

Short Note

**The dilution effect and group membership:
An instance of the pervasive
impact of outgroup homogeneity**

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Abstract

The present study examines the impact of non-diagnostic individualized information on judgments concerning stereotypic and non-stereotypic behaviours performed by ingroup versus outgroup members. Ninety-five Law School students were confronted with either a lawyer or a teacher in mathematics and were given either the category label alone, the category label plus written individualized informations or the category label plus a videotaped interview of the target. Subjects indicated the likelihood that the target would perform each of four behaviours, two of which were stereotypic and two of which were counter-stereotypic of the target's professional category and this in four different situations. In accordance with classical dilution results (Nisbett, Zukier and Lemley, 1981), individualized information weakened the influence of stereotypes. Also, in line with Park and Rothbart's (1982) work on the outgroup homogeneity hypothesis, judgments were more extreme for the outgroup than for the ingroup target. However, a derivation of Linville's (1982) complexity-extremity hypothesis was not supported: the dilution effect was not more effective for the outgroup than for the ingroup target. Lastly, our data argue against Nisbett et al.'s explanation for the lack of dilution these authors found for stereotype-irrelevant behaviours. Taken together, our results may be seen from an optimistic as well as from a pessimistic point of view. The latter perspective points out the pervasive polarization of judgments about outgroup targets across individualization levels whereas the former stresses upon the dilution taking place for both in- and outgroup targets.

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INTRODUCTION

For years, psychologists have defended the idea that individualized information about outgroup members decreases stereotypes about them (Locksley, Borgida, Brekke and Hepburn, 1981; Locksley, Hepburn and Ortiz, 1982; Nisbett, Zukier and Lemley, 1981). They vary, however, on the kind of information and the specific circumstances under which that information has to be provided in order to be efficient (Borgida and Brekke, 1981). In the present article, we are concerned only with non-diagnostic information and its effects on verbal responses. In other words, we will try to show that information which is not diagnostic of a given category of people may diminish the potency of the stereotype in the written responses of subjects. This phenomenon has been coined 'the dilution effect' by Nisbett and his collaborators (Nisbett *et al.*, 1981). Let us assume that there is a stereotype that most engineers fix their car themselves. According to the dilution effect, an 'engineer with blue eyes and four children' is less likely to fix his car himself than an 'engineer' because the knowledge about the blue eyes and the number of children dilutes the prototypicality of a stereotypic engineer (Tversky, 1977). According to this theory, the more individualized information is provided, the more the dilution effect should operate. This is the first hypothesis tested by the present experiment.

A second question concerns the decreasing use of the stereotypes for both in- and outgroup members due to individualized information. In general, research on the dilution has been conducted on outgroup members or, at least, the 'ingroupness' has never been made salient. It has usually been found that we have more nuanced, or complex, information about the members of our own group than about members of other groups (Mullen and Hu, in press). Therefore, any information, even non-diagnostic, about an outgroup member should carry more weight than the same information about an ingroup member. As this suggests, the dilution effect should be more effective for outgroup members than for ingroup members. This interaction corresponds to our second hypothesis.

A third and related question addresses the issue of the differential polarization between stereotypic and counter-stereotypic information when dealing with ingroup and outgroup members. According to a research by Park and Rothbart (1982) subjects are less likely to differentiate the stereotypic and the counter-stereotypic traits for ingroup than for outgroup members. Their findings were confined to broad categories where the targets were not individualized. Our design allows to verify if this holds true when different amounts of individuating information are provided. According to some researchers (e.g. Linville, 1982), the more we possess information about members of in- and outgroups, the more our view should become nuanced and the less we should find a difference between the two. By specifying the pattern of the interaction, this third hypothesis qualifies the expectations embodied in the second one.

A fourth question concerns the relevance of the stereotype for the target. Apparently, it is not because engineers are more likely to accept high levels of electric shocks than musicians that the lack of tolerance for electric shocks is part of the stereotypes about musicians: Tolerance for electric shocks is linked to the stereotype of engineers but not to that of musicians. It is a pity that in their first studies contrasting, for instance, an engineer and a musician, Nisbett *et al.* (1981) did not provide separate data for the two professions. Such information was however made available when they

compared a person likely or not to be a child abuser. Individualized information decreased the probability that the potential child abuser would really be a child abuser, while the same information did not have any effect on the judgment of a person who was not supposed to be a child abuser. In other words, individuating information dilutes the stereotypes but not the counter-stereotypes. The authors suggest an interesting explanation for that difference: 'Routine, neutral, unexceptional facts about a person such as our non-diagnostic items may be seen as more dissimilar to the unpleasant, undesirable diagnostic items than to the admirable counter-diagnostic items. 'People may be more prepared to find the good and the mundane mixed together in a same person than to believe that the evil and the mundane can coexist' (Nisbett *et al.*, 1981, pp. 271-272). Our design provides a test of this hypothesis because what is stereotypic for members of an ingroup is counter-stereotypic for outgroup members and *vice versa*. If, for both ingroup and outgroup members, a dilution effect on counter-stereotypic (or stereotypic irrelevant) information is not observed while it is for stereotypic (stereotypic relevant) information, Nisbett *et al.*'s hypothesis cannot be supported.

