name of Charles Bronson at the top left of the page. In addition, the names of all 15 female celebrities were printed in random order in a column on the right side of the page.

After establishing that all subjects knew the celebrities’ names listed on the first page of their booklets, they were given the dollar estimation instructions as in the previous experiment. They were then told to complete the judgments on the first page.

Following this, subjects were told to turn the page. After establishing that they knew all the names on the second page, they were told to give a dollar estimate for Charles Bronson. They were then told to read through the list of female celebrity names and to “underline a single female celebrity name that would have the same dateability to the average male as Charles Bronson does to you.”
Results and Discussion

Two dependent variables were analyzed—the dollar estimates for Charles Bronson and the ranks (obtained from Experiment 1) corresponding to the female celebrity matched with Charles Bronson. There is a significant difference between the mean dollar estimates of Group AL-3 (M = $187.13) and Group AL-13 (M = $522.96), F(1, 41) = 8.617, p < .01. As in Experiment 2, significant contrast was demonstrated. The mean ranks of the matched female celebrities do not, however, differ in the two groups, F < 1.0: The mean ranks are 8.27 and 7.98 for Groups AL-3 and AL-13, respectively. Thus, no contrast was obtained on this response.

Experiment 1 demonstrated that subjects make veridical judgments about how opposite-sex subjects judge celebrities of their sex. If the contrast effect on the dollar estimates was a reflection of perceptual changes induced by the context, then contrast should have occurred on the celebrity-matching task. Because no contrast was observed for this variable, the more reasonable interpretation seems to be that the contrast effects observed in the present study were due to response-translation processes.

One’s perception of how good it would be to have a date with Dinah Shore is the same whether one is also judging Susan St. James or Totie Fields. The numbers one assigns to the date in these two situations, however, may very well differ depending on the response language.

REFERENCES


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