Competence and warmth in context: The compensatory nature of stereotypic views of national groups

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Abstract

In two experiments we show that the context in which groups are perceived influences how they are judged in a compensatory manner on the fundamental dimensions of social judgment, that is, warmth and competence. We manipulate the type of country (high in competence and low in warmth vs. high in warmth and low in competence) to which a target country is compared. Our data show that the target country is perceived as warmer and less competent when the comparison country is stereotypically high (vs. low) in competence and low (vs. high) in warmth. We also found compensation correlationally across targets and across dimensions in that the higher the comparison country is rated on one of the two dimensions, the higher the target country is rated on the other. Compensation effects are shown to affect judgments of both the ingroup (Experiment 1) and an outgroup (Experiment 2). Our results shed new light on context effects in group judgments as well as on the compensatory relation of the two fundamental dimensions of social judgment. Copyright © 2008 John Wiley & Sons, Ltd.

Research has identified two fundamental dimensions of social perception. Although different names have been used, there is wide agreement on the common core of those dimensions (Abele & Wojciszke, 2007). Here, we use the labels warmth and competence (Fiske, Cuddy, Glick, & Xu, 2002). Recent experimental work by Judd, James-Hawkins, Yzerbyt, & Kashima (2005) provides clear evidence that social perception is characterized by a compensatory relation between competence and warmth: when a social target is seen as higher than another on one dimension, this target will likely be perceived as lower than the other on the second dimension. Our question is whether the use of a different comparison group in the context alters the evaluation of a target group in a way that demonstrates compensation.

Compensation in Social Judgments

In a study that examined the dimensions of competence and warmth in a full ingroup–outgroup design, Yzerbyt, Provost, and Corneille (2005) asked French and Belgian respondents to indicate how they perceived their own and the other group in terms of competence and warmth. The data strongly supported the compensation effect in that both groups of respondents described the French as more competent than the Belgians but also the Belgians as warmer than the French. Using a more controlled setting, Cuddy, Fiske, and Glick (2004) had their participants examine several individual profiles in the context of a personnel evaluation procedure. Female professionals with children were viewed as warmer than

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competent but also as warmer and as less competent than female professionals without children (Cuddy, Norton, & Fiske, 2005).

Given the dearth of experimental work on these two dimensions in the context of intergroup relations, Judd et al. (2005) conducted a series of experiments investigating the relation between competence and warmth and the factors that may influence this relationship. Participants received lists of behaviors allegedly describing two different groups. High competence behaviors were attributed to the members of one group and low competence behaviors to the members of the other group. Each participant judged both groups on various scales that were related to warmth and competence. Unsurprisingly, the high competent group was judged to be more competent than the low competent one. Of more interest, the high competence group was also judged as *less warm* than the low competence group. Similar effects were observed on competence when warmth was manipulated (Experiment 2).

These results emerged despite the fact that when the behaviors were pre-tested (Judd et al., 2005) to verify that, for instance, competence relevant behaviors conveyed competence information but not warmth, a small positive correlation materialized between their pretest ratings on competence and warmth. Thus, even though more competent behaviors were judged as slightly warmer than less competent ones (replicating the halo effect, Rosenberg, Nelson, & Vivekananthan, 1968), when two groups were described, one with high and the other with low competent behaviors, they were judged as differing in warmth in the *opposite direction*.

Importantly, Judd et al. (2005, Experiment 4) showed that a comparative context is a necessary condition for compensation. When participants were presented with *either* the high or the low competence group, halo rather than compensation was observed. Specifically, the high competence group was rated as warmer than the low competence group. Finally, Judd et al. (2005, Experiment 5) found compensation even when participants were led to believe that they belonged to one of the groups.

Assessing Compensation

Compensation effects (Cuddy et al., 2004; Judd et al., 2005; Yzerbyt et al., 2005) have mainly been examined at the mean level. Evidence for compensation rests on the finding that participants see one group to be higher than the other on one dimension while rating this same group lower than the other group on the second dimension. However, compensation may not only materialize under the form of a negative relationship between warmth and competence at the mean level but also in terms of a negative relationship between the judgments at the respondent level. Specifically, the participants that differentiate more the two groups on one dimension should also differentiate them more on the other dimension but in the opposite direction. Such a correlation was examined by Judd et al. (2005) and, although the results were at times marginal, the predicted negative correlation emerged in all four studies in which two groups were compared.

