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You want to appear competent? Be mean! You want to appear sociable? Be lazy!

Group differentiation and the compensation effect.

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Abstract

Using the two fundamental dimensions of social judgment, warmth and competence, we show that, contrary to general models of impression formation, negative information on one dimension has positive consequences on the way a target is judged on the other dimension. Participants learned about two groups which were either congruent on warmth and competence (one group high on both and the other low on both) or they were compensatory (one group high on warmth and low on competence, the other high on competence and low on warmth). Our results show that in the compensatory condition, the groups were rated more extremely than in the congruent condition and that this was especially the case for the dimension on which the groups were high. Results are discussed both in terms of how they run counter to traditional theories of impression formation and what they tell us about the fundamental dimensions of social judgment.

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Group differentiation and the compensation effect.

Impressions of individuals and social groups are fundamentally evaluative. In other words, nearly all attributes along which individuals and groups are seen to vary have a consensually shared positive pole and a consensually shared negative pole. Everyone agrees that it is better to be smart than stupid, better to be honest than dishonest, better to be friendly than unfriendly, and better to be industrious rather than lazy. Although we can think of exceptions to this rule (is it better to be thrifty or extravagant?), valence is fundamental to social perception (Osgood, Suci, & Tannenbaum, 1957). Social attributes tend to covary according to their shared valences. Additionally, because of what has been called the "halo" error in social judgment, our judgments of others may actually reflect an overestimation of the degree to which similarly valenced attributes co-occur. Thorndike (1920) was the first to define this "halo" error as the tendency to *think of a person in general as rather good or rather inferior and to color the judgment of the separate qualities by this feeling"* (p. 25).

Most models of impression formation and information integration in fact rest upon the assumption that global impressions are fundamentally guided by the valences of the attributes that are integrated into an overall global impression (Anderson, 1965; Asch, 1946; Srull & Wyer, 1989). For some authors, valenced judgments of others are presumed to depend upon the adding (Fishbein, & Ajzen, 1975) or averaging (Anderson, 1965) of valenced information about those others, weighing each bit of valenced information according to its relevance to the judgment at hand. Drawing on a more

gestalt view of impression formation, other authors suggest that new information about others is colored by the earlier encountered evidence in a way that is evaluatively consistent (Brown, 1986; Zanna & Hamilton, 1972). Srull and Wyer (1989) integrate these in a comprehensive theory of impression formation based on the fundamental assumption that one attempts to form a global evaluative impression of a target and subsequent judgments of that target largely derive from this.

<u>Fundamental Dimensions of Social Judgment</u>

Not only are social attributes valenced, but they also seem to fall into two clusters that may be thought of as fundamental underlying dimensions. Rosenberg, Nelson and Vivekananthan (1968) argued that individual traits tend to refer either to an underlying "social good/bad" dimension or an underlying "intellectual good/bad" dimension. In the domain of group impressions, Fiske, Cuddy and Glick (2007) have generally referred to these same two underlying dimensions as Warmth and Competence, terms that we will use. Importantly, and consistent with Halo effects in social judgment, Rosenberg et al. (1968) showed that these two dimensions tend to be positively correlated in social judgment. Thus, although they are different dimensions, traits and individuals that have more positive values on one of them also tend to have more positive values on the other.

The integration of different valenced attributes into valenced impressions is most classically illustrated by the study of Asch (1946) where the impression of someone who was described as "*Intelligent – skillful – industrious – **<u>warm</u>** – determined – practical – cautious*" was considerably different from the impression of someone who was described as "*Intelligent – skillful – industrious – **<u>cold</u>** – determined – practical – cautious*." As Brown (1986) discussed and Zanna and Hamilton (1972) demonstrated, these rather

different impressions simply underscore the fact that warm and cold make reference to a rather different underlying dimension than do the other traits in the two lists. And information integration, into global impressions, follows from integrating valences across the two dimensions.

