

The ingroup overexclusion effect: Impact of valence and confirmation on stereotypical information search

JACQUES-PHILIPPE LEYENS and
VINCENT Y. YZERBYT

Catholic University of Louvain at Louvain-la-Neuve,
Belgium

Abstract

Investigates an old controversy in ethnic identification from the perspective of information-gathering strategies. It was hypothesized that people would request a lot of positive information before deciding that someone is a member of the ingroup. First, a questionnaire measuring the typical features of likeable and unlikeable targets issuing from two linguistic groups (Flemish and Walloon) revealed the existence of four distinguishable sets. These sets corresponded to the orthogonal combination of valence and group membership, i.e. they were organized in terms of two independent dimensions, an evaluative one and descriptive one. The dimensional complexity and evaluative extremity of the 'positive ingroup' and 'negative outgroup' sets were not different. Second, characteristics in each set served to create personality profiles presumably describing real targets. Subjects read these profiles, one feature at a time up to 10 features, and were asked to decide whether the target was a member of their group. They also learned that they could make their decision as soon as they felt confident. In line with Yzerbyt and Leyens' (1991) results, data indicate that subjects requested more information when the evidence was positive or consistent with their ingroup membership than when it was negative or inconsistent. These findings shed new light on earlier work concerning ethnic identification. In the context of the more general question of intergroup relations and their role in person perception, the present results may be interpreted in terms of an ingroup overexclusion effect rather than a vigilance effect or response bias. Thus is added a new effect to the well-known phenomena of ingroup favouritism and outgroup homogeneity.

The present article is based in part on the doctoral dissertation requirements of the second author under the supervision of the first author. This research was supported by USIA grant IA-AEGH-G6192688 and FNRS grant 1.5.323.88F from the Belgian National Science Foundation. Portions of the manuscript were presented at the 8th General Meeting of the European Association of Experimental Social Psychology, Budapest, June 1990.

The authors wish to acknowledge the help of Pascale Steyns, Jean-Marc Leemans and Nicolas Rasson in gathering the data of the present experiments.

Requests for reprints should be sent to Jacques-Philippe Leyens or Vincent Yzerbyt, University of Louvain, Department of Psychology, Voie du Roman Pays 20, B-1348 Louvain-la-Neuve, Belgium, or at the following BITNET/EARN address: LEYENS@BUCLLN11.

INTRODUCTION

The focus of the present paper is on the active strategies of information gathering and testing employed in making a decision about group membership. This objective relates to three different traditions of research that have tended to be conducted independently, albeit at times by the same investigators (for reviews, see Fiske and Taylor, 1991; Higgins and Bargh, 1987; Sherman, Judd and Park, 1989; Wyer and Srull, 1986). The first tradition of research deals with the kind of information used to make a social judgment. Literature on attribution and social cognition has typically considered three main types of information: individualizing or personal information, either under the form of traits or of behaviours; categorical information referring to more or less broad social categories; and information about the situation in which the two previous kinds of information are obtained. The studies have tended to look at the conditions leading to an integration or an absence of integration of these different kinds of information.

The second tradition has been called hypothesis-testing (Higgins and Bargh, 1987; Klayman and Ha, 1987). When they test an hypothesis about a trait or a social category, do people favour diagnostic or biased information, confirming or disconfirming information (Snyder and Gangestad, 1981; Trope and Bassok, 1982)? Contrary to what happens in the first tradition of research, participants of the present studies provide no final judgment, except maybe when the experimenters try to see how well subjects remember the hypothesis.

With a few notable exceptions (Fiske and Neuberg, 1990; Higgins and Bargh, 1987), research on the first, person perception, tradition of research (here called information gathering) has seldom been explicitly enriched with the second, information search, perspective (but see Miller and Turnbull, 1986). One aim of the present studies is to fill this gap. This strategy appears promising as far as our understanding of lay epistemology is concerned (Kruglanski and Ajzen, 1983; Kruglanski and Freund, 1983). It enables a joint treatment of two key aspects of our daily reality. Not only do we form impressions and judgments from the information we get from the environment, but we also build our knowledge by persisting with or giving up the search for evidence.

The third tradition of research is concerned with intergroup relations and their role in the perception of membership (Hamilton, 1981; Hogg and Abrams, 1988; Tajfel and Turner, 1986). Two phenomena have largely been studied and substantiated in that area. The first one concerns ingroup favouritism. Within limits of fairness, people allocate more financial (Tajfel, Billig, Bundy and Flament, 1971) or symbolic (Turner, 1975) resources to members of their own group than to outgroup members, they judge the performance of their group superior (Leyens and Schadron, 1980), they attribute more positive stereotypes to their group (for a review, see Brewer, 1979), etc. The second phenomenon concerns outgroup homogeneity; ingroup members tend to be seen as more variable than outgroup members (see Mullen and Hu, 1989). According to Linville (1982; Linville and Jones, 1980), this should lead to more nuanced judgments about members of one's group, although Marques, Yzerbyt and Leyens (1988; Marques and Yzerbyt, 1988) have shown that more polarized judgments are often obtained for ingroup members.

In this paper, we consider a third phenomenon that we call ingroup overexclusion. Interest for this phenomenon dates back to the post Second World War era. At

that time, some researchers wanted to know whether Jews' faces were recognizable beyond chance level, and whether some judges were better at this task than others (see Tajfel, 1969). Experiences from the recent past led to the selection of anti-Semitic persons as judges. In fact, the choice of anti-semitic judges has very important theoretical implications as values are clearly being introduced in the categories of judgments. The common feature of these studies is that prejudiced and non-prejudiced subjects had to tell from a series of pictures of faces which were Jewish and which were not. While seven studies (Allport and Kramer, 1946; Dorfman, Keeve and Saslow, 1971; Himmelfarb, 1966, experiment 1; Lindzey and Rogolsky, 1950; Pulos and Spilka, 1961; Quany, Keats and Harkins, 1975, experiment 1 and 1) found that anti-Semitic judges could better locate the Jewish faces than non-prejudiced subjects, five studies (Carter, 1948; Elliott and Wittenberg, 1955; Himmelfarb, 1966; Secord and Saumer (1960) for recognition of Jewish or non-Jewish names; Scodel and Austrin, 1956) did not replicate the greater accuracy of the prejudiced judges. More importantly for our present purpose, all but two experiments found a significant relationship between prejudice and number of Jewish identifications: more prejudiced subjects labelled more faces (or names) as Jewish than did less prejudiced judges. The theoretical interpretation of these data has usually been restricted to a controversy about the reasons for the potentially greater accuracy of the anti-Semitic subjects: Is this due to a vigilance against Jews or to an artifact consisting of setting a low criterion of acceptance for Jews? In terms of the vigilance hypothesis, people tend to avoid stimuli that are inimical or harmful. As a consequence, they respond to threatening outgroup members with increased alertness. The response bias explanation states that, because prejudiced people tend to consider more targets as outgroup members than non-prejudiced people, they necessarily end up making more correct identifications of the outgroup members.

These two explanations are integrated in the present paper which argues that the so-called artifact may be considered as a protection of the ingroup for which a high criterion of acceptance is requested. In other words, because their social identity is put at stake by the possibility of a misidentification of the outgroup as an ingroup member, people may need a lot of positive confirming information before taking the risk to say: 'Yes, this is one of us'. We have called this phenomenon the ingroup overexclusion.