Rather than looking at the correlation that involves within-dimension differences across groups, an alternative way to examine the compensation effect at the correlational level is to compute the correlation across dimensions and across groups. Compensation would be found if the higher one group is rated on one of the two dimensions, the higher the other group is rated on the other dimension. The compensation pattern between warmth and competence would therefore translate into a positive correlation across groups and across dimensions. Yzerbyt et al. (2005) computed and found such a positive correlation.

In a recent study, Demoulin, Geeraert, and Yzerbyt (2007) examined how the perception of exchange students of their home- and host-country evolved through time. These authors recommended computing a series of regression models in which one group's standing on one dimension (e.g. warmth) is predicted by the same group's standing on the other dimension (e.g. competence) and by the other group's position on each of the two dimensions. Results again confirmed the presence of compensation in that the evaluation of one group on one dimension was positively predicted by the evaluation of the other group on the other dimension.

In the present work, we examine compensation both by looking at mean levels of judgments as well as correlations across dimensions and across groups.

The Impact of Contexts on Stereotype Content

Research suggests that, within a given population, there is wide agreement on how social groups in general and nations in particular are perceived (Schneider, 2004). This consensus holds for the evaluations on the two fundamental dimensions

(Cuddy et al., in press). Does this mean that people's views about their nation and other nations lack flexibility? We think not. Several lines of research suggest that the comparative context in which social categories are evaluated is of importance. For instance, Doosje, Haslam, Spears, Oakes, and Koomen, 1998 found that drama students were judged differently depending on whether they were compared to sociology or physics majors. This idea, that context may influence people's stereotypic beliefs about groups, has been most clearly articulated by self-categorization theorists (Doosje et al., 1998; Haslam & Turner, 1992; van Rijswijk & Ellemers, 2002).

Overview of the Current Studies

In our work, we hoped to show that the manipulation of the comparative context has predictable compensatory effects on the judgment of groups. If, in a given context, the comparison group is perceived as warm and incompetent, the target group should be perceived as colder but more competent. Conversely, if the comparison group is competent and cold, the target country should be perceived as less competent and warmer. At the correlational level, we wanted to test whether the ratings of the comparative group on one dimension would be positively correlated with the ratings of the target group on the other dimension. We used stereotypes of countries to test this hypothesis. By holding the target country constant and changing the comparison country, we tested whether the comparison context exerts a compensatory impact on the perception of the target country.

EXPERIMENT 1

In Experiment 1, our target country, Belgium, was compared to Italy and Germany. Italy is stereotypically perceived by Belgians as warm and incompetent and Germany is stereotypically seen as competent and cold (Cuddy et al., in press). Because we used participants' ingroup as the target country, we also measured ingroup identification in order to check its influence on compensation. Although we surmised that high identifiers would rate their ingroup higher on both dimensions, we did not expect it to moderate the predicted compensation effect (Judd et al., 2005).

Method

Pretest

A pretest was conducted to determine how Belgium would be rated on the two dimensions outside of any comparative context. Twenty-five students at the Catholic University of Louvain were asked to rate Belgium on a series of 12 traits using 7-point scales ranging from 1 (=not at all) to 7 (=totally). There were 3 positive competence (rigorous, hard-working, organized), 3 positive warmth (friendly, sentimental, warm), 3 negative competence (ineffective, incompetent, inaccurate), and 3 negative warmth (boring, cold, introverted) traits. The traits were presented in a random fixed order that was reversed for half of the participants.

We computed two scores by averaging the three positive and three negative (reversed) traits pertaining to warmth and competence. Participants rated Belgium moderately and equally positively on both warmth ($M = 5.05$) and on competence ($M = 4.85$), $t(24) = .917$, $p > .3$.

Participants and Design

A total of 42 students were approached in the university's libraries and agreed to fill out the questionnaire. The experiment had two conditions, that is, the Germany context (high competence/low warmth) and the Italy context (high warmth/low competence) conditions. We reversed the order of traits for half of the questionnaires, creating four different versions of the questionnaire to which participants were randomly assigned. Order of traits had no impact and will not be discussed further.