Compensatory Judgments

Some recent work has suggested that in particular circumstances the two fundamental dimensions, competence and warmth, may not be positively related. Judd, Hawkins, Yzerbyt, and Kashima (2005) asked participants to judge pairs of target individuals or groups, each having been described by providing participants with behaviors they had engaged in relevant to one of the two fundamental dimensions. For instance, one target was described as very competent and the other one as very incompetent, while both targets were ambiguous on warmth. In the impressions formed, Judd et al. (2005) observed that the competent group was rated as colder than the incompetent group. This effect was replicated on the competence dimension when warmth was manipulated.

Judd et al. (2005) also showed evidence for the compensation effect at the correlational level. The more the two targets were seen to differ on one dimension, the more they were seen to differ *in the opposite direction* on the other dimension. What makes this particularly surprising is that the actual behaviors that were used, when scaled on the two dimensions during a pretest, replicated the results found by Rosenberg et al. (1968). That is, a behavior that was judged positively on one of the two dimensions was also judged somewhat positively on the other, replicating the positive correlation between the two dimensions at the level of the individual stimuli.

Further support for the compensation effect can be found in research done on groups that show what have been called mixed-stereotypes. In one of the first studies that examined the dimensions of competence and warmth in a full ingroup-outgroup design, Yzerbyt, Provost and Corneille (2005) showed that the French and the Belgian described one of the two groups as more competent than warm (i.e., the French) and the other of the two groups as less competent than warm (i.e., the Belgians). Cuddy, Fiske, & Glick (2004) examined the stereotype of working mothers. They showed that a working mother is perceived as warmer but also as less competent than other working women. Similar results have been found for the stereotype of the elderly (Cuddy, Norton, & Fiske, 2005).

The evidence for this compensatory pattern in the comparative judgments of two individuals or groups leads to interesting predictions that seemingly run counter to what one might expect given most models of impression formation that rely on the integration of similarly valenced information. If compensation is the norm in comparative contexts, then the expectation would be that groups differ in evaluatively opposite directions on the dimensions of warmth and competence. As a result, when this expectation is met, then more extremely valenced judgments of both groups on both dimensions should follow, compared to when that expectation is violated. In other words, imagine two groups that differ evaluatively on the two dimensions. In one case they differ in the same valenced direction (one group is more positive than the other on both dimensions). In the other case they differ in the opposite direction on the two dimensions (one group is more positive than the other on one dimension but more negative on the other dimension). The latter case meets our expectations about compensatory patterns and, accordingly, we predict that more extremely valenced judgments of warmth and competence of the two

groups should ensue in this situation than in the situation where the compensatory expectation is violated. Our prediction here runs entirely counter to a prediction that would be based on a valenced information integration perspective, where more extremely valenced judgments should follow if one is combining similarly valenced information from two positively related attribute dimensions.

Experimental overview

Our participants formed impressions of two groups who were described with behaviors that had been scaled on dimensions of warmth and competence. Half of our participants encountered two groups who manifested what we call a compensatory relationship between the two dimensions: the group that was higher on warmth was lower on competence, and vice versa. The other half of our participants encountered two groups who manifested what we call a halo relationship between the two dimensions: the group that was higher on warmth was also higher on competence. Our prediction is that more extremely valenced judgments of perceived warmth and competence of the two groups would be made in the compensatory condition than in the halo condition. We also predict a condition difference in the degree to which the perceived group differences on the two dimensions are correlated, with the perceived group differences between the two dimensions being more highly correlated in the compensatory condition than in the halo condition. Thus for example, we predict that when a cold but competent group is compared to a warm but incompetent group (compensatory condition), the participants who perceive a larger difference between the two groups on the warmth dimension should also perceive a larger difference on competence. This should not be the case when

a warm and competent group is compared to a cold and incompetent group (halo condition).