Theoretical justification for such a phenomenon comes from research upon the impact of positive versus negative information and of confirming versus disconfirming information (Czapinski, 1986; Fiske, 1980; Kanouse and Hanson, 1971; Peeters, 1971; Peeters and Czapinski, 1990; see Yzerbyt and Leyens (1991) for a detailed analysis). Negative traits are usually more diagnostic than positive ones and, under a necessity oriented-rule, disconfirmation has more influence than confirmation. A necessity rule applies when subjects are guided by an accuracy-goal (Neuberg, 1989) or when the consequences of an error are important (Kruglanski, 1990), and when the target's reactions do not correspond to one's expectations. Within an information search paradigm, this means that people need more positive and confirming information before making a decision than they do about negative and disconfirming information. This is precisely what Yzerbyt and Leyens (1991) obtained in a series of experiments where information was provided one at a time and where subjects could make their decision as soon as they felt confident.

If one adopts Yzerbyt and Leyens' (1991) paradigm, it is possible to test how

many positive or negative stereotypically related attributes are needed to make a decision about the membership status of a person. In Belgium, two linguistic groups which have a long history of conflict are the Walloon and Flemish. Within this context, we provided Walloon subjects with positive or negative information either related to the Flemish or the Walloon stereotypes. Subjects had to decide when they felt they had enough information to classify a given target in the ingroup or not. Besides the accuracy of the decision and the amount of information needed, the level of confidence of the judgments was also measured. As an extension of the ingroup favouritism phenomenon, we hypothesized that the positive ingroup and negative outgroup members would be best recognized, and above chance level. According to past research (Yzerbyt and Leyens, 1991), more positive than negative, and more confirming than disconfirming information would be required to make a decision. This means that, consistent with the ingroup overexclusion phenomenon, we expected most information to be asked when it was positive and confirming of (i.e. stereotypically related to) ingroup membership. In the classical research on this matter (Tajfel, 1969), accuracy about the outgroup membership has been often assumed to be a consequence of the subjects' tendency to easily use the outgroup's category. Still, based on our previous research on the weight of disconfirming and negative information (Yzerbyt and Leyens, 1991), we hypothesized that subjects can be accurate above chance level without the need for much information: this should be the case for the negative outgroup members, for which least information would be asked. We did not measure the degree of prejudice of the subjects but if there is a link between prejudice and overexclusion, it would show indirectly in a negative correlation between the decision for the negative outgroupers and the positive ingroup members: those subjects who reject a negative stereotypical Flemish should be those who accept a positive stereotypical Walloon in the ingroup. Finally, the paradigm allows us to test whether, within cells, the accuracy of the decision, the amount of information needed and the confidence of the decision are correlated.

OVERVIEW OF THE EXPERIMENTS

A series of progressive steps is required to demonstrate the independent contribution of the confirmatory status and the valence aspects of information in the social inference process.

First, typical traits were collected about four specific targets: likeable Walloon, likeable Flemish, unlikeable Walloon and unlikeable Flemish. This was done by means of simple questionnaires. These yielded a series of personality profiles which served as meaningful units organized around diagnostic attributes. Because of our specific hypotheses, we checked for the average polarization as well as for the complexity of the positive confirming and negative disconfirming sets. Indeed, if these sets were not equally extreme in terms of the ratings, valence and differential polarization would obviously be confounded factors. The same applies for the complexity of the information associated with the sets. In other words, it was important to control for both aspects given that, in addition to the mere valence and confirmatory status, they might account for the expected pattern of results.

We then presented subjects with a series of 12 personality profiles. They were to indicate for each profile whether it did or did not correspond to a member of

their ingroup, the Walloons. It was expected that the social inference process would be influenced by both the hypothesis of the subjects and the nature of the information.

THE TRAIT SETS

Method

Subjects

Subjects were 112 undergraduates enrolled at the University of Louvain at Louvain-la-Neuve. They were approached randomly in various libraries located on campus.

Procedure

Two male interviewers introduced themselves to the subjects as students in the Psychology Department and asked the subjects to fill out a questionnaire.

Materials

The questionnaire read as follows: 'We are a group of students taking a class on social perception. We would like to know more about the relationships between the two largest regions of our country, namely Flanders and Wallonia, and thus, between Flemish and Walloon people¹. We would like to know your opinion about one of these two groups. Therefore, we ask you to write down the characteristics you find most important, most frequent and most typical of a Walloon (Flemish) whom you would find likeable (unlikeable). For sure, each person is different and, as a consequence, it is not always easy to describe a group in general terms. Anyhow, it is also true that certain characteristics appear to be more readily associated with certain groups than with others. This is why we ask you to choose the 10 most important, most frequent and/or most typical features of someone belonging to the group of the likeable (unlikeable) Walloons (Flemish)². The questionnaire then continued with a series of 10 blank lines for the subjects to answer to the question. Four different versions of the questionnaire corresponding to the four targets were handed out. A total of 28 subjects filled in each version.

Data analysis

Two independent judges checked for synonym. Only when both agreed on the synonym of two features, they replaced the less frequent trait by its more popular counterpart. The resulting trait \times target matrix was submitted to a Factor Correspondence Analysis (FCA) in order to uncover the trait clusters typically associated with each target. FCA offers an ideal means to retain those characteristics that are highly

¹ Belgium is made up of two 'communities': Flanders and Wallonia. In the first, about five and a half million people speak Dutch (also called Flemish when in its dialect form), a Germanic language. In Wallonia, four and a half million people speak French (although several hundreds of thousands also speak German as their first language), a Latin language. A long tradition exists of political and cultural conflict between these two parts of the country.

diagnostic of a given target.² In the present context, diagnostic characteristics are defined as those traits that subjects mentioned often when describing one target and seldom when describing any of the other targets.

Results

A grand total of 91 different words corresponding to 900 occurrences was selected from the 243 traits originally provided by our subjects. The Factor Correspondence Analysis yielded three factors accounting for, respectively, 71.26 per cent, 15.22 per cent and 13.52 per cent of the total variance of the 91 traits \times four targets matrix.

Table 1. Relative positions of the four categories on the three factors of the Factor Correspondence Analysis

Target category	Factors					
	I		II		III	
	<i>F</i> *	Weight	<i>F</i>	Weight	<i>F</i>	Weight
Walloon						
Likeable	-0.82	18.5	-0.23	6.9	0.57	48.4
Unlikeable	1.09	28.6	-0.61	42.0	-0.23	6.9
Flemish						
Likeable	-0.88	25.1	0.20	5.9	-0.48	38.7
Unlikeable	1.11	27.8	0.66	45.2	0.22	6.0

**F* = Factor score of the *n*th factor.

As shown in the 'Weight' and the 'Factor' columns of Table 1, the first factor differentiates between the likeable and unlikeable targets, regardless of the regional group membership. We thus can conclude that the most important variations in the traits provided by our subjects are to be understood in terms of their evaluative meaning. This first factor accounts for no less than 71 per cent of the variance. Also interesting for our present purposes, the second and third factor explain 15 per cent and 14 per cent of the variance. Factor 2 shows the opposition in terms of unlikeable Walloons and Flemish. Finally, factor 3 accounts for the difference between the likeable Walloons and Flemish. Therefore, these two factors highlight the items that best discriminate between the four categories of targets provided to our subjects, within the opposition that is essentially due to the evaluative label.