Table 1.   Ratings of Belgium as a function of comparison country and dimension (Experiment 1)

	Comparison country	
	Italy	Germany
Dimension		
Warmth	4.44 (0.88)	5.55 (0.67)
Competence	5.08 (0.72)	4.3 (0.96)

Procedure and Materials

The study was introduced as dealing with perceptions of countries. Participants answered a 6-item identification to Belgium questionnaire on scales ranging from 1 (=not at all) to 7 (=totally). They then used similar scales to rate Italians or Germans on the 12 pre-tested traits. Finally, participants used the same 12 traits to rate Belgians.

Results

Mean Evaluations

We computed separate scores on each dimension for each country by averaging the three positive and three negative traits (reversed) pertaining to warmth and competence separately. Reliability was good for both groups and both dimensions (all 4 $\alpha > .75$).

First, the scores for the comparison country (either Germany or Italy) were analyzed using a 2 (context: Italy vs. Germany) by 2 (dimension: competence vs. warmth) ANOVA with the first factor varying between and the second within participants. The dimension by context interaction was the only significant effect, $F(1, 40) = 65.20$, $p < .001$. As expected, Italy was rated as warmer ($M = 5.68$) than Germany ($M = 4.55$), $F(1, 40) = 20.71$, $p < .001$, whereas Germany was rated as more competent ($M = 5.83$) than Italy ($M = 4.56$), $F(1, 40) = 33.12$, $p < .001$.

The ratings of Belgium were then analyzed using the same 2 by 2 ANOVA. The predicted dimension by context interaction was significant, $F(1, 40) = 38.48$, $p < .001$ (see Table 1). Follow-up analyses revealed that, in the Italy context, Belgium was rated as being more competent ($M = 5.08$) than warm ($M = 4.44$), $t(19) = -2.79$, $p < .02$. In the Germany context, Belgium was rated as less competent ($M = 4.3$) than warm ($M = 5.55$), $t(21) = 6.21$, $p < .001$. We also analyzed the ratings of Belgium for competence and warmth separately. Belgium was rated as more competent in the Italy context ($M = 5.08$) than in the Germany context ($M = 4.3$), $F(1, 40) = 8.74$, $p < .005$, and it was rated as warmer in the Germany ($M = 5.55$) than in the Italy context ($M = 4.44$), $F(1, 40) = 21.11$, $p < .001$.

Our participants reported moderately high and reliable identification scores ($M = 5.13$, SD = 1.28; Cronbach's $\alpha = .84$). We ran two linear regressions with Belgium's warmth and Belgium's competence as dependent variables. In both cases, we used identification, context, and the interaction of identification by context as the predictors. As for all regressions reported in the paper, all predictors were centered before computing interaction terms (Judd & McClelland, 1989). When warmth was the dependent variable, both identification, $b = 0.28$, $t(38) = 3.25$, $p < .002$, and context were significant predictors, $b = 0.51$, $t(38) = 4.63$, $p < .001$. Importantly, the identification by context interaction was not significant. Using competence of Belgium as the criterion, identification approached significance, $b = 0.18$, $t(38) = 1.83$, $p = .08$, whereas context was significant, $b = -0.42$, $t(38) = -3.33$, $p < .002$. Again, the identification by context interaction was not significant.

Correlational Analyses

We ran two different linear regressions, one with the warmth of Belgium and the other with the competence of Belgium as our dependent variable. When competence was the criterion, our predictors were the warmth of the comparison country, the competence of the comparison country, the warmth of Belgium, context (contrast-coded), and the three two-way

Table 2. Correlations between rating scales (Experiment 1)

	Dimension and group rated		
	Competence comparison group	Warmth comparison group	Competence Belgium
Dimension and group rated			
Warmth comparison group	−.273		
Competence Belgium	−.188	.529[*]	
Warmth Belgium	.608[*]	−.178	−.048

[*]Correlation is significant at the .01 level.

interactions of context with the three ratings, that is, the context by warmth of the comparison country interaction, the context by competence of the comparison country interaction, and the context by warmth of Belgium interaction. Our overall regression model was significant, $F(7, 34) = 2.65$, $p < .05$. As predicted, the warmth of the comparison country was a marginally significant predictor, $b = 0.36$, $t(34) = 1.92$, $p = .06$. None of the other predictors approached significance, all $ps > .16$. (Table 2 reports the zero-order correlations among all variables.)

