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TOWARD A DEFINITION OF SOCIAL PROCESSING OF INFORMATION : AN APPLICATION TO STEREOTYPING

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I

INTRODUCTION

1.1 INFORMATION AND SOCIAL INFORMATION

One of the first things undergraduate social psychologists learn is that social psychology has always been characterized by two conceptions of the word "social" (e.g. Asch, 1952; Moscovici, 1972, 1982; G. Paicheler, 1984). For one of those conceptions, social conduct is no more than the sum of individual processes occurring in a given situation. This individualistic approach assumes that general psychological laws are sufficient to explain social psychological phenomena. The opposed conception assumes that general laws of psychology are of little, if any, interest for the explanation of those phenomena (cf Asch, 1952). Further, the contention between individualism and social determinism in social psychology has been strongly correlated to the choice of either content-based or process-oriented approaches (cf Sherif, 1966).

If the individualistic conception prevailed in social psychology (cf G. Paicheler, 1984), its clearest illustration is the contemporary field of social cognition. The following argument seems quite probative:

> "...it is unlikely that in the process of evolution, qualitatively different knowledge structures or procedures developed for social and nonsocial classes of stimuli. The key notion here is that, within a cognitive framework, there are general tendencies across social and nonsocial domains, general questions to ask, and general phenomena to explain." (Fiske & Linville, 1980, p.548).

In addition, and paradoxally, although it puts emphasis on the study of processes, social cognition provided us with a content-based definition of "social information". Social information, in social cognition terminology, refers to person-derived information, whereas non-social information refers to knowledge about things other than humans or their properties. For instance, Ostrom, Pryor and Simpson (1981), argued that the analysis of social information-processing should focus

> "...on situations in which people receive two or more units of information about two or more persons." (p. 3)

This point of view might raise some rather obvious criticisms, and these criticisms might take the form of the following questions: Why two or more informations rather than one, and about two people rather than one? Is it more relevant to know that a couple (i.e. two persons) has a child and a dog (i.e. two units of information), rather than that one of its members is a feminist? Is it more "social" to believe that Paul and Peter (i.e. two persons) like movies and ice cream (i.e. two units of information) than to believe in God's (i.e. a non-person) existence (i.e. one unit of information)?

Still, in our opinion, these are examples of misleading questions. Another classical assumption is the following:

> "It is true that if we are interested in the actual cognitive content of any individual's social world, there can be no substitute for descriptive data collected about it specifically. But it is also true that if we are interested in the general operation of the cognitive processes of one's social world, then data collected with almost any material will do." (Krech & Crutchfield, 1948, p. 80).

That is, knowledge about the processes involved in the construction of beliefs about the social world could not be achieved if the contents upon which those processes operate were not "social". In our opinion, this is a second misleading standpoint.

The two points of view that we quoted above draw upon the conception that there is a "social" and a "nonsocial" kind of stimulation, and that its social or nonsocial status is determined by its intrinsic "social" or "nonsocial" properties. In other words, it appears that a good deal of the problem is due to the fact that authors attempted to find the criteria that distinguish "social" from "nonsocial" information with respect to the contents of that information, rather than in light of the processes through which it is constructed. It is undeniable that other persons must be preferential sources of social information. Nevertheless, one should not confound these features with the erroneous assumption that it is necessary for an information to be "social" that it derives from person-objects. Our point is that the notion of "social information" is meaningless or, at least, misleading, because it compels one to think about the "social - nonsocial" distinction as if it depended on intrinsic stimulus properties.

1.2 SOCIAL PROCESSING OF INFORMATION

The similarity between Krech and Crutchfield's (1948) and Fiske and Linville's (1980) points, which we quoted above, are a striking sign of the pervasive difficulty social psychologists have always had in conciliating process and content assumptions in their theories. If the contents of social information have some specificity, then the process by which social knowledge is computed should present certain differences from the processes implied in computing other kinds of knowledge structures. As Moscovici (1982) put it:

> "We could obviously define [social information] as any information or reaction relating to a person rather than a cat or a house, but that would be rather rudimentary. It is not the nature of the object that differentiates the social from the nonsocial but one's relation to it. There are sacred cats and sacred houses, and there are human beings who are less than objects, for their doctors, for instance. The blurring between social and interpersonal elements cast doubts on a large part of the work being done under the heading of social cognition." (pp. 117-118).

We believe that basic cognitive principles are necessary conditions for social knowledge to be generated and extended. Social knowledge is held by individuals. Therefore, an adequate understanding of that phenomenon implies understanding of individual processes and structures as well. However, social norms and social values must be considered as part of the individual's basic knowledge, and they influence the way he/she processes information. These norms and values, and their interaction with individual information-processing, correspond to what we shall call, from now on, social processing of information.

In the first part of this work, we deal with these problems. There, we attempt, first to describe the actual theoretical state of social cognition and to justify the idea according to which work made within that field is unable to provide an interesting and accurate account of social cognitive processes. Following this, we attempt to discuss the specific features of social processing of information as a component of cognition, as well as its consequences at the level of group perception.

1.3 THE PLAN OF THE WORK

With this introductory Chapter 1, we attempted to outline the broad problem we deal with from now on. This problem might be viewed almost in "genetic" terms. The current fashionable trend in social psychology is "social cognition". Social cognition is the "offspring" of two branches of psychology: "social perception" and cognitive psychology. Social perception and cognitive psychology have "good" and "bad" genes. Although we are aware of our pessimism, we must admit that social cognition inherited mainly the latter. Throughout this work, we shall attempt to shed some light upon the former. From a social psychological perspective, we shall review some basic postulates of cognitive psychology and some basic postulates of social perception which we believe to be the "good genes".

This is why we entirely devote the next chapter (Chapter 2) to the contemporary approach of social cognition. The dismissal of a trend with the current importance of social cognition (cf Fiske & Linville, 1980; Hastie, 1983; Landman & Manis, 1983) requires strong justifications. It is undeniable that this field allowed improvement in the way some questions began to be asked, in the methodologies, as well as in the answers to some of those questions. The main problem persists: are these questions, and their answers, of interest to social psychologists? Of course. Yet, do we need social psychology in order to ask and to answer them?

No doubts, it is unfair to insist on the shortcomings to the detriment of the achievements of social cognition. But our point is that these shortcomings are strongly problematic to the theoretical status of social psychology: on studying social cognition we have had some difficulties to grasp the "social" side of such a "cognition".

Given the problems raised Chapter 2, we thought we would be better off following a different approach to social psychological phenomena. Such a different approach, we reasoned, requires that some "old" ideas be recovered, in order to sketch a "social" portrait of human cognizers. This is why we devoted Chapter 3 to an appraisal of some of the basic principles of the early framework of "social perception". There, we attempt to show the advantages of those principles as tools to draw such a sketch.

In the sequence of that discussion, Chapter 4 is devoted to individual cognitive processes and structures. There, we build on some postulates accepted by contemporary cognitive psychologists, namely in what refers to "semantic" and "episodic" memory, and to some models of semantic memory. We attempt to outline a framework for cognitive representations, susceptible of providing some insight about the processes through which individuals organize information about the world. Indeed, if social cognition builds so heavily upon cognitive psychology, why not to refer directly to cognitive rather than to social cognition literature?

The framework we present in Chapter 4 could obviously deal with information issued from any kind of real world stimulation. But cognitive psychology and social cognition seem to be both tied to Locke's doctrine of nominal essentialism (Billig, 1976). According to Billig (1976):

> "In its current form the doctrine asserts that categories are formed by the abstraction of common stimulus elements from a variety of stimulus patterns (...). In this way concepts are defined in terms of actual, or perceived, stimulus similarities and such similarities constitute the "nominal essence". (p.327).

This point of view, Billig went on, lacks adequacy to account for social cognitive processes. Our standpoint is that information-processing is a necessary but not a sufficient component of social processing of information. This is the idea we attempt to justify in Chapter 5. There, we establish an analogy between cognitive computing processes and social computing processes, where the latter are characterized by the generation of social norms and social values and by the influence of those "social propositions" on cognitive processing. As a simplification device, we propose a distinction between psychosocial correspondence and psychophysical correspondence, to account for meaning derived from perceptual and cognitive processes "alone" and for meaning derived from social processes. Cognitive representations derived from psychosocial correspondence, we argue, have some characteristics different from cognitive representations derived from psychophysical correspondence. Therefore, we attempt to contrast some of the principles outlined in Chapter 4 with some empirical evidence that we interpret under the heading of psychosocial correspondence. An hypothesis we propose in Chapter 5 is that psychosocial categories are organized in connotative, rather than in

descriptive terms, and therefore, that, rather than obeying to a principle of cue-validity (cf. Chapter 4), they are determined by a principle of value-validity. Whereas the former refers to the world of physical information, the latter refers to the social world. Categories based on value-validity, we argue, are tied to social norms and social values rather than to real-world stimulus configurations. Chapter 5 ends with a tentative proposition of a set of postulates aimed at building a model of social processing of information at an individual level of analysis.