It is important to stress that the first factor explains the largest part of the variance. This indicates that, as expected, we have a massive effect of the evaluative label attached to the targets. However, if this information is combined with the scores on the second and third factor in order to extract the information typical of each target, what really gets taken into account are the typical characteristics of the targets

² Factor correspondence analysis (FCA) is a tool for the analysis of data, which has mainly been developed in France (Benzécri, 1973; Cibois, 1987; Lebart, Morineau and Tabard, 1977), but for which there appears to be growing interest in the English-speaking literature (Greenacre, 1984; Nishisato, 1980). FCA is designed to allow a multidimensional representation of the dependence between rows and columns of a given contingency table. The structure of the vector configuration is determined by a method based on a chi-square metric (Tenenhaus and Young, 1985).

both at the evaluative and descriptive levels. Table 2 displays the traits associated with the four different targets.

All traits which loaded highly on factor 1 and on either factor 2 or 3 were retained for the constitution of the specific sets of descriptors for each target. More specifically, for the traits located on the positive side of factor 1 (unlikeable targets), we retained those traits which loaded positively (unlikeable Flemish) or negatively (unlikeable Walloon) on factor 2. Similarly, for the traits which loaded negatively on factor 1 (likeable targets), we kept those highly positive (likeable Walloon) or highly negative (likeable Flemish) on factor 3. Features which were only possible for either the Walloon or the Flemish target were simply discarded. The final set of traits comprised a total of 53 characteristics. Specifically, we retained 12 characteristics of the 46 negative Walloon traits, 13 of the 44 negative Flemish traits, 12 of the 43 positive Walloon traits, and 12 of the 45 positive Flemish traits.

Table 2. Associations with the strongest contributions to the second (F2) and the third (F3) factors of the Factor Correspondence Analysis

Walloon	F2*†	Weight	Co2‡	Flemish	F2	Weight	Co2
Arrogant	-0.42	0.4	0.12	Asocial	0.66	2.1	0.24
Sneaking	-1.36	5.2	0.54	Boring	0.52	0.6	0.17
Steeped in oneself	-0.80	2.2	0.31	Extremist	1.47	4.5	0.57
Liberal	-1.36	3.9	0.54	Fascist	1.47	4.5	0.57
Mean	-0.42	0.4	0.12	Close-minded	0.66	2.1	0.24
Military	-1.36	5.2	0.54	Impolite	1.47	4.5	0.57
Mocking	-0.42	0.4	0.12	Pretentious	0.23	0.6	0.04
Lazy	-0.66	2.4	0.24	Unpleasant	0.52	0.6	0.17
Snobbish	-0.66	1.2	0.24	Bad-tempered	0.52	1.7	0.17
Boasting	-0.55	1.5	0.19	Dirty	0.76	3.2	0.29
Naughty	-0.23	0.2	0.04	Sad	0.66	2.1	0.24
Backbiting	-0.66	1.2	0.24	Inhospitable	0.33	0.4	0.08
Intolerant	-0.42	0.7	0.12	Spineless	0.50	0.7	0.38
				Stingy	0.21	0.3	0.03
	F3*†				F3*†		
Welcoming	0.63	6.0	0.32	Pleasant	-0.51	0.8	0.23
Good-natured	0.48	3.1	0.23	Friendly	-0.36	1.4	0.14
Warm	0.81	4.7	0.44	Attentive	-1.13	3.0	0.56
Generous	0.44	3.0	0.20	Bilingual	-1.13	6.1	0.56
Loquacious	0.74	1.7	0.40	Chatty	-1.13	5.1	0.56
Tolerant	0.21	0.5	0.06	Courageous	-0.82	4.2	0.42
Calm	0.29	0.5	0.10	Sensitive	-0.30	0.2	0.10
Non-racist	0.74	1.7	0.40	Cultured	-0.58	2.4	0.28
Dynamic	0.29	0.5	0.10	Nice	-0.88	6.1	0.45
Original	0.53	0.7	0.26	Intelligent	-0.63	3.2	0.32
Perseverant	0.86	3.0	0.47	Voluntary	-0.51	0.8	0.23
Helpful	0.23	0.5	0.06	Thoughtful	-0.30	0.2	0.10
Jovial	0.29	1.9	0.10	Open-minded	-0.21	0.9	0.05

*Factor 2 stands for the opposition between the traits assigned to the unlikeable targets, and factor 3 stands for the opposition between the traits assigned to the likeable targets, as a function of the target's provenance.

†F = Factor score of the *n*th factor.

‡Co2 = Squared cosine of the item vector and the factor.

THE VALENCE OF THE SETS

The sets of traits yielded by the above procedure ensure that positive or negative traits describe either Walloon or Flemish targets. Of course if one is to examine the impact of mere valence on subjects' search for information, it is necessary to check for the extremity of the positive versus the negative sets of traits because the extremity of information has been shown to play a major role in impression formation and dispositional inference (for a review, see Skowronski and Carlston, 1989).

Method

Subjects

Twenty-five undergraduates from the University of Louvain at Louvain-la-Neuve were approached at random in the University libraries.

Procedure

To ascertain that our selected traits would be equally polarized in terms of their valence, subjects indicated on a series of 7-point Likert-type scales to what extent each of the 53 characteristics revealed something 'very negative' ($= -3$) or very positive ($= +3$) about a person. No reference whatsoever was made concerning the evaluative or the descriptive levels embodied in the traits. In addition, two random presentations and a series of 22 filler traits reduced the systematic order-of-presentation and contrast effects among the 53 traits.

Results

All the ratings concerning the traits for a given combination of descriptive and evaluative levels were averaged. The four sets of traits not only differed significantly from the scale's midpoint, all $t_s > 19$ and $p_s < 0.0001$, but were also significantly different from the endpoints, all $t_s > 11$ and $p_s < 0.0001$. Clearly this shows that, on the average, our traits were polarized although not extremely so. Not surprisingly, the difference between the positive set, $M = 1.84$, and the negative set, $M = -1.68$, came out highly significant, $t(24) = 33.91$, $p < 0.0001$.

Turning to the issue of polarization, the positive sets were not more polarized than the negative sets, difference = 0.16, $t(24) = 1.39$, *ns*. This pattern was replicated within each descriptive level, difference = 0.22, $t(24) = 1.77$, *ns*, and 0.10, $t(24) < 1$, *ns*, for the Walloon and the Flemish positive and negative sets respectively. Also, traits typically assigned to the Walloons were not more polarized than the traits associated to the Flemish, difference = 0.13, $t(24) = 1.72$, *ns*. Most important, the polarization of the positive Walloon set was not different from that of the negative Flemish set, difference = 0.04, $t(24) < 1$, *ns*.

THE COMPLEXITY OF THE SETS

The next important aspect to control for was the level of complexity of our different sets. Some authors (Linville, 1982, Linville and Jones, 1980; Millar and Tesser, 1986; Tesser, 1978) have claimed that knowledge about a stimulus-domain may directly influence extremity of judgments. According to Linville (1982), the less complex a person's knowledge structure of stimuli for a given domain, the more extreme will be the person's evaluations of stimuli from that domain. Because, Linville (1982) argues, people have a more complex representation of their group than of other groups, people will evaluate less familiar outgroup members more extremely than familiar ingroup members.

Our pilot subjects generated sets of traits for the four different labels specifically varying in terms of their group membership. To be sure, the present set of studies was definitely not addressing the complexity/extremity issue. Still, traits provided for the ingroup members may well involve more orthogonal dimensions than those describing outgroup members. That is, more independent dimensions would be needed to account for the interrelationships between traits in the ingroup than in the outgroup (Linville, 1982).

It may be argued that, because more orthogonal dimensions underlie the features attributed to ingroup members, a larger number of traits will be necessary to decide upon a target's group membership when these traits belong to the ingroup as opposed to the outgroup schema. This argument is most important as it precludes any simple conclusion from the finding that more information is used in the set of ingroup as compared to outgroup traits, to decide that the target is an ingroup member.