The stimulus behaviors that were used to describe the two groups were the same as those used by Judd et al. (2005). It is important to realize, however, that the design of the current study and the hypotheses explored are rather different from those of the earlier work. Judd et al. (2005) used behaviors to manipulate the group impressions. Those behaviors were relevant to only one of the two dimensions and their interest focused on judgments of the two groups on the other dimension. In the current study, each group is described with behaviors relevant to both dimensions. And we are interested in ensuing judgments of both groups on both dimensions as a function of whether the two groups manifested a halo or compensatory relationship on the two dimensions.

As already mentioned, when the behaviors that we used were scaled during a pretest, the two judgments of their warmth and competence were positively correlated, consistent with a halo effect. Accordingly, if we find that more differentiated judgments of the target groups ensue when the two groups are in a compensatory rather than halo relationship, then this strongly suggests that in this context the normal rules for valenced information integration do not hold.

Method

Participants

Seventy-nine undergraduates at the University of Colorado took part in the experiment for partial course credit. Participants were run in groups of 4 to 6 but they were individually randomly assigned to one of the two conditions and at no point interacted with each other.

Design

Participants were presented with two groups. In the halo condition, one group was high in competence and in warmth (HcHw) and the other one was low in competence and in warmth (LcLw). In the compensatory condition, one group was high in competence and low in warmth (HcLw) whereas the other group was low in competence and high in warmth (LcHw). So the type of groups, halo or compensatory, was manipulated between participants whereas the group valence on each dimension was manipulated within participants. In addition to those two factors, two counterbalancing factors were included to control for order and name effects. The group that was presented and measured first was counterbalanced so that in the halo condition, half the participants saw the HcHw group first and the other half saw it after the LcLw group. Similarly in the compensatory condition, half the participants saw the HcLw group first and the other half saw it after the LcHw group. The names of the groups (Green and Blue) were also counterbalanced. These counterbalancing factors had no effect on the results and will therefore not be discussed further.

Procedure

Upon entering the lab, participants were seated at individual tables and given a one-page initial description of the study and a deck of cards. The written description informed participants that recent developments in personality research have suggested that there is a fundamental personality distinction that we are only beginning to understand and that people can be reliably classified as belonging to one of two groups, referred to as the Blue group or the Green group. Participants were told that we were interested in the impressions they would form of each group. In order to get acquainted

with the two groups they were asked to read a number of behaviors that members of the Green and of the Blue group had engaged in. The behaviors were presented on separate cards in a random order. Participants were instructed to read each card one at a time and to sort them into two piles, one for the Green group and one for the Blue group. When they had read and sorted all the cards, they were asked to pick up one pile, to read all the behaviors of that group a second time and then to do the same with the second group. When participants had read all the cards twice, the cards were taken away from them and they were given an impression-writing task. When the impression-writing task had been completed, participants were given a trait-rating task. At the end of that, participants were thanked and debriefed.

Materials

Behaviors describing the groups

The behaviors that participants initially read to form their impressions of the two groups were those that had been pretested and used in Judd et al. (2005). Each behavior was printed on a card underneath the group label (Blue or Green) that informed the participants of the group membership of the person who did the behavior. Each group was described by 16 behaviors. That is, for each group, there were 8 behaviors on warmth and 8 on competence. Of these 8 behaviors, 6 were in line with the group valence on that dimension and 2 were of the opposite valence. Accordingly, in the halo condition, where participants saw the HcHw and LcLw groups, the behaviors attributed to the HcHw group were 6 positive competence, 2 negative competence, 6 positive warmth, and 2 negative warmth behaviors. And the behaviors attributed to the LcLw group were 6 negative competence, 2 positive competence, 6 negative warmth, and 2 positive warmth behaviors.

In the compensatory condition, the HcLw and LcHw groups were also described with 8 behaviors on each dimension. For the HcLw group, participants read 6 positive competent behaviors and 2 negative ones and 6 negative warmth behaviors and 2 positive ones. And the behaviors for the LcHw group were 6 negative competence, 2 positive competence, 6 positive warmth, and 2 negative warmth behaviors.