Chapter 6 is an attempt to contrast the two, psychophysical and psychosocial, perspectives in the domain of stereotyping or group perception. There, we present the approaches issued from social cognition and from the theory of intergroup relations proposed by Tajfel and colleagues. We build on the principle that the individual attempts to achieve a positive self-image as a social actor in terms of his/her self-categorization as a group member. This struggle to achieve a positive social identity is one of the cornerstones of Tajfel's theory. Our idea is twofold: first, we propose that the struggle to achieve a positive social identity may not only refer to a comparison between the ingroup and a relevant outgroup, but also to a comparison between the characteristic under analysis (e.g. a personal characteristic or behavior), and the prescriptions of an ingroup's normative standard; second, we propose that ingroup members can be evaluated both more positively and more negatively than outgroup members, depending on their compliance or non-compliance with the ingroup's normative standards. We called this, the black sheep effect.[1] We assume that the functional relationship between normative standards and individual judgments are a nice illustration of what we designate as social computing.

Chapters 7 and 8 comprise the empirical part of this work. There, we present some studies aimed at validating our hypotheses about normative standards as criteria for intergroup perception, and the black sheep effect. In Chapter 7, we present three studies. The first one was simply aimed at determining a relevant ingroup-outgroup dimension (Study 1). The others were aimed at showing the plasticity of social categories and, namely the effects of changing social contexts (Study 2) or normative standards (Study 3) on

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[1] Thanks are due to Jacques-Philippe Leyens for the term.

intergroup categorizations. These, we believe, are manifestations of the criteria of value-validity, as the materializing of psychosocial correspondence. In Chapter 8, three other studies are presented which were aimed at checking for possible alternative explanations for the black sheep effect. Study 4 attempts to validate a speculative explanation for the so-called complexity-extremity effect obtained by Linville and Jones (1980) and by Linville (1982b) and whose theoretical background and predictions are at odds with ours own. Study 5 is a partial replication of Study 3. Study 6 might be considered as a crucial experiment which confronts the black sheep hypothesis with explanations based on purely "informational", rather than "emotional" (group identification) factors. These studies apparently confirmed our hypotheses.

Obviously, we do not intend to solve the in this work the problems we raise, and which others raised before us. In theoretical terms, the problem of what is "social information" will be always determined by the researcher's scope. It is a matter of orientation, perhaps of prior social experience, of intuition, or, simply, of belief. Social cognitivists were unsatisfied with the all-purpose (affective) explanation given to social psychological phenomena. They found a new (all-purpose) "schematic" explanation for the same phenomena. On rationalizing the problem, we feel uneasy to decide which one is the best explanation. However, we believe that the real problem does not stand with the "veridicality" of the explanations, but rather the recognizing of the kind of view according to which the researcher looks at the phenomenon which he/she is interested to analyze.

II

SOCIAL PSYCHOLOGY, SOCIAL COGNITION AND INFORMATION-PROCESSING

Social psychology has long favored a cognitive analysis of social behavior (e.g. Ostrom, 1981; Stotland & Canon, 1972), but, apparently, contemporary social psychology is more cognitive than it ever was. Along with problems related to "androginy", "self-monitoring" and "learned helplessness", the study of inference and categorization processes in the domain of social psychology has become one of the most prominent themes since the end of the 1970s (Perlman, 1984). For most contemporary social psychologists, social psychology became synonymous with social cognition. Social cognition, as it will be understood in the present chapter, is the designation of the current approach of social psychology, and corresponds to the application of the paradigm of cognitive psychology to the study of phenomena like "social inference" (e.g. Hastie, 1983) or "social judgment" (e.g. Nisbett & Ross, 1980), "social schemata" (e.g. Taylor & Crocker, 1981), "person-schemata" (e.g. Wyer & Carlston, 1979), "person-prototypes" (e.g. Cantor & Mischel, 1977, 1979), "self-schemata" (e.g. Markus, 1977), or, "person-memory" (e.g. Hastie & Carlston, 1980). It is easy to see from these terms alone that social psychology became to some extent a predicated version of cognitive psychology.

The intimate relationship created between the two fields of cognitive and social psychology, has advantages and disadvantages. One of the most obvious advantages is that it cast light upon many processes which were until recently explained by vague motivational assumptions (cf Higgins, Kuiper & Olson, 1981). Another advantage is that the theoretical constructs and the research methodologies used by cognitive psychologists helped social psychologists to deepen their approaches to phenomena like encoding and recall, hypothesis-testing, or other kinds of inferences about "social information", which were until then approached "too much" on an intuitive basis or on a purely descriptive basis (idem).

On the side of the disadvantages, the most important for our concerns here, is that, because they have been making a cognitive psychology based on social materials, social cognitivists have been unable to attain the accuracy of studies that used more simple materials and, at the same time, they have run the risk of being unable to capture the specificity of some cognitive processes that are directly related to social interactions (Fiske & Linville, 1980). Finally, we believe, contemporary social cognitivists provided us with a complex body of literature about sophisticated laboratory methodologies and overspecialized theoretical discussions whose tone, to paraphrase one of the most influencial contemporary cognitive psychologists, is, sometimes, "more nearly that of bureaucratic memoranda than scientific reports" (Neisser, 1980, p. 602).

In the present chapter we attempt to draw a "picture" of what contemporary social cognition is. However, an enormous quantity of research has been produced under this heading since the end of the 1970s (cf Markus & Zajonc, 1984). Therefore, attempting an exhaustive review of the literature on that field would lead us too far from our present concerns. So, we chose to rely on already available reviews in order to present a synthesis of definitions of social cognition and of its major theoretical construct, i.e., the notion of schema.

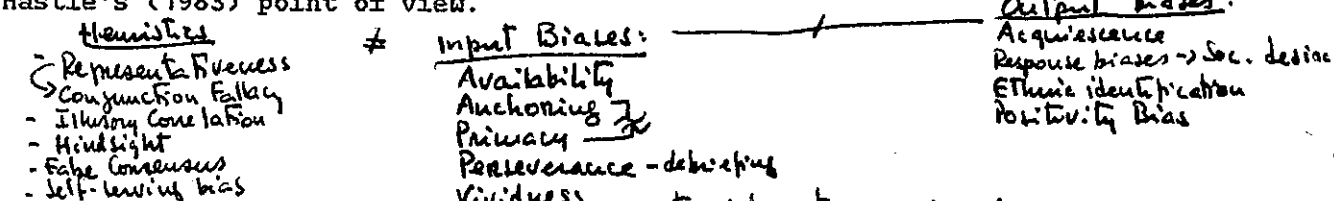
2.1 THE THREE SOCIAL COGNITION APPROACHES

Hastie (1983) distinguished three approaches within the field of social cognition: the information-integration approach, the judgmental heuristics approach and the information-processing approach.

The information-integration approach (cf Anderson, 1981) is perhaps the most direct inheritor of the research tradition initiated by Asch (1946) on impression formation and, specifically, on order effects (cf Chapter 3). Still, it outlined a theory which is quite different from Asch's early Gestalt approach. The information-integration theory may be subsumed as a set of normative postulates about the way personality traits should be organized in memory in order to form a general positive or negative impression of a target-person. However, these normative postulates are presented in the form

of arithmetical rules such as adding, multiplying or averaging. These rules were called cognitive algebra (e.g. Anderson, 1974), and were used to compare the outcome of perceivers' judgments to the processes they should have used in forming an impression about the target of judgment. According to Hastie (1983), the theory lacks predictive accuracy and only allows after-the-fact explanations. Because of this limitation, Hastie added, the information-integration theory never produced a significant amount of research. Another limitation is that the theory is restricted to arithmetical rules of information-processing with no structural assumptions.

The judgmental heuristics approach is essentially an application of work by Tversky and Kahneman (e.g. 1973, 1974) to judgments about persons (e.g. Nisbett & Ross, 1980). Contrary to the information-integration theory, which assumes that people follow normative inferential rules in social judgments, the judgmental heuristics approach suggests that perceivers function as "intuitive scientists" and that their judgments are distorted by a number of biases related to stimulus characteristics (e.g. salience and vividness) and to cognitive factors. The cognitive factors most currently taken into consideration within this approach are the representativeness heuristic and the availability heuristic. These two intuitive inferential strategies are used to explain biases in judgments about causal relationships, covariation, base-rates, prediction and hypothesis-testing. The judgmental heuristics approach could be broadly defined as an attempt to explain judgmental biases more than a theoretical model of social cognition (Hastie, 1983). One of its most interesting contributions bears on research about the imperviousness of prestored beliefs to incoming contradictory information (e.g. Leyens, 1983; Nisbett & Ross, 1980; Snyder & Gangestad, 1981). But, according to Hastie (1983), the judgmental heuristics approach is still too recent to allow a correct understanding of the properties and the emerging conditions of the intuitive judgmental processes used by perceivers. Recently, Wright and Murphy (1984) reviewed a number of studies showing that, contrary to Nisbett and Ross's (1980) claims, people often correctly assess statistical relationships among stimulus variables. Along with the results of studies that showed such biases to exist, those reported by Wright and Murphy (1984) seem to support Hastie's (1983) point of view.