Method

Subject

Fifty-eight undergraduates from the University of Louvain at Louvain-la-Neuve were approached at random in the University libraries and asked if they agreed to fill in a questionnaire.

Procedure

Because our hypotheses concerning the impact of valence and confirmatory status (Yzerbyt and Leyens, 1991) related mainly to the positive Walloon and the negative Flemish targets, the two sets of traits pertaining to these targets constituted the stimuli in the present questionnaire. To equalize numbers of traits in both sets, we randomly discarded one trait out of the negative Flemish list. For each of the two sets of traits, a questionnaire was prepared including all possible pairs of traits. Subjects indicated on a series of 5-point Likert-type scales to what extent each of the 78 pairs of traits revealed something 'very similar' ($= -2$) or 'very different' ($= +2$) about a person. Again, no reference was made concerning the evaluative or the descriptive levels embodied in the traits. Twenty-nine subjects received the questionnaire displaying the positive Walloon set whereas the remaining subjects read the negative Flemish set.

Results

All the ratings for a given pair of traits were averaged over the 29 subjects. For each set of traits, the score of each pair was entered into a matrix of dissimilarities. The two resulting matrices were submitted to multidimensional scaling analysis using Kruskal's (1964) non-metric euclidean approach (Takane, Young and de Leeuw, 1977). The squared correlation index (RSQ in Alsca, 1985) in the one-, two-, three- and four-dimensional solution reached 0.616, 0.881, 0.956 and 0.975 for the positive Walloon set, whereas as much as 0.545, 0.747, 0.883 and 0.939 of the variance of the disparities was explained for the negative Flemish set.

In sum, one matrix of dissimilarities does not appear to be less complex than the other. Moreover, if any difference should exist, it would be in the direction opposite to the one expected by the complexity-extremity approach.

Discussion

We have selected four sets of traits which correspond to a typical configuration for each target label. Also, all four sets are reasonably polarized in terms of the attached evaluative meaning. Positive sets are no less polarized than negative sets. This pattern is replicated for both the Flemish and the Walloon targets. Finally, the two most contrasting targets did not generate different levels of polarization. As indexed by the number of orthogonal dimensions necessary to account for the trait interrelationships, the complexity of the positive Walloon set and the negative Flemish set was comparable. In sum, these sets may be used to make up a series of rather realistic but also highly typical personality profiles. These materials thus constituted the basis of our experiment.

THE SEARCH FOR INFORMATION

Method

Subjects

Thirty-five undergraduates from the University of Louvain at Louvain-la-Neuve volunteered to participate.

Procedure

The subjects arrived at the laboratory one at a time and were seated in front of a micro-computer. There, a male experimenter explained that the research was actually that of a team working on the campus of the Flemish university, located 20 miles away from the Walloon campus. Walloon experimenters had been asked to help carry out the study because the subjects had to be Walloons and, therefore, language problems might have appeared if the experimenter had been Flemish. To avoid forgetting the details of the instructions, the experimenter explained that he would start a cassette-tape that contained all relevant information about the experiment.

Instructions started as follows: 'The starting point of our study is the recent change in the Belgian Constitution. It appears that this new Constitution might have a strong impact on the way employers hire people. In other words, one might be interested in knowing whether somebody is a Walloon or not in order to hire the person. The present research aims at knowing whether the information about the mere personality of the applicant would suffice to give insight about linguistic origin. A first step in our research has been to examine whether Belgians have different characteristics depending on the region they come from. We now try to study the opposite phenomenon, that is, is it possible to tell whether somebody is a Walloon basing one's judgment on a series of personality characteristics'.

The 'tape' then asked the subjects to imagine that they were in the position of a recruiter working in a selection department, that they were confronted with information about the personality of job applicants, one characteristic after the other, and that they had to tell who was a Walloon. Fifteen candidates for the job had supposedly been screened by experts who provided the 10 aspects that best described them. The task of the subjects was to select the persons, out of the 15 candidates, who fit their specific view of the Walloons. Also, the subjects were informed that, to the extent that they could make a confident decision, they were not expected to use all 10 pieces of information that concerned each candidate. At the end of the tape, the experimenter answered all remaining questions about the instructions and the use of the computer. He then started the computer program and left the room.

For each of the 15 candidates, the computer displayed a maximum of 10 traits, one trait at a time. When a trait appeared on the screen, the subject was always reminded of the identification number of the candidate and had to indicate whether additional information, that is, another trait, was needed or whether the candidate was or was not a Walloon. Once a decision had been made, the screen cleared and the subject was to indicate a level of confidence for the decision. When all candidates had been presented to the subjects, they were informed that the experiment was over and were thoroughly debriefed.

Materials

First, 12 experimental lists of 10 traits were built by choosing traits out of the 53 traits comprising the experimental set. Specifically, a program was written so that, for each subject, three different profiles were built for each combination of the valence and confirmatory levels by randomly selecting traits out of the set of traits belonging to the relevant combination. Also, traits could appear more than once between profiles of a given set but never within a profile. Traits of a given set were never used in making up a profile representing another combination of valence and confirmatory levels.

Second, three filler profiles were built selecting traits that had never been proposed by our trait sets subjects in their answers to the questionnaire. Two of the filler lists were always presented first. The 12 experimental lists were then put in a random order. The last filler list concluded the presentation. This prevented subjects from hurrying up for the end of the experiment while working on an experimental list.

Scores for the three profile replications were averaged. The basic design was thus a 2 (Confirmatory Status of the Profile: confirming [Walloon] versus disconfirming

[Flemish]) \times 2 (Valence of the Profile: positive versus negative) with the two factors being within-subject variables.

Dependent measures

For each of the 15 candidates, the subject provided three dependent variables. First, the decision made by the subjects was either that the profile was that of a Walloon (= +1) or a Flemish (= -1). The level of confidence for the decision was also recorded and ranged from 'moderate' (= 1) to 'very high' (= 9). The sheer number of traits used, ranging from one (= 1) to all (= 10), constituted the third dependent variable.

Results

Decisions

Subjects' decisions were transformed into percentages. Thus, a score of 100 per cent means that all three profiles were judged to be Walloons by all our subjects. In contrast, a score of 0 per cent means that no one subject found any of the three candidates to be a Walloon.³

A first check on subjects' decisions can be made by way of the three filler profiles. Because these fillers were actually made out of a series of non-diagnostic traits, we expected the decisions to be distributed around the chance level answer. This is what happened. Our subjects did not indicate any clear tendency to consider the candidate as a Walloon or not, $t(34) = 1.14$, $p > 0.26$, two-tailed.