For Belgium's warmth, our predictors were the competence of the comparison country, the warmth of the comparison country, the competence of Belgium, the context (contrast-coded) and the three two-way interactions. The full model proved significant, $F(7, 34) = 4.64$, $p < .001$. The competence of the comparison country was a significant predictor, $b = 0.35$, $t(34) = 2.01$, $p = .05$. Context was a significant predictor, $b = 0.42$, $t(34) = 2.08$, $p < .05$. Belgium was rated as warmer in the German context ($M = 5.55$) than in the Italian context ($M = 4.44$). None of the other predictors reached significance, all $ps > .30$ (see Table 2).

Discussion

In general, Belgium was perceived as warmer when compared to Germany rather than Italy and it was perceived as more competent when compared to Italy rather than Germany. Although we verified in a pre-test that, when judged alone, Belgium is evaluated as moderately high on both dimensions, the absence of a proper control condition in the present study prevented us from testing the direction of the compensation effect. We address this weakness in Experiment 2. Not surprisingly, participants who identified more with their ingroup tended to rate their country higher in warmth and in competence than did less identified participants. As predicted, however, strength of identification did not interact with the compensation effect.

A key message from this experiment resides in the correlational analyses, even though the pattern is only just above the conventional significance level. We predicted that participants who gave higher ratings to the comparison country on one dimension would be likely to give higher ratings to Belgium on the other dimension. This is exactly what our data show. Participants who gave higher ratings to the comparison country on warmth also gave relatively higher ratings to Belgium on competence. Conversely, participants who rated the comparison country higher on competence also rated Belgium as relatively warmer.

To sum up, our first experiment confirmed the impact of a comparison context on people's representation of their own national group. The pattern of findings reveals compensation both in participants' mean evaluations and in the correlations.

EXPERIMENT 2

The goal of our second experiment was to replicate and extend the findings observed in Experiment 1. Because identification did not interact with compensation, we decided to use an outgroup as the target group. We chose Canada, as informal work revealed that Belgians generally perceive this country to be moderately high on warmth and on competence. Japan and Brazil were chosen to be the high competence/low warmth and the high warmth/low competence comparison countries. We also added a control condition in which Canada was rated by itself.

Method

Participants and Design

Seventy-nine second year psychology students filled out the questionnaire on a voluntary basis during a class. We created three contexts: the Japan context, the Brazil context, and the control context (rating of Canada alone). The order of rating traits was reversed for half of the questionnaires, which resulted in six conditions to which participants were randomly assigned. Order of rating traits had no impact and will not be discussed further.

Procedure and Materials

The procedure and materials were the same as in Experiment 1 with the exception that there was no identification measure.

Results

Mean Evaluations

As in Experiment 1, we computed separate scores on each dimension for each country. Scale reliability was good for both groups and both dimensions (all $\alpha > .75$).

We first analyzed the comparison country ratings. The dimensions scores were analyzed using a 2 (context: Brazil vs. Japan) by 2 (dimension: competence vs. warmth) mixed-model ANOVA with the first factor varying between participants and the second varying within them. As predicted, there was only a significant dimension by context interaction, $F(1, 56) = 204.5, p < .001$. Whereas Brazil was rated as much warmer ($M = 6.02$) than Japan ($M = 4.79$), $F(1, 56) = 123.87, p < .001$, Japan was seen as much more competent ($M = 6.11$) than Brazil ($M = 3.61$), $F(1, 56) = 44.83, p < .001$.

We then analyzed the dimension scores for the target country, Canada, using a 3 (context: Brazil vs. Japan vs. control) by 2 (dimension: competence vs. warmth) mixed-model ANOVA with the first factor varying between participants and the second varying within them. As predicted, the dimension by context interaction was significant, $F(2, 76) = 6.04, p < .005$ (Table 3).