Finally, the information-processing approach is almost synonymous with social cognition. According to Hastie (1983), it is the theoretically more complete and empirically grounded approach to the processes involved with social cognition. We focus on this orientation for the rest of the present chapter.

2.2 THE "CHARACTERISTIC" (BUT NOT DEFINING) FEATURES OF SOCIAL COGNITION

2.2.1 The Object of Social Cognition

Cognitive psychologists attempt to describe unobservable mental constructive processes related to the acquisition, organization and retrieval of information, that mediate the reception of informational inputs from the perceiver's environment and his or her responses (e.g. Neisser, 1976). Social psychologists

> "...attempt to understand and explain how the thought, feeling, and behavior of individuals are influenced by the actual, imagined, or implied presence of others. The term "implied presence" refers to the many activities the individual carries out because of his position (role) in a complex social structure and because of his membership in a cultural group." (Allport, 1984, p.3).

And, what about social cognitivists? The answer is more difficult to summarize. But, at the outset of their "framework for person-memory", Hastie and Carlston (1980) provided us with a potential indication:

> "This framework is based almost exclusively on cognitive research on nonsocial memory tasks (...). We believe that the most coherent and most useful psychological theories will bridge the gap between stimulus and response with a span of mental links. We call these intervening processes cognition and believe that eventually a proper theory of the mind will be in the form of a computational model expressed in abstract or logical Automata Theory terms and embodied in an operating computer program." (pp. 1-2).

The differences in focus between the two preceding definitions is obvious. The latter seems to be closer to an artificial intelligence paradigm than to that of the social psychological orientation emphasized by the former.

2.2.2 Comparisons Between Social Cognition and Social and Cognitive Psychology

Landman and Manis (1983, pp. 51-52) provided a list of definitions they found about social cognition. For some authors, social cognition is

> "any work that emphasizes how an individual cognizes his or her world".

But such a definition seems unable to capture the specificity of the social cognition approach in social psychology because it may encompass work ranging from general perception theory to fields like anthropology, philosophy or sociology. Another definition was based on the opposition between social cognition and cognitive social psychology, with

> "social cognition emphasizing the role of cognition in social phenomena and with cognitive social psychology emphasizing the role of cognition in social phenomena [emphasis in the original]".

But this distinction is not very informative, at least not until the underscored words are replaced by explicit statements. Finding no clear opposition between social cognition and cognitive social psychology, whatever they are, Landman and Manis (1983) looked further and found a definition opposing social cognition to cognitive psychology:

> "In experimental and cognitive psychology, the stimuli have often been impersonal - for example, nonsense syllables, geometric figures or lists of fruits, furniture or animals. In social cognition research, however, the stimuli usually have something to do with the self, another person or groups of persons - for example, lists of personality traits or behaviors, and segments of film portraying an interpersonal interaction".

What is problematic with this definition is that it relies more on the stimulus tools that are used in order to gather experimental data than on the goals of data-gathering and on their underlying assumptions. Such a definition could be carried a step further, distinguishing, say "fruit" cognition, "furniture" cognition, "personality-trait" cognition, "interpersonal interaction" cognition, and so on. But even the perception of geometrical forms may be largely determined by social factors (cf. Tajfel, 1978d). Therefore, such a definition seems unable to grasp the assumed specificity of social cognition.

Another definition found by Landman and Manis (1983) proposed that social cognition is an approach whose research paradigm

> "...involves the practice of exposing subjects to certain stimuli under controlled conditions and measuring various aspects of subjects' cognition - for example, what they perceive, what they remember, what they can identify as having seen before, the inferences they draw and the judgments they make on the basis of the stimuli presented."

But this is still a methodological description which, indeed, on the one hand, could account better for cognitive psychology than for social cognition, and on the other, which presents the same problem as the preceding one with respecto to its too general scope.

Other authors clearly assumed that social cognition is not an original approach. For instance, Hamilton (1981a) suggested that:

> "What is "new" in the current approach is the direct investigation of the cognitive structures and processes underlying person perception, often using experimental techniques borrowed from cognitive psychology." (p. 136).

And Higgins et al (1981) pointed out that:

> "One of the more prominent themes to emerge was the extensive borrowing of theoretical concepts and experimental paradigms from cognitive psychology (...). Illustrative of this trend is the borrowing of the concept of schema or prototype from cognitive investigation." (p. 395).

A final definition in the list presented by Landman and Manis (1983) involved comparisons between social cognition, and social and cognitive psychology:

> "...reference to "the how", or process, also distinguishes social cognition to some extent from its ancestors in social psychology. Social psychology has in the past more often addressed issues of cognitive content than process. In contrast, cognitive psychology has from the begining concentrated on cognitive processes (...). Social cognition tries to do both."

2.2.3 Prestorage and Computing in Cognitive Approaches

Regardless of the assumed integrative achievements of social cognition with respect to process and structure, it would be a mistake to mingle the limitations of specific research with the presuppositions of the general paradigm on which it was based. The paradigm of cognitive psychology is well illustrated in the following point made by Simon (1982):

> "We do not have to choose between viewing cognition in terms of representation [or structure] or viewing it in terms of process. The two views are wholly compatible. There is no representation without process, and no process without representation." (p.335).

That is, by definition cognitive models of information-processing should involve equally relevant process and structural (and, therefore, content-based) assumptions. In fact, the process-structure distinction is only an expedient device for simplification purposes. The very term "representation" is illustrative of this fact, because it may refer simultaneously to process, structure and/or content elements of memory.

As Smith (1978) pointed out, the study of cognitive phenomena implies that two components be simultaneously taken into account. These components are prestorage and computing. Prestorage issues deal with attributes, categories, eventually propositions or other units existing in the mind prior to particular processing operations. Computing refers to the processes that are allowed to operate inside the prestored informational structures. This is a classical distinction in research on long-term memory. Long-term memory is generally assumed to encompass two kinds of components: cognitive categories or knowledge structures and their[2] interrelations; the knowledge of mechanisms through which those knowledge structures are created, revised, and extended.[3] Thus, models of memory in cognitive psychology cannot be completely described as addressing exclusively, or even as concentrating on process issues. In Chapter 4 we present some basic postulates related to this problem.

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[2] These have been called, for instance, the data-base (Rumelhart, Lindsay & Norman, 1972), or text (Simon, 1979).

[3] These are programs (Lindsay & Norman, 1977), interpretive mechanisms (Rumelhart et al, 1972), indexes (Simon, 1979), formats or plans (Neisser, 1976), rules (Bourne, Dominowski & Loftus, 1978), or strategies (Bruner, Goodnow & Austin, 1956).

2.3 THE SCHEMATIC FRAMEWORK OF SOCIAL COGNITION

The information-processing approach to social cognition is basically a general framework about "schematic information-processing". It strictly follows a process orientation, based on two implicit assumptions: (1) the fact that "schemas" involve person-derived information justifies its being considered as a "social" approach; (2) social information is an outcome of cognitive processing about that kind of information.

2.3.1 Origins of the Schema Notion

The historical origin of the notion of schema dates back from early Gestalt psychology, as an attempt to meet the liabilities of the behaviorist hegemony in experimental psychology, with the assumption of existing mental constructive processes mediating stimulus and response (cf Landman & Manis, 1983; Markus & Zajonc, 1984).

Schemata have been broadly defined as abstract and generalizable rules about environmental regularities building on the perceiver's direct experience, observation or communication with others (cf Stotland & Canon, 1972). The notion was used to refer to a general class of factors such as frames of reference, mental sets or organizing principles (idem; Asch, 1952).

The notion of schema as it is used nowadays by social cognitivists is generally considered as the direct theoretical inheritor of Bartlett's (1932) work (cf Hastie, 1981, 1983; Landman & Manis, 1983; Markus & Zajonc, 1984; Nisbett & Ross, 1980; Taylor & Crocker, 1981; Wyer & Carlston, 1979). For Bartlett, a schema was an active organization of past reactions and past experiences, used as a guide for perception, attention and recall, by relating prestored knowledge to incoming information. Bartlett (1932) used the notion of schema to explain phenomena like omissions in recall, inferences about items absent from stimulus configurations, transformations of unfamiliar details into familiar ones, and so on. The constructionist approach to perception and cognition was an already growing trend at his time (cf Landman & Manis, 1983). As Stotland and Canon (1972) pointed out:

> "Numerous other authors, including Piaget (1952), Hebb (1949), Lashley (1951), and Allport (1947), have employed the term in one context or another. The common thread in this variety of usages is

Piaget -> schemas -> assimilation of world structures
accomodation in terms of world structures

> reference to some sort of internal, integrative process which plays an important part in the determination of behavior and perceptual activity." (p.69).