Table 3. Percentages of Walloon candidates as a function of valence and confirmatory status of the list

Confirmatory status	Valence	
	Positive	Negative
Confirming	71.43*	42.86
Disconfirming	41.90	28.57

*Scores range from 0 (= no one candidate seen as Walloon) to 100. (= all three candidates seen as Walloons)

Table 3 displays the decisions concerning the four different kinds of experimental targets. In order to analyse these data, we performed a 2 (confirming versus disconfirming evidence) \times 2 (positive versus negative evidence) repeated measures ANOVA. Clearly, results are in line with our hypothesis. Only the confirmatory status and the valence main effects proved significant. Thus, whether the evidence shown corresponded to a Walloon or to a Flemish strongly affected our subjects' decisions, $F(1,34) = 14.32$, $p < 0.001$. Also, compared to the chance level answer, their decisions were in the expected direction for both kinds of targets. That is, subjects accepted the candidates as Walloons when the profile displayed confirming evidence, $M = 57.15$

³ Because we always had very specific expectations in terms of our subjects' decisions, all *t*-tests to be presented here take 50 per cent as the null hypothesis answer and are one-tailed except when explicitly indicated.

per cent, $t(34) = 1.87$, $p < 0.04$. Similarly, when the traits were actually more typical of Flemish people, the subjects made their decision accordingly, $M = 35.24$ per cent, $t(34) = 3.96$, $p < 0.0002$. In addition, subjects' decisions were clearly affected by the valence of the information, $F(1,34) = 7.56$, $p < 0.01$. On the one hand, the subjects judged that the person they were confronted with was Flemish when they saw negative evidence, $M = 35.72$ per cent, $t(34) = -2.95$, $p < 0.003$. On the other hand, when the information they received was positive, subjects tended to see the candidates as Walloons, $M = 56.67$ per cent, $t(34) = 1.60$, $p < 0.006$.

Taking a closer look at the cell means displayed in Table 3, the confirming-positive and the disconfirming-negative cells are not surprising. The first combination clearly resulted in a judgment of the target as a Walloon, $t(34) = 4.03$, $p < 0.0002$, whereas the second led the subjects to the opposite decision, $t(34) = -3.58$, $p < 0.006$. For the confirming-negative and the disconfirming-positive combinations, subjects displayed no clear judgment, $t(34) = -1.13$, *ns* and $t(34) = -1.42$, *ns*, respectively.

Lastly, it is possible to see whether the targets were globally appraised as Walloon or as Flemish. Interestingly, our subjects tended to report less often that the target was a Walloon, $M = 46.19$ per cent, than Flemish $M = 53.81$ per cent, $t(34) = -1.57$, $p < 0.07$.

Weight of the traits

Although the job of selecting the Walloons out of the presented sample has been accomplished rather successfully, it is important to check for the amount of evidence requested to make the decision. Because of the specific variance pattern, we transformed the data into reciprocals. Thus, the data correspond to the weight of each piece of information. For instance, the use of three traits to make a given decision indicates a weight of 0.333 for each item requested by the subject. The average weight of the traits across all four conditions turned out to be 0.337.

The weight of the traits as evidenced by subjects' requests for information in the different combinations of confirmatory status and valence of the information were submitted to a 2 (confirming versus disconfirming evidence) \times 2 (positive versus negative evidence) repeated measures ANOVA. As expected, the confirmatory status and the valence main effects both proved significant, $F(1,34) = 5.39$, $p < 0.03$, and $F(1,34) = 4.64$, $p < 0.04$, respectively. In line with our predictions (see Table 4), confirming traits indeed carried less weight. Thus, our subjects asked for more information when there was a descriptive fit between the features of the candidates and the ingroup ($M = 0.305$), than when evidence clearly contradicted a possible fit between the traits describing the candidates and the subject's group ($M = 0.370$). Also, on the whole, traits carried less weight when they belonged to positive candidates and were thus positive ($M = 0.316$) than when they issued from negative candidates ($M = 0.359$). No significant interaction came to qualify this pattern, $F(1,34) < 1.00$, *ns*. Globally, our subjects used the least information to make a decision when the traits were typical of an unlikeable Flemish. This unquestionably shows that the traits had the largest impact when they contradicted the hypothesis at both the evaluative and the descriptive levels, that is, they were simultaneously negative and disconfirming. Even more important and consistent with our hypotheses, our subjects requested most information when they were confronted with traits that depicted a stereotypic positive ingroup member.

Table 4. Weight of the traits as a function of their valence and confirmatory status

Confirmatory status	Valence	
	Positive	Negative
Confirming	0.291*	0.320
Disconfirming	0.341	0.398

*The maximum weight for a trait was a value of 1.00 (one trait sufficed for each of the three candidates) and the minimum weight was 0.10 (10 traits were needed for each of the three candidates).

Confidence

Confidence ratings were also examined by way of a 2 (confirming versus disconfirming evidence) \times 2 (positive versus negative evidence) repeated measures ANOVA. The data reveal no significant main effects nor interaction (all F s $<$ 1, and all p s $>$ 0.70). The global average of 5.43 indicates that subjects were confident about their decisions.

In sum, our subjects were no less confident when they rejected the Flemish attributes candidates than when they accepted the Walloon attributes candidates despite the greater demand for traits in the latter case. Similarly, our subjects expressed the same level of confidence in their decisions whether the candidates displayed all-negative or all-positive information.

Correlational evidence

Next, a series of within-combination/between-dependent variables and between-combinations/ within-dependent variable correlations were performed.

First, the four decisions were correlated with their correspondent confidence data. This allows a look at whether the lack of relationship between decision and confidence found above replicates within conditions. Clearly, the confidence of our subjects does not appear to be related to the direction of the decision, r s = 0.13, 0.15, 0.09 and -0.05 , all p s $>$ 0.40, for the Walloon positive, Walloon negative, Flemish positive and Flemish negative candidates, respectively.

We also correlated the four decisions with the information weight data. We expected that no relation would obtain. Indeed, strictly speaking, it is important to show that the subjects are no more accurate when they ask for more information than when less information is gathered about the candidate. Without any doubts, our data support this view, r s = 0.01, -0.24 , -0.01 and 0.17, all p s $>$ 0.16, for the Walloon positive, Walloon negative, Flemish positive and Flemish negative candidates respectively. The subjects' decisions were not dependent upon the number of items requested. As a consequence, the subjects were no less accurate when they asked for few items than when they requested numerous pieces of information.

Of all between-combinations correlations, those about subjects' decisions carry the most information. Interestingly, a highly significant correlation emerged between the decisions concerning the two most extreme candidates: the positive Walloon and the negative Flemish, $r = -0.57$, $p < 0.0004$, revealing that the more the subjects accepted the positive Walloon, the more they rejected the negative Flemish.

The other between-combinations/within-dependent variable correlations con-

firmed the high degree of correlation for the confidence as well as for the weight data for each pair of combinations, average $r_s = 0.64$ and 0.40 , respectively.

GENERAL DISCUSSION

The above data largely support our hypotheses. First, subjects can better detect a good ingroup and a bad outgroup member, than the reverse. This result is in accordance with the classical ingroup favouritism effect. Second, to make a decision, people need more confirming and positive information than disconfirming and negative evidence. In our paradigm, this leads to a manifestation of an ingroup overexclusion effect. Third, the more subjects reject a bad outgroup member, the more they accept a good ingroup member; this finding can be interpreted as a sign of the positive relation between prejudice and ingroup overexclusion. Because they shed some light on previous research and open new avenues for investigation, we will now review each of these results.

Even when all information capable of clearly separating the ingroup from the outgroup was omitted, it appears that our trait sets subjects produced stereotypes that could be detected not only by a multivariate analysis but also by other subjects of the same population. This latter statement must, however, be qualified. Indeed, our subjects did not recognize the good outgroup and the bad ingroup members above chance level. They could do it for the bad outgroup and the good ingroup members, but one should note that the accuracy scores were still far from being perfect. These results cannot be attributed to differences in evaluativeness of the information because it was equally positive or negative for both the ingroup and outgroup members. The lack of complete accuracy is undoubtedly due to the weakness of the stereotypes. In fact, the authors were quite surprised that the subjects could even make that sensible a decision. That the subjects are better than chance in recognition reflects an ingroup favouritism phenomenon. This is a new way to measure the phenomenon adding to an already very long list.