Impression writing

Participants were asked to write down their impression of each group in about 10 lines. They were asked to make sure that the text they had written gave a clear and complete description of how they viewed the green and the blue groups. The purpose of this task was to make sure that the participants integrated all the information they had received about each group into a comprehensive impression.

Group differences

Each group was rated on 8 personality traits. There were 2 positive competence traits (capable & skilled), 2 negative competence traits (lazy & disorganized), 2 positive warmth traits (caring & sociable) and 2 negative warmth traits (unfriendly & insensitive). Answers were given on a 9 point scale going from -4 (totally disagree) to 4 (totally agree). The 8 traits were rated in a random fixed order. Since we wanted to measure how the differences between the two groups were perceived, participants rated the first group on the first trait, then the second group on that same trait; they then went on to rate the 2 groups on the second trait and so on.

Results

Three outliers were deleted from the analysis as a result of having studentized deleted residuals greater than 2.5. Interpretations of analyses that included the outliers did not differ substantively from those we report.

We computed a competence and a warmth score for each group by computing the mean of the two positive and the two negative (reversed) traits on each dimension. Then we computed for each dimension a score of the difference between the high group and the low group on each dimension (i.e., Hc minus Lc and Hw minus Lw). Accordingly larger difference scores mean that on a given dimension, the perceived group differences are larger and lower scores mean those perceived group differences on that dimension are smaller. The difference scores range from –8 to 8. If the participants gave a mean rating of "4" for the high group on one dimension and a mean rating of "-4" for the low group then the difference score on that dimension is "4-(-4)=8".

We analyzed the 2 difference scores with a 2 (dimension: Competence vs. Warmth) by 2 (Condition: Compensatory vs. Halo) mixed model ANOVA, the first factor varying within-participants and the second between them. As predicted, the condition factor had a significant main effect, $F(1,74)=7.97$, $p<.01$. Across dimensions, the difference scores were higher in the compensatory condition (M=4.19, SD=1.36) than in the halo condition (M=3.29, SD=1.41), meaning that the perceived difference between the groups on one dimension was greater if the difference on the other dimension was compensatory rather than halo. There was also a main effect of dimension $F(1,74)=17.03$, $p<.001$. Across conditions, the difference scores were higher for warmth (M=4.41, SD=2.02) than for competence (M=3.06, SD=2.03). Importantly, the dimension by

condition interaction was non-significant ($p > .8$). Thus the more extreme ratings on each dimension in the compensatory condition did not depend on which dimension was rated.

To further probe these data, we wanted to examine whether the increased extremity of ratings of the two groups was found for both the high and low groups. According, we redid this analysis separately for the ratings of the high group and the low group. For the high group scores on each dimension, Hc and Hw, the expected condition main effect was significant $F(1, 74) = 17.44$, $p < .001$. Across dimensions, the scores of the high group were higher in the compensatory condition (M=2.98, SD=0.8) than in the halo condition (M=2.22, SD=0.77). There was also a main effect of dimension $F(1, 74) = 4.42$, $p < .05$. Across conditions, the warmth scores were higher (M=2.75, SD=1.07) than competence scores (M=2.43, SD=1.12). And the dimension by condition interaction was non-significant ($p > .3$). For the low group scores on each dimension, Lc and Lw, the condition main effect was not significant ($p > .5$). But there was a main effect of dimension $F(1, 74) = 27.21$, $p < .001$. Across conditions, the warmth scores were lower (M=-1.65, SD=1.25) than competence scores (M=-0.63, SD=1.34). And the dimension by condition interaction was non-significant ($p > .2$). Thus it appears that compensation led to more extreme judgments than halo, particularly on the dimension on which the group was higher (or more positive) in the compensatory condition.

In order to test the correlation hypothesis we computed the correlation between the competence difference score and the warmth difference score separately for the two conditions. As predicted, the correlation was .33 ($df = 37$, $p < .05$) for the compensatory condition, and -.22 ($df = 39$, $p = .18$) for the halo condition. This means that, in the compensatory condition, a greater difference between the groups on one dimension was

associated with a greater difference on the other dimension. In sharp contrast, this was

not the case in the halo condition, and in fact the correlation between the two differences

was marginally negative. In order to test the significance of the difference between these

two correlation coefficients, we computed and compared the two Z transformed r's

(Cohen & Cohen, 1983). This test showed that the two correlations were indeed

significantly different from each other, z =2.38, $p<.05$.