2.3.1.1 Schemas as Minimal Perceptual-Cognitive Structures

The notion was also used in cognitive psychology but, first, with direct relationship to sensory mechanisms. For instance, Neisser (1976) proposed a model of information acquisition in terms of template schemata. This author distinguished between standard templates and preprocessed templates. The former referred to minimal perceptual position-oriented and size-specific structures allowing pattern recognition of proximal stimulus configurations. The latter were conceived as more sophisticated pattern recognition devices, which allow operations such as translation, rotation or dilatation to be performed on stimulus configurations without producing recognition errors.

According to Posner and Warren (1972), schemata are perceptual constructs, or representations of central tendencies of real world stimulus configurations which are abstracted from an experience with different stimulus configurations of a same type. In this sense, schemata correspond to some extent to Neisser's notion of template schemata, but also to Rosch's (1977, 1978) notion of prototype. However, in Posner and Warren's (1972; cf also Posner & Keele, 1967) point of view, these prototypes are pattern recognition (thus peripheral) rather than cognitive (central) information processing structures. Klatzky (1975) drew on a similar idea, by arguing that schemas are sets of rules for producing and describing perceptual prototypes.

2.3.1.2 Schemas as Associative Networks

The notion of schema received significant attention in the artificial intelligence research field. But, contrary to the preceding point of view, which considered schemata as relatively peripheral information-processing structures, authors on this trend conceptualized schemata as ranging from networks of concepts or memory structures to perceptual mechanisms (e.g. Norman, 1982). Norman and Rumelhart (1978) are among these authors. They defined schemata as developed sets of categories serving to interpret incoming information:

> "To us, a schema is the primary meaning and processing unit of the human information-processing system. We view schemata as active, interrelated knowledge structures, actively engaged in the comprehension of arriving information, guiding the execution of processing operations. In general a schema consists of a network of interrelations among its constituent parts, which themselves are other schemata." (p. 41).

Bobrow and Norman (1975) shared this point of view but insisted more directly on the processing capabilities of schemata. For these authors, schemata are active memory structures capable of receiving information and providing other schemata with self-generated information. According to these authors, schemata are context-dependent descriptions. They eliminate informational ambiguity in the specific context of stimulation that activates them. Also, Rumelhart and Ortony (1977; cf also Norman, 1982; Rumelhart, 1975) defined schemata as data structures representing abstract events, situations or concepts in memory. Authors in this trend, consider the notion of schema as a useful tool for computer simulation of memory processes (cf Bobrow & Collins, 1975).

Thus cognitive psychologists in general use the term "schema" in two senses. One, refers to rather specific perceptual and cognitive structures. The other, refers to general, highly integrated and well developed memory structures. But, as most of them argued (e.g. Klatzky, 1975; Norman, 1982) the notion of schema allows one to integrate all kinds of information-processing into a single construct. The most important feature of schemata as components of memory is that they should function as superordinate principles of perceptual and/or cognitive organization.

2.3.1.3 The Principle of Cognitive Economy in Schematic Structures

The view of cognitive structures as a unique schematic network has the enormous advantage of allowing the conceptualization of memory processes and structures in terms of a general principle of <u>cognitive economy</u> (e.g. Costermans, 1980). The models of memory developed in the field of cognitive psychology accept, with few exceptions (cf Collins & Loftus, 1975; Glass & Holyoak, 1975; Smith & Medin, 1981), the postulate that cognitive structures are hierarchically organized and that <u>propositions</u> are their basic structural units (e.g. Collins & Quillian, 1969, 1972; Frijda, 1975; Kintsch, 1972, 1974; Rumelhart et al, 1972). Propositions should function in human memory as

relations between informational units existing at the same or at different abstraction levels. As Rosch (1977) pointed out, humans have a "drive" toward the organization of knowledge representations in a manner that allows the greatest amount of information to be accessed with the least cognitive effort.

The postulate of schematic structures as concept networks meets the principle of cognitive economy. Lower-level schematic nodes are linked to higher-level ones so that cognitive structures can be interrogated with optimal functionality and memory structures can be as simple as possible (Norman, 1982). Thus the approach to schemas as propositional networks allows one to conceive the principle of cognitive economy in prestorage and computing terms: prestorage economy, because the structure would be non-redundant; computing economy, because retrieval and inference processes may be performed within a relatively simple, but well-articulated, knowledge structure.

2.3.2 The Schema Notion in Social Cognition

It would not be exaggerating to say that the notion of schema in social cognition presents the same difficulty as the definition of social cognition itself. This is perhaps because the two are so intimately related to each other. The definitions provided in the literature on social cognition are little informative about issues related to the structure of schemas, their nature, and the kind of processes they put to work. Obviously, such definitions are not very useful from a conceptual standpoint, contrary to what they would be, had authors attempted to construct a parsimonious theoretical framework capable of encompassing the perceptual-cognitive and motor stages of information-processing (e.g. Neisser, 1976; Norman, 1982). Let us present some of these definitions as they were proposed in the social cognition literature. According to Wyer (1981):

> "Schemata have been postulated to be: (1) the things that increase the polarization of judgments following thought; (2) things that are used as bases for inferring the cause of an event or for predicting the generalizability of the event over persons, objects and situations on the basis of information about its generalizability along other dimensions; (3) the things that may lead concrete information to have more influence than abstract information; (4) the things that lead self-referent information to be responded to faster than information that is less clearly related to an attribute of oneself; and (5) the things that lead attributions to become more dispositional over time. In none of theses cases has the nature and

> structure of a schema been conceptually or operationally defined independently of the phenomena it is used to explain." (p.361).

The inability to define schemata parsimoniously seems indicative of the current state of the notion in social cognition. To oppose the lack of theoretical integration, as has been illustrated by Wyer (1981), other authors proposed more general definitions. Actually, those definitions are so general that they could become even less informative than the preceding one.

2.3.3 The (All-Inclusive) Definition of "Schema"

Taylor and Crocker (1981) were among the authors who made such an attempt. According to them,

> "A schema is a cognitive structure that consists in part of the representation of some defined stimulus domain. The schema contains general knowledge about that domain, including a specification of the relationships among its attributes as well as specific examples or instances of the stimulus domain (...). The schema provides hypotheses about incoming stimuli which include plans for interpreting and gathering stimulus related information..." (p.91).

But in light of this definition, a schema might be anything ranging from a structure of sensory pattern recognition to a hierarchical feature (cf Palmer, 1978; cf Chapter 4), or, an associative network (e.g. Anderson & Bower, 1973; Rumelhart et al, 1972). Although templates, and formats and plans have been discussed in the literature as parts of schematic processing (e.g. Neisser, 1967), the present definition does not seem to point out the specificity of relationships between such different types of schematic processing. Rather, it likens them one to another as if they were the same thing.

Hastie (1981) was another author who attempted to formulate a theoretical definition of schema. This author related schemas to notions that apply more directly to structural assumptions:

> "...we include almost any of the abstract hypotheses, expectations, organizing principles, frames, implicational molecules, scripts, plans or prototypes that have been proposed as abstract mental organizing systems or memory structures in our use of the word "schema"." (p.39).

This definition seems even more inclusive (and, by the same token, even more redundant) than the preceding one. Indeed, it seems to raise more confusion than it solves problems. To illustrate, consider, for instance, the current definition of prototype in the literature. According to Rosch (1977, 1978) a prototype is a subset of attributes of a cognitive category which is the best representative of that category. That is, the prototypical attributes present the highest probability of occurrence in members of that category and the lowest probability of occurrence in members of other categories at the same level of generality (this is discussed in more detail in Chapters 4 and 5).

Now, consider the definition of script:

> "...a coherent sequence of events expected by the individual, involving him either as a participant or as an observer." (Abelson, 1976, p. 33).

According to Abelson (1976; cf also Schank & Abelson, 1977) a script is a sequence of vignettes, where each vignette corresponds to an encoding unit related to an event. Thus, a script is the mental representation of an event-sequence or episode, whereas a prototype is an abstract representation of a class of objects. Further, scripts can be episodic, categorical or hypothetical, and as such, either independent of real-world events, or experience-based representations of event-sequences that actually occurred (Abelson, 1976). In both cases, however, episode representations must be related to category representations (e.g. prototypes) in order to define the contents of the vignettes (for instance, the actors, the objects, their relationships). This fact alone clearly indicates that scripts are not the same as prototypes. Yet, the important theoretical (and empirical) differences between these notions seem to be concealed by Hastie's (1981) eclectic definition.