Follow-up analyses revealed that participants in the control context did not rate Canada as being warmer ($M = 5.5$) than competent ($M = 5.58$), $t(20) = -.43, p = .67$. In line with predictions, Canada was judged more competent ($M = 5.55$) than warm ($M = 5.09$) in the Brazil condition, $t(27) = -2.10, p < .05$. In contrast, Canada was judged less competent ($M = 4.94$) than warm ($M = 5.47$) when participants had first been confronted with Japan, $t(29) = 2.45, p < .05$. We also examined the differences between contexts separately for the ratings of Canada's warmth and competence. No significant difference emerged for the evaluation of warmth, $F(2, 78) = 1.54$, *ns*, but participants did not rate Canada equally competent in all contexts, $F(2, 78) = 6.60, p < .005$. Bonferroni tests revealed that Canada was rated as less competent when Japan had initially been evaluated than in the control context, $t(51) = 3.03, p < .02$. Similarly, less competence was attributed to Canada when participants first rated Japan rather than Brazil, $t(58) = 3.15, p < .01$. The control and Brazil contexts did not differ from each other.

Table 3. Ratings of Canada as a function of comparison country and dimension (Experiment 2)

	Comparison country		
	Brazil	Control	Japan
Dimension			
Warmth	5.09 (1.08)	5.5 (0.8)	5.47 (0.93)
Competence	5.55 (0.84)	5.58 (0.66)	4.94 (0.71)

Table 4. Correlations between rating scales (Experiment 2)

	Dimension and group rated		
	Competence comparison group	Warmth comparison group	Competence Canada
Dimension and group rated			
Warmth comparison group	−.467*		
Competence Canada	−.147	.503**	
Warmth Canada	.400*	−.131	.122

*Correlation is significant at the 0.01 level.

Correlational Analyses

To test our correlational hypothesis, we ran two different linear regressions, one with the warmth of the target country, Canada, and the other with its competence as our criterion. The regression analyses followed the same procedure as in Study 1. For the prediction of Canada's competence, the analysis revealed that our overall regression model was significant, $F(7, 50) = 3.01$, $p < .01$. As predicted, the warmth of the comparison country proved to be a significant predictor of Canada's competence, $b = 0.40$, $t(50) = 2.80$, $p < .01$. None of the other predictors were significant, all ps $> .20$. (Table 4 reports the zero-order correlations among all variables.)

Turning to the prediction of Canada's warmth, the overall model was also significant, $F(7, 50) = 2.42$, $p < .04$. In line with predictions, the competence of the comparison country proved to be a marginally significant predictor of the warmth of Canada, $b = 0.37$, $t(50) = 1.91$, $p = .06$. The context by competence of the comparison country interaction was also close to reaching a conventional level of significance, $b = −0.35$, $t(50) = −1.83$, $p < .08$. None of the other predictors was significant, all ps $> .40$ (see Table 4). In follow-up analyses, we looked at the simple effects of the competence of the comparison country in each comparison context when predicting the warmth of Canada. The competence of the comparison country was a significant predictor in the Brazil context, $b = 0.72$, $t(50) = 2.82$, $p < .01$, but not in the Japan context, $b = 0.02$, $t(50) = 0.06$, ns.

GENERAL DISCUSSION

In two experiments, we found substantial support for two forms of compensation effects. Extending work by Judd et al. (2005) and Yzerbyt et al. (2005), we showed that, at the mean level, the pattern of ratings of a target country is strongly influenced by the kind of country to which it is compared. This influence of context was found to be compensatory. At the correlational level, we showed that compensation leads to a positive intergroup and inter-dimension correlation. The higher the comparison group is rated on one dimension, the higher the target group is rated on the other dimension (Demoulin et al., 2007; Yzerbyt et al., 2005).

The added value of the present research to previous research on self-categorization theory (Doosje et al., 1998; Haslam & Turner, 1992; van Rijswijk & Ellemers, 2002) and social creativity (Cadinu & Cerchioni, 2001) is that by focusing on the two fundamental dimensions of social judgment and by understanding the compensatory relationship between them, we were able to predict the influence that context had on both fundamental dimensions. We consider this to be a significant theoretical advance compared to other work on context effects in stereotyping in which the researchers used their intuition to choose dimensions on which their effect would appear but remained generally unable to provide a strong theoretical justification for their choice. The same argument holds for a possible interpretation of our results as being mere contrast effects (Mussweiler, 2007). As a matter of fact, the criteria that the contrast literature proposes to predict whether contrast or assimilation will occur are not always clear cut. Whereas we were able to claim and show that, in a comparison context, compensation occurs on the two fundamental dimensions.