METHOD

Subjects

Ninety-five law undergraduates of the university of Louvain at Louvain-la-Neuve volunteered to participate in the experiment.

Pilot study

In order to ascertain which group of professionals were considered by our subjects as a valid ingroup and which one was seen as an outgroup, an additional sample of 69 law undergraduates answered a pilot questionnaire one month before the experiment started. The questionnaire was introduced as part of a larger survey about students' opinions concerning the university programmes and the channels they opened. Three questions were asked. First, students were to associate different professions and the university programme to which they corresponded most. This question aimed at checking for the programme-associated professional groups. Second, subjects indicated which three university programmes, out of a series of 19, were closest to their own programme and rank ordered them. For the third question, subjects repeated the same operations but for the three programmes which they considered to be least similar to their own. These latter two questions allowed us to determine both the ingroup, law and the outgroup, mathematics, programmes.

Procedure

Subjects were told that the experiment examined which criteria they use when they judge other people and predict their future behaviour and how well they perform in so doing. More specifically, they were instructed to estimate the probability that a given target person would behave in certain ways in some specified situations. This target person was presented as a lawyer (a member of the ingroup) to 48 subjects and as a

teacher in mathematics (a member of the outgroup) to the 47 other subjects. Also, the individuation of the target was varied by way of the information provided to the subjects. In the 'category label' condition, 32 subjects were told that they would have to judge a lawyer (a teacher in mathematics) without receiving any additional information. In addition to the profession, 31 subjects in the 'description' condition were also given the name of the target and a few non-diagnostic informations. Finally, in the 'videotape' condition, 32 subjects saw a videotaped interview where a man introduced himself as a lawyer (teacher in mathematics), gave his name and then mentioned the same informational items as those used in the description situation. These informational items were: 42 years old, lives and works near Brussels, has two children and likes gardening, cooking and pottering about the house.

Once subjects had been confronted with the information about the target person, they received a booklet containing a series of four situations which were supposedly real-life experiences the target person had gone through. After each situation, four possible behaviours were presented. Two of these four behaviours were known to be stereotypic of the category of lawyers and two were known as being stereotypic of the teachers in mathematics. Thus, whatever target was presented to the subject in the first part of the experiment, there were always two stereotypic and two counter-stereotypic behaviours. Subjects had to rate the likelihood that the target would perform each of these behaviours on a 11-point Likert-type rating scale ranging from 1 (=unlikely) to 11 (=likely). In total, the subjects filled in a series of 16 scales.

RESULTS

The data were first analysed in $2 \times 3 \times 2$ mixed-design ANOVA with group membership (ingroup versus outgroup target) and individuation level (category label versus description versus videotape) as between-subjects factors and stereotypic status (stereotypic versus counter-stereotypic behaviours) as a within-subject factor (see Table 1). Not surprisingly, a very significant stereotypic status main effect emerged, $F(1,89) = 44.52, p < 0.0001$. This corresponds of course to the built-in distinction between the stereotypic behaviours ($M = 6.07$) and counter-stereotypic ones ($M = 5.24$). As expected, the individuation level \times stereotypic status interaction was moderately significant, $F(2,89) = 2.76, p < 0.07$. This indicates the presence of the dilution effect in our data. Thus, the differences between judgments for the stereotypic and the counter-stereotypic behaviours are larger when the category labels are presented to the subjects (difference = 1.18) than when the description (difference = 0.85) or the videotapes (difference = 0.46) are provided. However, as can be seen in Table 1, this effect is due to a dilution for the stereotypic behaviours presented to the subjects as opposed to a lack of dilution for the counter-stereotypic behaviours. As a direct consequence, the individuation level proved moderately significant, $F(2,89) = 2.39, p < 0.10$. Thus, in line with our last hypothesis, an unequal amount of dilution took place for the stereotypic and the counter-stereotypic behaviours. The group membership \times stereotypic status interaction was also very significant, $F(1,89) = 24.76, p < 0.0001$, indicating that judgments were much less polarized when they applied to an ingroup as compared to an outgroup member. No other effect was significant.