Now, consider the definition of frame:

> "A frame is a data structure for representing a stereotyped situation (...). Attached to each frame are several kinds of information. Some of this information is about how to use the frame. Some is about what one can expect to happen next. Some is about what to do if these expectations are not confirmed." (Minsky, 1975, p. 355).

The notions of script, frame and prototype imply somewhat different prestorage and computing assumptions. A frame may correspond to a categorical script because it refers to a stereotyped situation, but frames are explicitly assumed to encompass complex rules upon which processing operations are performed (cf Kuipers, 1975), whereas scripts involve unidirectional processing rules (a sequential progression from one vignette to the next one). In addition, scripts and frames refer to representations of event sequences, whereas prototypes refer to representations of semantic categories. That is, scripts and frames may encompass prototype representations but, although it is possible to conceive prototypical events (Rosch, 1978), it would be difficult to conceive prototypes as including episode representations.

It is obvious that frames, prototypes and scripts share some important features: they all refer to cognitive representations, they all are organized information structures, they all induce expectations and, as a result, they all control acquisition, encoding, and recognition or recall. But they were first defined as different cognitive structures, related to different, albeit interrelated, types of information, therefore inducing expectations about different parts of the perceiver's reality and thus performing different specific functions. As a result, including all these notions into the same schema definition raises problems as to the definition of the schema notion itself.

Other authors provided more direct clues about the structure of schemata. This is the case of Wyer and Gordon (1982), who built on the view of schemata as concept networks. According to these authors, a (person) schema is

> "...a network of concepts consisting of a central node and denoting the person to which it refers and a set of peripheral nodes denoting the features of such a person. These features include both traits and general behaviors." (p. 130).

However, schemata have also been presented as non-propositional structures:

> "To understand the social world, the layperson makes heavy use of a variety of knowledge structures normally not expressed in propositional terms and possibly not stored in a form even analogous to propositional statements. In describing these cognitive structures we shall use the term "schema"..." (Nisbett & Ross, 1980, p. 32).

The obvious conclusion to draw from what has been presented here is that schemas have no unique theoretical definition.

2.3.4 The Nature of Schemas

Cognitive structures are generally assumed to be formed, searched and extended by means of two processes. One, is generalization from personal experiences. The other presents two aspects: the interpretation of personal experiences in terms of prestored knowledge; the generation of relations among prestored knowledge units without the interference of external information. The former is a bottom-up and the latter is a top-down information-processing.

2.3.4.1 Conceptually-Driven and Data-Driven Information Processing

Lindsay and Norman (1977) distinguished between conceptually-driven (or top-down) and data-driven (or bottom-up) information processing as two types of cognitive extension. Data-driven processing is a simple inductive process: general categories are formed through the observation of separate real world objects or events. A cognitive representation that were constructed exclusively by means of data-driven processes would be an accurate replica of the real world, because correlations among real-world objects and events would be reproduced, as such, in the cognitive domain. However, perceptual activities are generally influenced by biases and simplifications (cf Leyens, 1983; Snyder, 1981; Wason & Johnson-Laird, 1972) due to prestored expectancies. Such effects occur as conceptually-driven processing produces them. This kind of information-processing bears on filling in default values in incoming information, to determining the criteria of pattern recognition, etc., and obviously, is a fundamental element of information-processing.

Despite their differences both conceptually-driven and data-driven processing should allow STM information to access higher levels in the memory system. Schemas may involve both kinds of processes. But whereas some theorists in social cognition suggested that they are bottom-up, others suggested that they are top-down processing devices.

Fiske and Linville (1980), for instance, emphasized data-driven or bottom-up processing, because they assumed that schemas are developped as generalizations of past experiences. For these authors, schemata are

> "...cognitive structures of organized prior knowledge, abstracted from experience with specific instances". (p.543)

Other authors emphasized top-down or conceptually-driven information-processing, because they focused on the interpretive and inferential functions of schematic structures. For instance, Taylor and Crocker (1981), suggested that:

> "...knowing a schema enables one to identify the elements of the schema configuration and their relationships to one another and to input meaning to behavior." (p. 94).

For Taylor and Crocker (1981) schemas are also bottom up pyramidal structures developing from elementary sensory and perceptual levels to more elaborated levels of cognitive processing. Unfortunately, the authors did not elaborate on the specificity of functioning of the two levels, because although it seems parsimonious to include sensory, perceptual and cognitive processing under the same heading, it is still necessary to distinguish some processes operating at each level (cf Lindsay & Norman, 1977). Hastie (1981) seemed to share the top-down point of view, suggesting that a schema is an

> "...abstract, general structure that establishes relations between specific events or entities" (p. 41).

The problem is that, authors seldom have attempted to determine the relationship between both types of information-processing. More important, even though many of them presupposed that schemata are generated by means of bottom-up processes, with a few exceptions research has focused exclusively on schematic effects on encoding and recall, i.e. on conceptually-driven processing. As we argue in Chapter 5, it might be that in many social situations, schemata derive from processes different from induction. If this is true, then it is not enough to presuppose that they are created by means of data-driven processing, i.e. generalization of past experiences, alone.

2.3.5 Schematic Models of Memory in Social Cognition

The uncompelling theoretical state of "schema theories" has not been ignored by social cognitivists. This is why some authors have attempted to articulate the several kinds of schemas into more or less coherent structures. Unfortunately, such effort provided us with a collection of theoretical idiosyncrasies whose relationship is often an odd one.

For Hastie (1981) schemas range from central tendency schemata, at the most elementary level, through template schemata, to active procedural schemata. According to this author, central tendency schemata simultaneously represent information about individual actors, locations, goals, or actions, but no specifications are provided either about the status of each of these kinds of information inside the structure nor about their relationships. Template schemata are, still according to Hastie (1981), ordered relationships among central tendency schemata, but no specifications are provided about either the organization of these structures or about the processes that lead central tendency schemata to be grouped into template schemata. Active procedural schemata are structures that control inference making, inference storage and information search processes (Hastie, 1981). Unfortunately no indications are provided about the way in which such procedural schemata are articulated to the other types of schemas.

But if the model lacks process specifications, it also lacks more precise theoretical definition, namely with respect to the notions of central tendency schemata, template schemata and active procedural schemata. Actually, central tendency schemata may be understood as prototypes (e.g. Garner, 1978; Posner & Keele, 1967). But, as we already pointed out, prototypes may refer more directly to higher-order, rather than to perceptual structures if they are viewed along with Rosch's (e.g. 1978) recent approach, or as perceptual structures, if Posner and Keele's (1967), or, Rosch's (e.g. 1974) earlier approach are followed. Template schemata may be understood as basic sensory units of information processing, through which proximal stimulus configurations (cf Brunswick, 1952), such as light or sound-waves, are incorporated into the organism (e.g. Garner, 1978; Neisser, 1967; Palmer, 1978). In Hastie's (1981) model, template schemata seem to correspond more to

propositions as they were defined, for instance, by Rumelhart at al (1972) or Frijda (1975). Finally, active procedural schemata seem to be equivalent to programs or hierarchical features (cf Lindsay & Norman, 1977; Palmer, 1978). Hastie's (1981) formulation does not seem to clarify very much with respect to these issues. This is perhaps why Hastie (1983) suggested that the "clearest and most general exposition" of structural postulates of the information-processing approach to social cognition was Wyer and Carlston's (1979). The most interesting feature of this situation is that Wyer and Carlston's model is, indeed, nothing but a reformulation of Collins and Loftus's (1975) spreading-activation model of semantic memory.[4]

2.3.6 The Nature Of Schematic Information In Social Cognition

Besides the collection of structural assumptions made by schema theorists which failed to provide a coherent integrative view of memory functions, there is also an apparent failure to provide a coherent view of the organization of schematic contents. One of the main characteristics of schema theories in social cognition is the conceptualization of different kinds of schemas according to the fact that they represent persons other than the perceivers, the perceivers themselves, social groups, social roles, events, and so on, without an attempt to integrate these different kinds of contents in a general structure of knowledge.

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[4] Collins and Loftus (1975) drew on neo-associationist principles, and postulated that memory may be represented as an associative network where relationships among concepts are expressed by means of activational paths. Once a concept is primed, it generates an amount of activation that spreads along the paths linking it to other concepts, therefore activating those concepts. Their idea was that the probability of a concept being retrieved from another one is a joint function of the number of previous associations between those concepts, of the number of links that must be followed to reach one concept from the other, and of the amount of processing activity related to the primed concept. Moreover, following the general neo-associationist paradigm, Collins and Loftus (1975) postulated that paths are unidirectional and labelled. The fact that a recovering of this cognitive model (cf. Chapter 4) is considered as the best set of structural postulates in social cognition, informs a lot about the theoretical state of this domain.