These results regarding the accuracy data do not conform to those obtained by Yzerbyt and Leyens (1991) with a similar paradigm. In two studies, these authors found that their subjects were more accurate when they rejected than when they accepted someone for a given hypothesis. This is probably due to the type of information received to make a decision. In the experiments by Yzerbyt and Leyens (1991), the information had no special value other than being more or less diagnostic. Here, the information is not only more or less diagnostic but also more or less desirable for the subjects themselves. The fact that there is no difference between the good ingroup and the bad outgroup member in terms of accuracy shows that values can override the effects of rejection when 'other things are equal'.

As expected, subjects requested more positive and confirming information than negative and disconfirming to feel confident enough to make a decision. Thus subjects were quickest to judge that a bad Flemish did not belong to their group — which is not surprising — and slowest to decide that a good Walloon was indeed a member of their ingroup — which is much less obvious. We have coined this latter phenomenon an 'ingroup overexclusion'. Most evidence was requested to accept any given target as an ingroup member when in fact there was a fit both at the descriptive and evaluative level. As mentioned in the Introduction, data relevant to this phenome-

non go back to the post Second World War era but have never attracted much theoretical attention. Actually, the concern then was the potentially better accuracy of prejudiced subjects in recognizing Jewish faces (or names). Lindzey and Rogolsky (1950) were the first ones to link that finding with the New Look school: '... in situations which are highly threatening and highly exacting, the most adaptive response is frequently the one that takes most *vigilant* account of reality' (Bruner and Postman, 1948, p. 94., italics theirs). Thus, according to Lindzey and Rogolsky (1950), 'the bigot, while perceiving *selectively* the multitude of stimuli that any person or persons present, is particularly sensitive or vigilant to stimuli that will permit the correct identification of Jew and non-Jew ... As a further function of this *vigilance*, appropriate stimuli are *accentuated* by the anti-Semite' (pp. 50-51, italics theirs). Later, interpretations favoured either this vigilance hypothesis (Pulos and Spilka, 1961; Quamy *et al.*, 1975) or a response bias, an artifact (Himmelfarb, 1966; Dorfman *et al.*, 1971).

Our data show that there may still be another explanation of the phenomenon which focuses on the ingroup rather than on the outgroup. It is proposed that subjects' identity is really what matters. In other words, because people's identity in part rests upon the group they are connected with (Tajfel and Turner, 1986), they value very much their ingroup. In terms of the ingroup overexclusion effect, this is revealed in two mechanisms.

First, there is the selection of the hypothesis to be tested. Social identification leads to an inevitable confound between ingroup membership and confirmatory evidence. Had we asked our French-speaking subjects to decide whether the target was Flemish (rather than a Walloon, as was the case), we would not have expected that most information was needed for a positive Flemish. It has been well documented by Tversky (1977) that salient entities are taken as point of reference, creating an asymmetry in perception. Codol (1987) has repeatedly shown that the self is such a salient, prototypical, entity, and Serino (1988) has extended that finding to the ingroup. Thus, asking Walloon subjects to decide if a target is Flemish would not unconfound ingroup membership and confirming evidence; it would actually test another hypothesis related to asymmetry in social perception (for a review, see Leyens, 1990).⁴

Second, identification with the ingroup also affects information gathering strategies. Because people's self-definition is put at stake, a necessity-rule prevails: both valence and confirmatory status are operating in the present context. People want to protect their group from undesirable outsiders, and, as a consequence, they feel the need to be very well-informed before attributing the ingroup status. When the adequate information is lacking, they prefer not to accept someone and thus they may identify more often the 'sneakers'. In terms of Bruner, Goodnow and Austin (1956), people apply a sentry rather than an accuracy matrix. Indeed, in Belgium, being identified as a Walloon or a Flemish is not innocuous and our procedure purposely made the intergroup context particularly conspicuous.

Of interest in the present study is the significant negative correlation between the decision for the bad outgroup member and for the good ingroup member. Its

⁴ One possible way of directly testing this hypothesis which would help to unconfound the nature of the decision and the group membership of the target person would be to ask the Walloon subjects to check whether the target is a Flemish or not, rather than Walloon or not and to use think-aloud data to show that the subjects are actually answering the question 'is (s)he a Walloon?'

size is quite high and it is the only significant correlation involving a decision. Clearly, this result heads in the direction predicted by a prejudice hypothesis. It remains for future research to better control the level of prejudice of the subjects in order to fully understand its impact on the hypothesis formulation and information gathering processes.

Our Walloon subjects tended to perceive more outgroup than ingroup members, whereas, in past research, more pictures were labelled as non-Jewish than as Jewish, even by anti-Semitic judges. One possible explanation for this discrepancy between the two different contexts is that subjects use simply a base-rate criterion: subjects may rely on an implicit estimate of the number of people of both groups contained in the sample based on the global populations. In earlier U.S. studies, the relative sizes of both populations are clearly in favour of the non-Jewish ingroup members. On the contrary, because there are about 10 per cent more Flemish than Walloons in the global Belgian population, the present context would lead the subjects to assume that the sizes of the two groups are equal, if not to the advantage of the outgroup.

Clearly, our paradigm was designed to tap information gathering strategies. Subjects saw a small number of targets, were only confronted with univocal information (i.e. evidence concerning any given target was either always confirmatory or always disconfirmatory), and they were lead to make a decision when they felt confident enough. Taken together, these characteristics make it extremely difficult for the base rates to influence subjects' decisions. For the same reasons, we did not expect the ingroup overexclusion effect to have manifest consequences as far as the relative number of ingroup and outgroup members are concerned. Two sets of data are worth considering with regard to the link between the decisions of group membership and the search for information. First, these two variables were not significantly correlated at the target level, as already mentioned above. Second, a similar lack of relation emerged at the level of all 12 targets ($r=0.17$, $p>0.33$). The extent to which base rates moderate the ingroup overexclusion effect, leading people to use more stringent criteria, is a question worth pursuing. It is our opinion that, provided some adjustments, the present paradigm has much to offer for studying these matters. A reasonable prediction is that the necessity-rule will operate even more when people belong to minority groups.

CONCLUSIONS

The present work addresses the potential role of information search strategies on the perpetuation of social stereotypes and, more globally, on intergroup relations. Recent research on stereotyping and intergroup relations has testified to the major impact of knowledge about actors' group membership on observers' perceptions (Hamilton and Troler, 1986; Hogg and Abrams, 1988; Messick and Mackie, 1989; Stephan, 1985). The data traditionally reveal the existence of ingroup favouritism and outgroup homogeneity. Undoubtedly, group membership also seems to provide observers with rich sets of background information (Katz and Braly, 1933). Assumptions based on group membership have often been proposed as the origin for judgments in the absence of other relevant individuating information (Locksley, Borgida, Brekke and Hepburn, 1980; Locksley, Hepburn and Ortiz, 1982). Stereotypes have

also been found to bias information processing (Darley and Gross, 1983; Devine, 1989; Sagar and Schofield, 1980). Finally, it has been suggested, that along with situational and behavioural information, social stereotypes may play an important role in dispositional inference (Kulik, 1983; Trope, 1986).

Building upon earlier work on information search processes (Yzerbyt and Leyens, 1991), the present experiments aimed at better understanding the effects of valence and confirmation on inferences about group membership. Indeed, to the extent that information is positive and congruent with the observer's stereotype about the ingroup, the target would be seen as belonging to the ingroup. On the contrary, negative and incongruent information should lead to the classification of the target as an outgroup member. In addition, observers would be expected to request the most information when the target conforms to the positive ingroup member and the least information when the evidence is negative and typical of an outgroup member.