In our opinion, the change of comparison country in our experiments shows that the compensation effect, both at the mean and correlational level, is due to the specific stereotype representation of the comparison countries and not to more general cultural differences. Indeed, Italy and Germany are both countries with a rather individualistic culture whereas Japan and Brazil are both countries with collectivistic culture (Markus & Kitayama, 1991; Triandis, 1995). And yet in each

experiment the two comparison countries lead to very different effects. Finally, we have shown that the compensation effect is at play whether or not the comparison includes the participants' ingroup.

We consider the evidence for a compensation effect at the correlational level to be the most interesting result of this research. First of all, this effect excludes the intervention of a possible artifact due to individual differences in how our participants understood and used the response scales. Had this been the case, there should have been strong positive correlations within group and/or within dimension whereas we found that it is the intergroup inter-dimension correlations that are strong and positive. Extending the results obtained at the mean level, our pattern shows that those participants who give particularly high ratings to the comparison group on one dimension gave particularly high ratings to the target group on the other dimension. This form of compensation effect supports and complements the conclusions from previous work on the negative relation between warmth and competence (Judd et al., 2005; Yzerbyt et al., 2005).

We would argue that social perceivers are motivated to have a balanced view of the social world but that this motivation is actualized within the constraints imposed by the fundamental dimensions of social perception. So, when perceivers give more to one group on one dimension, they will compensate and give more to the other group on the other dimension. This view is further supported by the fact that the compensation effect is found when two groups are involved but *not* when only one is judged (Judd et al., 2005). Interestingly, recent evidence from our laboratory suggests that this motivation to adopt a balanced view of social groups seems to be restricted to situations where the two fundamental dimensions are considered. Thus, no compensation was found when either competence or warmth were coupled with another dimension (i.e. healthiness) (Yzerbyt, Kervyn, & Judd, in press). The judgment of two groups could thus be described as a hydraulic relationship between the groups that are compared on the two fundamental dimensions that people use to perceive their social world. This hydraulic relationship permits one to acknowledge that indeed groups do differ while nevertheless allowing positive judgments, in a dimensional-specific manner, of all groups.

One way to look at this negative relationship is within the context of what has come to be known as System Justification Theory (for a review, see Kay, Jost, Mandisodza, Sherman, Petrocelli, & Johnson, 2007). Kay and Jost (2003) recently showed that exposure to a ''poor but happy'' or ''poor but honest'' stereotype increases system justification. In our view, the negative trait (poor) can be construed in terms of competence without much difficulty and the positive trait (happy or honest) is easily assimilated to warmth (Fiske et al., 2002). To the extent that such mapping between specific stereotypic traits and our more fundamental dimensions makes sense, then Kay and Jost's (2003) findings are totally in line with our compensation effect. Moreover, if it is the case that compensated stereotypes increase system justification, the reverse mechanism is also likely to be at work, namely that the motivation to perceive the system as justified encourages people to perceive their environment in a compensated way.

Limitations and Future Research

The comparison groups that we have used in both experiments were the object of mixed stereotypes. We consider these choices as a necessary first step to show the effects that we hypothesized. It would be interesting in future work to try and disentangle both dimensions by working with comparison groups that vary only on one dimension but are similar on the other.

As for the system justification interpretation, we would like to test whether this hydraulic compensatory process is a deliberate attempt to seek justice in the world. If so, we would speculate that there exist individual differences that are likely to affect the tendency to produce compensation. A second, related, issue concerns whether the compensatory pattern that we have uncovered in intergroup comparisons is a relative automatic and spontaneous judgmental effect, not necessarily resulting from conscious deliberation. It might seem that if the compensation process represents an attempt to seek justice in the world, consistent with a system justification point of view, then it would not be an automatic and non-conscious process. But we are not convinced that this is the case and are currently researching this and related questions.

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