2.3.6.1 Trait and Behavior, Person, and Event Schemata

Wyer (1981) postulated three types of schemas related to information about persons: trait and behavior schemata, person-schemata and event-schemata. Trait and behavior schemata correspond to representations of personality traits and general classes of behaviors which function as information storage systems to which perceivers apply for judgments about particular persons. They are network structures. Wyer and Gordon (1982) drew on a similar assumption, but, this time, trait and behavior schemata were viewed as data matrixes depicting trait and behavior co-occurrences. The organization of this kind of information has also been conceived as dimensional implicit personality theories (e.g. Leyens, 1983; Schneider, 1973; Stotland & Canon, 1972; cf Chapter 3). According to Wyer (1981), person schemata may encompass representations either about abstract psychological types (e.g. "intelligent people"), about social groups, or, about single individuals. They include, indiscriminately, trait names, physical characteristics, specific behaviors, prototypical behaviors, social roles, occupational roles, groups to which the person belongs, and encodings of one's own thoughts about or reactions to a particular person (Wyer, 1981; Wyer & Gordon, 1982).

The problem remains to determine the differences between trait and behavior schemata that are used to judge abstract persons, person schemata that are representations of abstract persons, and, semantic structures that are representations of abstract traits and classes of behaviors. No less problematic is information included in person schemata which encompasses not less than nine types of information ranging from abstract trait names to specific reactions to other persons. Finally, event-schemata were postulated to be identical to episodes, frames or scripts. But this raises the question of whether the term "event-schemata" adds something to those current designations.

2.3.6.2 Person, Self, Role, and Event Schemata

Taylor and Crocker (1981), on the other hand, distinguished between person-schemata, role schemata and event schemata. This taxonomy might seem to have something in common with certain components of each one of the

preceding. Unfortunately, Taylor and Crocker's (1981) definition of person schemata seems to correspond to Wyer's (1981) definition of trait and behavior schemata. Further, according to Taylor and Crocker, person schemata are prototypical representations of categories like "extrovert" or "introvert", along with impressions about specific persons and conceptions about the self. Thus, Taylor and Crocker's (1981) notion of person-schemata might also overlap to some extent with Markus's (1977) notion of self-schemata. According to Markus (1977), self-schemata are

> "...cognitive generalizations about the self, derived from past experiences, that organize and guide the processing of the self-related information contained in an individual's social experience." (p. 14).

According to Taylor and Crocker, role schemas are representations of social roles (e.g. policeman, cowboy, etc.), and, finally, event schemata are the same as scripts and stories.

2.3.6.3 Social Group and Individual Schemata

Along with his distinction among central tendency, template and active procedural schemata (cf above), Hastie (1981) proposed that the classic notion of stereotype be replaced by that of social group schema as opposed to individual person schema. Individual schemata are, for this author, person-prototypes and self-schemata. Social group schemata could also correspond to group impressions as opposed to person impressions. Since person impressions usually refer to the organization of personality traits related both to concrete and abstract persons (cf Ostrom, Lingle, Pryor & Geva, 1980), one might conclude that individual person schemata might correspond to the notion of person-schemata or trait and behavior schemata. But, once again, this is not made explicit.

These illustrative taxonomies seem to indicate that social cognition strongly needs a unification approach and that the schema notion is not useful for this purpose. Distinct names are given to the same phenomenon, several phenomena are included under the same label and the same label is applied to different phenomena. Perhaps more serious is the fact that although the

majority of authors devote the first part of their writings to the argument that the notion of schema is the most adequate way to give a unitary approach to research in social cognition, and the last part of these same writings to the argument that the schema notion is useless because it is an "umbrella" concept (e.g. Hastie, 1981, 1983; Taylor & Crocker, 1981; Wyer, 1981), the middle part is devoted to idiosyncratic taxonomies, which, on the one hand, do not present clear relationships between their respective components, and, on the other, do not present clear relationships to other taxonomies (which are, sometimes, presented in the same volume).

2.4 CURRENT SOCIAL COGNITION ASSUMPTIONS ABOUT THE ROLE OF AFFECTS ON INFORMATION-PROCESSING

Along with the prestorage-computing, and, the social-individual caveats of contemporary social cognition, most authors in this field subscribe the widespread assumption that information-processing about social stimulation can be entirely explained without applying to the influence of affective factors. As Taylor and Crocker (1981) put it:

> "The main point of difference between an affectively based formulation and a schematic one is that schemas are cognitive structures that do not require affect or value relevancy as preconditions for activation. It is difficult to see how a formulation based on affective significance can handle findings such as selective recall of schema-relevant material that involves boring, redundant scripts like going to a movie or shopping in the supermarket." (p. 125).

Although we do not entirely agree, at least on intuitive grounds, with that assumption (shopping in a supermarket may be a rather frustrating situation, and, going to the movies may be a real pleasure or a real bore, for instance, depending on the film), it is true that social cognitivists attempted

> "...to push cognitive explanations as far as possible, to see where they illuminate new ground not clarified from previous approaches." (Landman & Manis, 1983, p. 58).

This was an attempt to overcome the ubiquity of speculative explanations based on needs (Higgins et al, 1981). But it is also true that the theoretical liability of "schematic processing" allows the explanation of a given

phenomenon as easily as its opposite (Fiske & Linville, 1980; Taylor & Crocker, 1981). Moreover, it is not surprising that no affect-based explanations are needed when the research settings do not imply affectively charged responses (Neisser, 1980). As Hamilton (1981b) put it, the object of social cognition is a "thinking" and not a "feeling" person. Nevertheless, it must be as incorrect to narrow human information processing to purely rationalistic processes as it would be to take only affective factors under consideration (cf Tajfel, 1969a; Tajfel & Forgas, 1981). Social cognitivists seem not to have ignored this fact. For instance, Hamilton (1981b) stated that stereotypes (or group schemata) will be incompletely approached without affect-based assumptions (a point that Tajfel, 1969a, had made long ago). Also, Higgins et al (1981) devoted a chapter to the potential effects of affective factors, such as the intensity of moods, their positive or negative valence, and their duration and specificity on information acquisition, integration and retrieval.

Some tentative works appeared in the literature, attempting to integrate affect-based assumptions into schematic information processing (e.g. Clark & Fiske, 1982; Fiske, 1982). But the logic underlying these models seems to be still too sketchy to provide clear solutions to the problem of integrating affects into schematic models of information-processing (Higgins et al, 1981). So, affects are conceived as nodes in the schematic network and they are assigned exactly the same status as conceptual nodes. Concepts and affects are assumed to be related to one another by activational paths (e.g. Fiske, 1982), and processing operations seem more adequate for representing computer algorithms than human feelings:

> "A simple rule for dissipating emotion is:
> IF emotion E is active, and
> the emotional interpretation that evoked E is no longer active
> (...)
> THEN decrease the level of intensity by 50%."
> (Bower & Cohen, 1982, p. 315),

or

> "IF I'm not perfect
> THEN I am worthless and should be depressed." (idem, p.328).

It seems difficult to accept that emotional experiences work like this in everyday life or that affective states are induced through the processing of concepts describing affects. This is the point of view of authors like Leventhal (1974) and Zajonc (1980).

2.4.1 Affects as Processes Underlying Cognitive Processing

Zajonc (1980) argued that affects are part of a system underlying cognitive operations. According to this author, affective states are determined by value attributes of a general, undefined, and unanalyzable character, and, that they trigger global and immediate evaluations underlying inferences about the perceiver's emotional state as well as about the judgmental target. He called these attributes preferenda. Preferenda, Zajonc suggested, form the basis of emotions (cf Zajonc, Pietromonaco & Bargh, 1982). The description of those states require inference processes. But this should not be confounded with the fact that emotional states are dependent on inference processes. Based on this assumption, Zajonc et al (1982) suggested that the study of affects as schema-dependent processes, as is the case in some theories (e.g. Bem, 1972; Schachter, 1964; Zanna & Cooper, 1976) focusing on perceivers' conscious explanations of arousal states, runs the risk of confounding self-explanations for emotions with emotional states themselves.

Another problem with these attempts to include affective assumptions within models of information-processing, is that the social concomitants of affects seem to be ignored as much as the social concomitants of cognitive processes were (cf Tajfel & Forgas, 1981). This is an important handicap because, although the inclusion of affective factors in social cognition models might improve the explanatory power of these models, they still are models of intrapersonal phenomena having little to do with socially specific processes (Mandler, 1982). This is a problem we shall address ourselves to in Chapter 5.