The present findings lead to a reconsideration of the vigilance interpretation given to the classical finding that anti-Semites can better perform at a Jewish versus non-Jewish face-recognition task. This ingroup overexclusion phenomenon can be explained by concentrating on the value attached to the ingroup rather than on the perceptual features of the outgroup.

It is hoped that this overexclusion effect will help in accounting for more recent findings reported in the social cognition literature. For instance, research has indicated that experts sometimes exhibit a tendency to remember more disconfirming information than do novices (Borgida and DeBono, 1989). Yet, often, there may well be a confound between the status of the subjects as experts or novices concerning a given domain, and the respective group membership of the judge and the target. In other words, the harshness displayed by the experts could be a manifestation of protection of the profession.

Surprisingly enough, stereotypes have, to our knowledge, never been examined in the context of information-gathering process. As such, they may play an important role in the information search serving as guides for the interpretation of incoming information. When people want to know whether a given target is to be categorized as an ingroup or outgroup member, they most probably rely on the available stereotypical evidence. The present research thus highlights a new set of factors that potentially contribute to the perpetuation of social stereotypes.

REFERENCES

- Allport, G. W. and Kramer, B. M. (1946). 'Some roots of prejudice', *Journal of Psychology*, **22**: 9-39.
- Alscal (1985). *SUGI Supplementary Library User's Guide*, SAS Institute Inc., Cary, NC.
- Benzécri, J. P. (1973). *L'analyse des Données: L'analyse des Correspondances* (Data analysis: T. 2, Correspondence analysis), Dunod, Paris.
- Borgida, E. and DeBono K. G. (1989). 'Social hypothesis testing and the role of expertise', *Personality and Social Psychology Bulletin*, **15**: 212-221.
- Brewer, M. B. (1979). 'Ingroup bias and the minimal group paradigm: A cognitive-motivational analysis', *Psychological Bulletin*, **86**: 307-324.
- Bruner, J. S., Goodnow, J. J. and Austin, G. A. (1956). *A Study of Thinking*, Wiley, New York.

- Bruner, J. S. and Postman, L. (1948). 'An approach to social perception'. In: Dennis, W. (Ed.) *Current trends in social psychology*. Univ. of Pittsburgh Press, Pittsburgh.
- Carter, L. F. (1948). 'The identification of "racial membership"', *Journal of Abnormal and Social Psychology*, **43**: 279-286.
- Cibois, P. (1987). *L'analyse Factorielle* (Factor analysis), P.U.F., Paris.
- Codol, J.-P. (1987). 'Comparability and incomparability between oneself and others: Means of differentiation and comparison reference points', *Cahiers de Psychologie Cognitive/European Bulletin of Cognitive Psychology*, **7**: 87-105.
- Czapinski, J. (1986). 'Informativeness of evaluation in interpersonal communication: Effects of valence, extremity of evaluations and ego-involvement', *Polish Psychological Bulletin*, **17**: 155-164.
- Darley, J. M. and Gross, P. H. (1983). 'A hypothesis-confirming bias in labelling effects', *Journal of Personality and Social Psychology*, **44**: 20-33.
- Devine, P. G. (1989). 'Stereotypes and prejudice: Their automatic and controlled components', *Journal of Personality and Social Psychology*, **56**: 5-18.
- Dorfman, D. D., Keeve, S. and Saslow, C. (1971). 'Ethnic identification: A signal detection analysis', *Journal of Personality and Social Psychology*, **18**: 373-379.
- Elliott, D. N. and Wittenberg, B. H. (1955). 'Accuracy of identification of Jewish and non-Jewish photographs', *Journal of Abnormal and Social Psychology*, **51**: 339-341.
- Fiske, S. T. (1980). 'Attention and weight in person perception: The impact of negative and extreme behavior', *Journal of Personality and Social Psychology*, **38**: 889-906.
- Fiske, S. T. and Neuberg, S. L. (1990). 'A continuum of impression formation from category based to individuating processes: Influences of information and motivation on attention and interpretation'. In: Zanna, M. P. (Ed.) *Advances in Experimental Social Psychology*, Vol. 23, Academic Press, New York.
- Fiske, S. T. and Taylor, S. E. (1991). *Social Cognition*, McGraw-Hill, New York.
- Greenacre, M. J. (1984). *Theory and Applications in Correspondence Analysis*, Academic Press, New York.
- Hamilton, D. L. (1981). *Cognitive Processes in Stereotyping and Intergroup Behaviour*, Erlbaum, Hillsdale, NJ.
- Hamilton, D. L. and Troler, T. K. (1986). 'Stereotypes and stereotyping: an overview of the cognitive approach'. In: Dovidio, J. and Gaertner, S. (Eds) *Prejudice, Discrimination and Racism*, Academic Press, New York.
- Higgins, E. T. and Bargh, J. A. (1987). 'Social cognition and social perception'. In: Rosenzweig, M. R. and Porter, L. W. (Eds) *Annual Review of Psychology*, Vol. 38, Annual Review, Palo Alto, CA, pp. 369-425.
- Himmelfarb, S. (1966). 'Studies in the perception of ethnic group members: I. accuracy, response bias, and anti-semitism', *Journal of Personality and Social Psychology*, **4**: 347-355.
- Hogg, M. A. and Abrams, D. (1988). *Social Identification: A Social Psychology of Intergroup Relations and Group Processes*, Routledge, London.
- Kanouse, D. E. and Hanson, L. R. (1971). 'Negativity in evaluations'. In: Jones, E. E., Kanouse, D. E., Kelley, H. H., Nisbett, R. E., Valins, S. and Weiner, B. (Eds) *Attribution: Perceiving the Causes of Behaviour*, General Learning Corporation, Morristown, NJ, pp. 47-62.
- Katz, D. and Braly, K. (1933). 'Racial stereotypes in one hundred college students', *Journal of Abnormal and Social Psychology*, **28**: 280-290.
- Klayman, J. and Ha, Y. (1987). 'Confirmation, disconfirmation and information in hypothesis testing', *Psychological Review*, **94**: 211-228.
- Kruglanski, A. W. (1990). 'Motivations for judging and knowing: Implications for causal attribution'. In Higgins, E. T. and Sorrentino, R. M. (Eds) *Handbook of motivation and cognition: Foundations of social behavior*, Vol. 2, Guilford Press, New York.
- Kruglanski, A. W. and Ajzen, I. (1983). 'Bias and error in human judgment', *European Journal of Social Psychology*, **13**: 1-44.
- Kruglanski, A. W. and Freund, T. (1983). 'The freezing and unfreezing of lay-inferences: effects of impression primacy, ethnic stereotyping and numerical anchoring', *Journal of Experimental Social Psychology*, **19**: 448-468.