Because the expected pattern of data was very specific, the omnibus individuation level \times stereotypic status interaction test proved somewhat inappropriate. It was thus

Table 1. Likelihood judgments as a function of individuating level, group membership and stereotypic status

Group membership	Individuating level		
	Category	Description	Videotape
Ingroup (law)			
Stereotypic*	6.13	5.87	5.48
Counter-stereotypic	5.54	5.65	5.64
Outgroup (mathematics)			
Stereotypic	6.61	6.48	5.88
Counter-stereotypic	4.83	4.96	4.79

*Scores range from 1 (=very unlikely) to 11 (=very likely).

decided to test the data by means of a one-degree of freedom contrast and to examine the importance of the residual. Using the fact that subjects provided both judgments for stereotypic and for counter-stereotypic behaviours, a very simple procedure is to test the linearity of the individuation level main effect with the weights in the last row of Table 2. This effect proved clearly significant, $F(1,89) = 5.49$, $p < 0.025$. Also, the residual was negligible, $F(1,89) < 1$, *ns*.

Although not unrelated to the above analyses, separate 2×3 ANOVA analyses were conducted for the stereotypic and the counter-stereotypic behaviours with group membership and individuation level as between-subjects variables. As far as the stereotypic behaviours are concerned, both group membership and individuation level main effects were very significant, $F(1,89) = 8.79$, $p < 0.004$ and $F(2,89) = 6.02$, $p < 0.004$, respectively. Duncan's multiple range test was used to examine the differences among pairs of means. For both the ingroup and the outgroup targets, the videotape judgments proved significantly different from the category label ones. In addition, whereas for the ingroup target the description judgment was not different from any of the judgements provided in the two other conditions, for the outgroup target the description judgment was different from the videotape but not from the category label judgment. For the counter-stereotypic behaviours, however, only a very significant group membership emerged $F(1,89) = 14.11$, $p < 0.0001$, indicating that judgments were much less polarized for the ingroup member than for the outgroup member.

DISCUSSION AND CONCLUSION

The above results suggest some answers to the questions raised in the Introduction. First, at a very general level, the dilution effect is replicated. In other words, the more

Table 2. Contrast weights for ANOVA as a function of individuating level and stereotypic status

Stereotypic status	Individuating level		
	Category	Description	Videotape
Stereotypic	2	1	0
Counter-stereotypic	-1	-1	-1
Sum	1	0	-1

information is provided to the subjects, the less the target is judged as a prototypical representative of its category.

Second, the lack of a significant second-order interaction supports the contention that this dilution effect operates similarly for ingroup as well as for outgroup targets.

Third, the hypothesis of a differential polarization for ingroup and outgroup targets is strongly supported. In line with results obtained by Park and Rothbart (1982) for the category labels only, data show that this phenomenon extends to cases where more individualized information is provided to the subjects. Thus, a member of the outgroup was always more likely to perform stereotypic behaviours and less likely to perform counter-stereotypic behaviours than a member of the ingroup. As indicated by the lack of group membership \times individual level interaction for both the stereotypic and the counter-stereotypic behaviours judgments, the difference between the group members did not vanish when more information was provided to the subjects. To the extent that the latter hypothesis is seen as a direct derivation of Linville's (1982) complexity-extremity hypothesis, the present study does not offer any evidence of this process being at work.

Finally, the pattern of the data replicates the one obtained by Nisbett *et al.* (1981, experiment 4) even though all behaviours were at a moment or another in the position of being counter-stereotypic. Consequently, Nisbett *et al.*'s hypothesis that it is easier to imagine the mundane mixed with the good than with the evil finds no support. To be sure, Nisbett *et al.* offered a second though less favoured explanation, the ceiling effect, for their results but this explanation cannot account any better for the present data. It thus appears that it is the specific status of stereotypicality rather than the valence of information that plays a role. Presumably, a stereotype-relevant information entails different processing operations than stereotype-irrelevant information. One possibility is that the category label does not inform as far as stereotype-irrelevant behaviours are concerned. As a consequence, no differences are observed between the three individuation levels for this specific category of behaviours. Still, it is interesting to point out that the group membership had a strong impact on the judgments of these behaviours. Perhaps, the specific within-subject nature of response-format favoured such a strategy. Indeed, when subjects were confronted with a member of the outgroup and once they had chosen one or two reactions as being likely for this target, the remaining behaviours could hardly appear probable.