2.5 CONCLUSIONS

The amount of research inspired by social cognition seems unable to provide it with a clear definition of what is "social cognition", and therefore, to justify the need for this "new" branch positioned somewhere between social psychology and cognitive psychology. This lack of definition extends to the central construct used by authors in that domain: the notion of schema.

2.5.1 The Schema Notion

It is true that the present review of schema assumptions in social cognition is far from providing a clear idea about the relationships between the different types of information individuals have to process in social situations. However, in our opinion, it is a relatively accurate summary of the general theoretical state of the information-processing approach in social cognition. Schemas may be anything, from prototypes to complex propositional networks. Although, as it was pointed out, while social cognition strictly followed the paradigm of cognitive psychology, the definitions it provides for notions like prototypes and propositional networks seem to be less accurate than those provided by cognitive psychologists. The present theoretical state could be improved if several questions were answered.

For instance, assuming that social group schemata, role schemata and stereotypes are the same thing, that is, general sets of beliefs about the personal attributes of groups of people (e.g. Ashmore & Del Boca, 1981; Hamilton, 1981b), and that person-schemata and individual schemata are beliefs about particular persons, how are these two types of schemata related to each other? Moreover, is there no difference between the representation of a particular person other than the self and the representation of the self? In other words, do people process information about the self in the same manner as they process information about somebody else? What are the relationships between self-schemata and role or social group schemata? Are persons unable to categorize themselves as members of social groups? These are examples of the kinds of questions which have not attracted much attention from social cognitivists but that, as far as we can see, refer to key-problems for a theoretical integration.

Answers to these kinds of questions could also improve the predictive accuracy of schemas in social cognition. It is true that, according to Markus and Zajonc (1984), the notion of schema inspired a large body of research which would not have come into existence without such an inspiration. But even if it is heuristic, for the moment, the schema notion is generally considered as lacking empirical and theoretical usefulness. According to Landman and Manis (1983):

> "The schema concept (...) has become something of an umbrella concept or a "metaconstruct" subsuming a number of other hypothetical cognitive modules. Consequently, the definitions of schemas have tended to be nearly all inclusive." (p. 79);

Also, Taylor and Crocker (1981) were lead to conclude that:

> "The concept of schema and its processing functions currently provide the basis for nothing more than demonstration studies. Though predictions can be generated by schema theory, failure to show a hypothesized effect will likely be attributed to failing to specify the right schema or measurement error, rather than a failure of the theory itself." (p.127).

And Hastie (1981) pointed out that:

> "The concept of mental schema pervades theorizing in cognitive psychology despite the fact that its basic meaning is indefinite, its usage by theorists is highly individualistic, and its operational connection to empirical events is tenuous." (p. 51).

The lack of theoretical discipline lead some authors to consider that the most consensual ground for a definition of schemas in the social cognition literature is that they are... cognitive structures. This is illustrated in Ashmore and Del Boca's (1981) conclusion that

> "Although a variety of definitions have been proposed, most researchers would probably agree that a schema is a cognitive structure that influences all perceptual-cognitive activities that together are labelled "information-processing" (e.g. perceiving, encoding, storing, retrieving, decision-making) with respect to a particular domain." (p. 2).

Similarly, Landman and Manis (1983) concluded that agreement among schema theorists in social cognition could be found only if schemas were defined as follows:

> "1. schemas are cognitive structures;
> 2. schemas represent both general and specific knowledge, in a single higher-order unit;
> 3. schemas have an impact on cognitive processing." (p. 77).

Also, Fiske and Linville (1980) considered that:

> "A completely noncontroversial minimal view of schemas states that the term schema refers to the richly-connected network of information relevant to a given concept, so schemas determine which data are congruent and which are incongruent. According to this view, then the schema simply describes how data fit in an existing pattern." (p.552)

The idea according to which cognitive organization requires a superordinate set of criteria, must necessarily be taken into account if one is to draw an adequate view of memory processes and structures. The theoretical goal of the schema notion seems to be this one (cf Norman, 1982). But, in light of the assumptions we just quoted, it seems reasonable to suppose that no matter what alternative framework of cognitive information-processing were to be proposed, it would prove to be, if not as heuristic, at least as accurate as the schema framework of social cognition. The aim of the remaining part of this work is, to a large extent, that very one.

III

SOCIAL PSYCHOLOGICAL ROOTS OF "SOCIAL COGNITION"

The present chapter attempts to summarize some of the most influential ideas in social psychology which provided the basis of contemporary research in social cognition. We believe that the major problem with social cognition is that it has failed to take into account the theoretical system formed by those ideas and has adopted a partial and reductionist view of the postulates of earlier social psychological approaches.

3.1 SOCIAL PERCEPTION

The term "social cognition" is not new. Tagiuri (1969) attributed the first use of this term to Kaminski (1959). Since then, it has been used as a synonym with "person perception" (Heider, 1958), "interpersonal perception" (Sherif, 1966), or "social perception" (Tajfel, 1969b), to refer to the kind of processes

> "...by which man comes to know and to think about other persons, their characteristics, qualities and inner states." (Tagiuri, 1969, p. 395).

and also how people adapt to their social contexts following those processes. It was the result of efforts

> "...at demonstrating that perceptual phenomena embedded in a social context do not require for their explanation a set of principles different from those used in general perceptual theory." (Tajfel, 1969b, p. 317).

This assertion may, however, be misinterpreted without reference to its theoretical context: the "New Look" approach, which developed in the late 40s (cf Bruner, 1958), and, placed substantive emphasis on affective factors as determinants of social perception. The New Look psychologists clearly rejected some of the most widely accepted classical assumptions of general and social psychology at that time. Contrarily to contemporary social

cognitivists, New Look theorists put equal emphasis on cognitive and affective components of information-processing, for they considered both as equally important components of perception, categorization, and, inference (e.g. Bruner et al, 1956; R. Jones, 1977).

3.1.1 The Postulates of the "New Look" Approach

One of the major assumptions of New Look psychologists was the reaction against the social psychological view of human beings as behaving on the basis of mere instinctive, genetic or innate forces (Beach, 1955), or as hedonic organisms searching for their own well-being at the expenses of others (cf Hollander, 1971). New look psychologists contended that people's social behavior could not be correctly understood as the simple outcome of innate tendencies with minimal cognitive mediation. As Tajfel (1969a) pointed out,

> "When we think of human attempts to understand the physical or the biological environment, man appears essentially as an exploring and rational animal, stumbling heavily on his way, pulled back by his insufficiencies and stupidities, but still imperfectly rational (...). But there seems to be one exception to this model (...). It is as if we were suddenly dealing with a different and strange animal that uses some of his abilities to adapt to some aspects of his environment, and is quite incapable of using them in order to adapt to others (...) We have the rational model for natural phenomena; we seem to have nothing but a blood-and-guts model for social phenomena." (pp. 79-80).

A second assumption of the New Look psychologists was that, contrary to the commonly accepted view of perceivers as passive information receivers, perception should be seen as an active process of selection, simplification and organization of incoming information (Bruner, 1957, 1958) or, in other words, perception should be seen as a part of a general process of categorization (Bruner et al, 1956). The mental construction of the world of stimulation was assumed as being related both to the psychological capabilities of perceivers and to factors related to social interactions. Bruner (1958) presented an interesting illustration of the New Look basic idea:

> "The physicist provides a description of the nature of stimulation in such terms as wave lenghts, radiant energy, chemical compounds. Nobody confuses these descriptions with what we experience - colours, brightenesses, tastes. The student of society, like the

> physicist provides descriptions of the "external environment" in terms of stratification, totemic clans, moieties. The question is how people perceive or register upon these features of the social environment. That is what is crucial in determining how we respond." (p.94).

Or, as was pointed out by Cantril (1957):

> "Our perception depends in large part on the assumptions we bring to any particular occasion.(...) This implies that the meanings and significances we assign to things, to symbols, to people, and to events are the meanings and significances we have built up through our past experience, and are not inherent or intrinsic in the "stimulus" itself" (p.284).

Less categorical than Cantril, Blackburn (1945), for instance, distinguished three kinds of factors influencing perception:

> "...there are factors which (...) depend on the stimuli themselves - things like strength or size of the stimuli, the way in which they are grouped, their similarity and so on. But in addition to these objective conditions there are a number of subjective conditions(...) depending principally on social factors. But there are still others which are far more individual, depending on a person's particular interests and attitudes." (pp. 3-4).

To summarize, social perception theorists recognized emotions and motivations as factors influencing memory and, especially, memory for social information (e.g. Bruner & Goodman, 1947; Bruner & Postman, 1947; McGinnies, 1949; Postman & Schneider, 1951). More important for our concerns, social perception theorists accorded significant importance to constructive activities in terms of which cognitive contents gain significant autonomy from stimulus constraints. This is an assumption we discuss in Chapter 5.