- Kruskal, J. B. (1964). 'Nonmetric multidimensional scaling', *Psychometrika*, **29**: 1-27 and 115-129.
- Kulik, J. A. (1983). 'Confirmatory attribution and the perpetuation of social beliefs', *Journal of Personality and Social Psychology*, **44**: 1171-1181.
- Lebart, L., Morineau, A., and Tabard, N. (1977). *Techniques de la Description Statistique* (Statistical description techniques), Dunod, Paris.
- Leyens, J.-Ph. (1990). 'Jean Paul Codol's approach to social psychology. When social cognition resembles social cognition more than social cognition resembles social cognition', *Revue Internationale de Psychologie Sociale*, **3**: 253-272.
- Leyens, J.-Ph. and Schadron, G. (1980). 'Porque discriminam mais os grupos que os individuos? Categorização ou pretexto?' *Psicologia*, **1**: 161-168.
- Lindzey, G. and Rogolsky, S. (1950). 'Prejudice and identification of minority group membership', *Journal of Abnormal and Social Psychology*, **45**: 37-53.
- Linville, P. W. (1982). 'The complexity-extremity effect and age-based stereotyping', *Journal of Personality and Social Psychology*, **42**: 193-211.
- Linville, P. W. and Jones, E. E. (1980). 'Polarized appraisals of out-group members', *Journal of Personality and Social Psychology*, **38**: 689-703.
- Locksley, A., Borgida, E., Brekke, N. and Hepburn (1980). 'Sex stereotypes and social judgment', *Journal of Personality and Social Psychology*, **39**: 821-831.
- Locksley, A., Hepburn, C. and Ortiz, V. (1982). 'Social stereotypes and judgments of individuals: An instance of the base-rate fallacy', *Journal of Experimental Social Psychology*, **18**: 23-42.
- Marques, J. M. and Yzerbyt, V. Y. (1988). 'The black sheep effect: Judgmental extremity towards ingroup members in inter- and intra-group situations', *European Journal of Social Psychology*, **18**: 287-292.
- Marques, J. M., Yzerbyt, V. Y. and Leyens, J.-Ph. (1988). 'Extremity of judgments towards ingroup members as a function of ingroup identification', *European Journal of Social Psychology*, **18**: 1-16.
- Messick, D. M. and Mackie, D. M. (1989). 'Intergroup relations'. In: Rosenzweig, and Porter, L. W. (Eds) *Annual Review of Psychology*, Vol. 40, Annual Review, Palo Alto, CA.
- Millar, M. G. and Tesser, A. (1986). 'Thought-induced attitude change: the effects of schema structure and commitment', *Journal of Personality and Social Psychology*, **51**: 259-269.
- Miller, D. T. and Turnbull, W. (1986). 'Expectancies and interpersonal processes'. In: Rosenzweig, M. R. and Porter, L. W. (Eds) *Annual Review of Psychology*, Vol. 37, Annual Review, Palo Alto, CA.
- Mullen, B. and Hu, L. (1989). 'Perceptions of ingroup and outgroup variability: A meta-analytic integration', *Basic and Applied Social Psychology*, **10**: 233-252.
- Neuberg, S. L. (1989). 'The goal of forming accurate impressions during social interactions: attenuating the impact of negative expectancies', *Journal of Personality and Social Psychology*, **56**: 374-386.
- Nishisato, S. (1980). *Analysis of Categorical Data: Dual Scaling and its Applications*, University of Toronto Press, Toronto.
- Peeters, G. (1971). 'The positive-negative asymmetry: On cognitive consistency and positivity bias', *European Journal of Social Psychology*, **1**: 455-474.
- Peeters, G. and Czapinski, J. (1990). 'Positive-negative asymmetry in evaluations: The distinction between affective and informational negativity effects'. Stroebe, W. and Hewstone, M. (Eds) *European Review of Social Psychology*, Vol. 1, Wiley, New York, pp. 33-60.
- Pulos, L. and Spilka, B. (1961). 'Perceptual selectivity, memory and anti-semitism', *Journal of Abnormal and Social Psychology*, **62**: 690-692.
- Quanty, M. B., Keats, J. A. and Harkins, S. G. (1975). 'Prejudice and criteria for identification of ethnic photographs', *Journal of Personality and Social Psychology*, **32**: 449-454.
- Sagar, H. A. and Schofield, J. W. (1980). 'Racial and behavioural cues in black and white children's perceptions of ambiguously aggressive acts', *Journal of Personality and Social Psychology*, **39**: 590-598.
- Scodel, A. and Austrin, H. (1956). 'The perception of Jewish photographs by non-Jews and Jews', *Journal of Abnormal and Social Psychology*, **54**: 278-280.

- Secord, P. F. and Saumer, E. (1960). 'Identifying Jewish names: Does prejudice increase accuracy?' *Journal of Abnormal and Social Psychology*, **61**: 144-145.
- Serino, C. (1988). 'Stratégies et structure de la comparaison sociale: Quelques aspects de l'asymétrie soi/autrui dans les relations entre groupes', *Cahiers de Psychologie Cognitive/European Bulletin of Cognitive Psychology*, **8**: 627-648.
- Sherman, S. J., Judd, C. M. and Park, B. (1989). 'Social cognition'. In: Rosenzweig, M. R. and Porter, L. W. (Eds) *Annual Review of Psychology*, Vol. 40, Annual Reviews, Palo-Alto, CA.
- Skowronski, J. J. and Carlston, D. E. (1989). 'Negativity and extremity biases in impression formation: A review of explanations', *Psychological Bulletin*, **105**: 131-142.
- Snyder, M. and Gangestad, S. (1981). 'Hypothesis-testing processes'. In: Harvey, J. H., Ickes, W. J. and Kidd, R. F. (Eds) *New Directions in Attribution Research*, Vol. 3, Erlbaum, Hillsdale, NJ.
- Stephan, W. G. (1985). 'Intergroup relations'. In: Lindzey, G. and Aronson, E. (Eds) *Handbook of Social Psychology*, Vol. 2, Random House, New York, pp. 599-658.
- Tajfel, H. (1969). 'Social and cultural factors in perception'. In: Lindzey, G. and Aronson, E. (Eds) *Handbook of Social Psychology*, Vol. 3, Addison-Wesley, Reading, MA.
- Tajfel, H., Billig, M., Bundy, R. and Flament, C. (1971). 'Social categorization and intergroup behaviour', *European Journal of Social Psychology*, **1**: 149-178.
- Tajfel, H. and Turner, J. C. (1986). 'An integrative theory of intergroup relations'. In: Worchel, S. and Austin, W. G. (Eds) *Psychology of Intergroup Relations*, Nelson-Hall, Chicago.
- Takane, Y., Young, F. W. and de Leeuw, J. (1977). 'Nonmetric individual differences multi-dimensional scaling: An alternating least squares method with optimal scaling features', *Psychometrika*, **42**: 7-67.
- Tenenhaus, M. and Young, F. W. (1985). 'An analysis and synthesis of multiple correspondence analysis, optimal scaling, dual scaling, homogeneity analysis and other methods for quantifying categorical multivariate data', *Psychometrika*, **50**: 91-119.
- Tesser, A. (1978). 'Self-generated attitude change'. In: Berkowitz, L. (Ed.) *Advances in Experimental Social Psychology*, Vol. 11, Academic Press, New York.
- Trope, Y. (1986). 'Identification and inferential processes in dispositional attribution', *Psychological Review*, **93**: 239-257.
- Trope, Y. and Bassok, M. (1982). 'Confirmatory and diagnosing strategies in social information gathering', *Journal of Personality and Social Psychology*, **43**: 22-34.
- Turner, J. C. (1975). 'Social comparison and social identity: some prospects for intergroup behaviour', *European Journal of Social Psychology*, **5**: 5-34.
- Tversky, A. (1977). 'Features of similarity', *Psychological Review*, **84**: 327-352.
- Wyer, R. S. and Srull, T. K. (1986). 'Human cognition in its social context', *Psychological Review*, **93**: 322-359.
- Yzerbyt, V. Y. and Leyens, J.-Ph. (1991). 'Requesting information to form an impression: The influence of valence and confirmatory status', *Journal of Experimental Social Psychology*, **27**: 337-356.

Copyright of European Journal of Social Psychology is the property of John Wiley & Sons Inc. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.