On the whole, the present study offers arguments for both an optimistic and a pessimistic view on research endeavours concerned with stereotypes. An optimistic view may stress the fact that dilution took place for ingroup as well as for outgroup targets. As such, this result weakens somewhat the assumed sovereignty of stereotypes in our interactions. On the other hand, a more pessimistic approach would point out the pervasive polarization of judgments when they apply to outgroup members. As a consequence, a member of the outgroup would very seldom be approached in the same terms that a member of the ingroup is despite the availability of non-diagnostic individualized information concerning the target.

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RÉSUMÉ

La présente recherche examine l'impact de l'information individualisée non-diagnostique sur les jugements à propos de comportements stéréotypiques ou non réalisés par des membres de l'in- ou de l'out-groupe. A nonante cinq étudiants en droit, on a présenté un professeur de mathématiques ou un avocat décrit soit à l'aide d'une simple étiquette catégorielle, soit à l'aide de cette étiquette accompagnée d'informations individualisées écrites, soit, enfin, à l'aide de l'étiquette et d'une interview vidéo de l'individu-cible. Les sujets étaient priés d'indiquer la probabilité que la cible accomplisse chacun des quatre comportements proposés, deux étant stéréotypiques et deux non-stéréotypiques de la catégorie professionnelle de la cible, et ce, dans quatre situations différentes. En accord avec les résultats classiques de dilution (Nisbett, Zukier et Lemley, 1981), l'information individualisée a permis d'affaiblir l'influence des stéréotypes. De plus, confirmant les travaux de Park et Rothbart (1982) sur l'hypothèse de l'homogénéité out-groupe, les jugements étaient plus extrêmes pour l'out-groupe que pour l'in-groupe. Par ailleurs, une dérivation de l'hypothèse de complexité-extrémité de Linville n'a pu être confirmée: l'effet de dilution n'était pas plus effectif pour la cible out-groupe que pour la cible in-groupe. Enfin, nos données vont à l'encontre de l'explication fournie par Nisbett et coll. (1981) pour rendre compte de l'absence de dilution obtenue par ces auteurs dans le cas des comportements non-pertinents sur le plan du stéréotype. Globalement, nos résultats peuvent être lus aussi bien dans une perspective optimiste que dans une perspective pessimiste. Ce dernier point de vue souligne la polarisation persistante des jugements à propos des cibles out-groupes à travers les différents niveaux d'individualisation tandis que la première perspective met en évidence le fait que la dilution se produit tant pour des cibles in- que out-groupes.

ZUSAMMENFASSUNG

Die vorliegende Studie untersucht den Einfluss individualisierter, nicht-diagnostischer Information auf die Beurteilung von stereotypischen oder von Eigen- und Fremdgruppenmitgliedern nicht in die Tat umgesetzten Verhaltensweisen. Eine Gruppe von 95 Rechtsstudenten erhielt Informationen über einen Mathematikprofessor oder einen Rechtsberater. Die Information bestand aus entweder einer einfachen kategoriellen Etiquette, aus derselben Etiquette bereichert durch individualisierte, schriftliche Information oder aber aus der genannten Etiquette ergänzt durch ein Video-Interview der Zielperson. Die Vpn wurden ersucht, die Wahrscheinlichkeit anzugeben, mit welcher die Zielpersonen die vier vorgeschlagenen Verhaltensweisen in die Tat umsetzten: zwei dieser Verhaltensweisen waren stereotypisch für die Berufskategorie der Zielperson, die zwei andern waren nichtstereotypisch. Vier

verschiedene Situationen waren gegeben. Im Einklang mit den klassischen Ergebnissen zur Auflösung (dilution, Nisbett, Zukier and Lemley, 1981) hat die individualisierte Information erlaubt, den Einfluss der Stereotypen zu verringern. Die Arbeiten von Park und Rothbart (1982) zur Fremdgruppenhypothese bestätigend, waren die Beurteilungen zudem für die Fremdgruppe extremer als für die Eigengruppe. Andererseits konnte eine Ableitung der Komplexitäts-Extremitätshypothese von Linville nicht bestätigt werden: der Auflösungseffekt war für die Fremdgruppenzielperson nicht wirksamer als für die Eigengruppenzielperson. Schliesslich stehen unsere Daten im Widerspruch zur Erklärung des Fehlens der Auflösung, welche Nisbett und coll. für stereotyp-irrelevante Verhaltensweisen fanden. Im Gesamten können unsere Ergebnisse sowohl von einem optimistischen als auch von einem pessimistischen Standpunkt aus betrachtet werden. Die zweite Perspektive unterstreicht die fortbestehende Polarisierung der Urteile über Fremdgruppenobjekte über Individualisierungsschranken hinaus während die erste Perspektive die Auflösung unterstreicht, die sowohl Eigen- als auch Fremdgruppenobjekte betrifft.

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