<div align="center">Discussion</div>

Our differentiation hypothesis was supported both at the mean and at the

correlational level. At the mean level, across both dimensions, participants in the

compensatory condition differentiated the two groups more than in the halo condition.

And that effect was found for both dimensions, warmth and competence. Looking

separately at the means of the high groups and of the low groups showed that this

differentiation effect was due to the scores attributed to the high groups. So it is indeed

the case that the high competence group is seen as more competent if it is also cold than

if it is also warm. And it is the case that the high warmth group is seen a warmer when

presented as less competent than when presented as highly competent (see Table 1).

Finally, we note that on the whole the groups received more extreme scores on the

warmth dimension than on the competence dimension but this main effect did not interact

with the critical main effect of condition.

This increased differentiation in the compensation condition than in the halo

condition is even more interesting when considering the pretest scores of the behaviors

used for group presentation (Judd et al., 2005). When they pretested their behaviors, Judd

et al. (2005) found that there was a positive correlation between the warmth and the

competence pretest mean scores of the behaviors. So the high competence behaviors are also perceived as somewhat warm and the low competence behaviors are also perceived as somewhat cold (see Appendix of Judd et al., 2005). So, the greater extremity of judgments we observed in the compensatory condition actually runs counter to what we should have observed had participants simply added up or averaged the mean scale values of the various behaviors on the two dimensions. This nicely underscores the power of the compensation effect when two groups are compared.

One unanticipated twist in our results is that the greater extremity of judgments of competence and warmth in the compensation condition than in the halo condition occurred primarily for ratings of whichever group was high on a dimension rather than low. This seems to be an interesting result that may simply follow from a general preference towards accentuating the positive and avoiding explicit group derogation.

We have also shown that the correlations between the warmth difference score and the competence difference score differ between experimental conditions. As expected, replicating Judd et al. (2005), the correlation is positive for the compensatory condition, such that the more the two groups are seen as different on one dimension, the more they are seen as different on the other dimension. On other hand in the halo condition the correlation is negative (nonsignificantly) rather than positive, suggesting that when they differentiate a lot on one dimension, they differentiate less on the other one.

Implications

Given the widely held belief that global evaluations are what fundamentally guide impression formation (Srull & Wyer, 1989) and that subsequent judgments ensue from

these, the present findings are certainly surprising. Accordingly, it is worth examining whether our results, where more favorable judgments of one group on one dimension result from less favorable views on another dimension, have any parallels in the literature. Recent work on the link between emotions and impression formation seems relevant. In an intriguing series of studies, Tiedens and colleagues (2000) showed that people expressing anger were perceived as being of higher status than people expressing sadness. Although there are large difference between our experiment and the work by Tiedens et al. (2000) we think that there might be a common explanation for these two effects. We intend to further investigate this kind of effect and its possible causes and mediators in future research.

It also seems interesting to speculate about some more applied implications of this work. Suppose, for instance, one was comparing two job candidates for an accountant job, a job that requires high competence but perhaps little in the way of social skills. Imagine that the two job candidates in fact were exactly equivalent in terms of their competence. But one was warmer than the other. The present results suggest that in such a case one might actually be more likely to hire the less warm applicant over the warmer and equally competent one. And for a job requiring warmth, would one actually prefer a less competent job applicant over a more competent one? Such a result would indeed be intriguing.

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Table 1

Mean group ratings on warmth and competence of the high and the low group for the compensatory

and the halo condition

	Dimension			
	Competence		Warmth	
Group	Low	High	Low	High
Condition				
Compensatory	-0.59	2.89	-1.84	3.07
Halo	-0.66	1.99	-1.48	2.46