A third assumption, which was present in the quotation of Blackburn (1945), here above, was that perception is a purposive process, determined by the perceiver's needs, values and goals. These factors are more prone to influence the perception of people than the perception of objects but, they were not viewed as specific to person perception. As Tagiuri (1969) put it:

> "In the sense that we perceive or infer primarily psychological properties or potentialities through various cues, persons are doubtless specific objects (...). The perceiver may through his own presence and behavior in the phenomenal world of the other, cause changes in the way in which the person whose state he is trying to judge presents himself. This is, of course, quite different from the way in which a rock is a source of cues for a perceiver. In

> addition, in person perception the similarity between the perceiver and the perceived object is greater than in any other case. This unique fact probably inclines and enables the perceiver to make use of his own experience in perceiving, judging or inferring another's state or intentions." (p. 369).

With clear relation to this assumption, Tajfel (1969b) stressed the importance of normative factors, social values and cultural particularities on the perceptual activities of individual persons (cf Chapter 5).

In short, the "New Look" in perception provided social psychology with three main, interrelated postulates:

(1) - the similarity between perceptual activities directed toward human and non-human objects relies on the fact that perceivers are not mere receivers but, on the contrary, they are active organizers of the stimulation they perceive;

(2) - social behavior is related to cognitive mechanisms in the broadest assertion of this term, i.e. to information-processing (although the term was not in fashion) with its social value and affective components, rather than to each of those factors separately from the others;

(3) - although cognitive mechanisms are applied to the perception of human and non-human objects alike, person perception is more influenced by emotional and social factors than thing perception;

These assumptions inspired social psychological research, namely with respect to the study of the processes by which people come to interpret human activities in daily life.

3.1.2 The Social Perception of Personal Characteristics

As Markus and Zajonc (1984) pointed out, the dynamic approach initiated by the New Look in perception, created the necessary conditions for the emerging of an interest in the products of complex cognitive processes and structures associated with those processes. This interest arose in the 1950s and 1960s, extended to the 1970s and is the basis of the current social cognition approach. Theory and research produced within the intellectual context of the 1950s and 1960s was systematized by Bruner and Tagiuri (1954) into two

distinct sets: (1) the study of the processes by which people recognize emotions in themselves and in others; (2) the study of the perceptual and inference processes involving others' dispositional features.

The first trend was initiated with Darwin's (1872) experiments on the recognition of emotions from human portraits, and evolved toward studies on inferences about human emotions by means of scalings of emotional expressions (Scholsberg, 1952; Woodworth, 1938). Later, Schachter's (1964) Cognition-Arousal Theory focused on the processes by which people attribute their arousal states to specific feelings (e.g. Schachter & Singer, 1962; Schachter & Wheeler, 1962), and lead to the development of models of affect-cognition relationships of the kind we discussed in Chapter 2.

Social cognition evolved mainly in terms of the second trend, which was further divided by Bruner and Tagiuri (1954) into (a) studies that focused upon judgments about the self on the basis of situational or behavioral cues, and (b) studies which focused upon the formation of general impressions about others. Bruner and Tagiuri's (1954) insights proved to be accurate. The developments of social perception in the following three decades felt strictly inside those two trends. The first one seems to be well represented in the domain of research on "causal attribution", and, later, on <u>self-schemata</u> (Markus, 1977; Rogers, Kuiper & Kirker, 1977). The second seems to be illustrated by research on "impression formation" and "implicit personality theories" and, later, on "person-memory" (e.g. Hamilton, Katz & Leirer, 1980; Hastie & Carlston, 1980; Ostrom et al, 1981). Causal attribution, implicit personality theories and impression formation served as immediate antecedents of contemporary social cognition. They have <u>naïve psychology</u> (Heider, 1958), <u>lay epistemology</u> (Kruglanski, Hamel, Maydes & Schwartz, 1978) as their common object. In other words, the processes by which ordinary people gain and organize knowledge about themselves and about others, both indirectly and by personal experience. One might remark that, as a focus of interest, this is not that different from the one of contemporary social cognition. Other authors have developed trends in the study of the social-cognitive aspects of stereotypes (e.g. Allport, 1954; Bruner & Perlmutter, 1957; Campbell, 1967; Tajfel, 1969a). Let us briefly describe some aspects of those trends.

3.2 CAUSAL ATTRIBUTION

3.2.1 Theoretical Sources and Traditional Research Trends

Causal attribution was, perhaps, the most heuristic research field (at least by considering the amount of literature it inspired) in social psychology between the late 60s and the late 70s. Its most important conceptual basis was Heider's (1958) insight about the processes by which lay persons interpret the actions and states of others, in terms of inferences about the personal and the situational causes of observed behaviors. Persons were conceptualized as "causal units" in the perceiver's cognitive field (Heider, 1944). Among many interesting topics, Heider (1958) recognized the functional value of perceiving the actions of others as being caused by intrinsic personal factors. This allows, he suggested, perceiving others a invariant and, therefore, simplifying the amount of cognitive activity directed at understanding and predicting their actions. As he pointed out:

> "Attribution to personal causality reduces the necessary conditions essentially to one, the person with intention, who within a wide range of environmental vicissitudes has control over the multitude of forces required to create the specific effect." (p.102).

Heider's (1958) point of view, largely inspired by early works on perception, namely those of Brunswick (1952) and Michotte (1954), was later followed by other researchers who recognized the importance of inductive attributional processes as guides for social interactions (Jones & Davis, 1965; Kelley, 1967; Kelley & Michela, 1980).

These judgments involved personal versus situational causal attributions (e.g. Jones, Davis & Gergen, 1961), attributions of responsibility (Walster, 1966), self-attributions (Bem, 1965), attributions for success and failure (Weiner, 1974). Affects were recognized as important sources of bias (Heider, 1944; Miller & Ross, 1975; Snyder, Stephan & Rosenfield, 1978; Stevens & Jones, 1976; Weiner, 1974), but alternative interpretations based exclusively on rationalistic mechanisms soon appeared in the literature (e.g. Landman & Manis, 1983; Nisbett & Ross, 1980). The paradigmatic subject of the causal attribution approach was an "intuitive scientist" (Kelley, 1967), and the greater part of its models were normative, i.e., they prescribed the manner in which people "should" think in order to reach accurate judgments.

One of the causal attribution topics which merited most attention was the set of hypotheses presented by Jones and Nisbett (1972) about the "divergent perspectives of actors and observers". Whereas, they suggested, actors tend to attribute the causes of their behavior to situational constraints, observers tend to disregard situational cues and to concentrate their attention on actors, therefore, attributing their behavior to actors' dispositional characteristics. Evidence for Jones and Nisbett's (1972) hypotheses was founded on a considerable amount of research (e.g. Arkin & Duval, 1975; Nisbett, Caputo, Legant & Marecek, 1973; Snyder & Jones, 1974; Storms, 1973; Taylor & Fiske, 1975; but cf Bell, 1974; Calder, Ross & Insko, 1973; Feather & Simon, 1971; Sumpton & Gregson, 1981). The apparent pervasiveness of this phenomenon lead Ross (1977, 1978) to postulate the existence of a systematic bias characterized by the tendency of perceivers to underestimate the influence of situational factors and to overestimate the role of dispositional factors as causes of other people's behavior. He called this tendency the "fundamental attribution error".

3.2.2 Theoretical Underpinnings

On the basis of the recognizing of this tendency and of its cognitive functionality, researchers progressively changed from interest on causal attribution to concerns about "trait attribution". In other words, the study of the inferences subjects made in order to decide whether a given action was determined by personal or by situational causes, lead to the direct study of inferences about the actors' personalities and, later on, to the development of small theories related to trait and behavior schemata, person schemata, self-schemata, and so on.

But the study of causal attribution processes lead to some criticisms.

3.2.2.1 The Inaccessibility of Cognitive Processes

One of these was that the great quantity of work produced on causal attribution was not sufficient to account for the cognitive processes that lead to such attributions. Some of these criticisms dealt with the "unconsciousness" of attributional judgments. Nisbett and Wilson (1977) are

among the authors who suggested that subjects' causal reports are reflections of their implicit theories of causality, more than accurate descriptions of the processes in which they engaged to reach causal judgments. According to Nisbett and Wilson (1977), accuracy in subject's verbal reports about their causal attributions cannot be obtained. As a result, they suggested, it is more important to analyse the possible origins of those causal theories than to elicit paper-and-pencil responses about causal attributions (cf also Sabini & Silver, 1981; Smith & Miller, 1978; Wilson, Hull & Johnson, 1981; Wong & Weiner, 1981; for the polemic on this issue).[5] An attempt to solve the controversy on the "consciousness-unconsciousness" polemic was made by Ericsson and Simon (1980). These authors proposed that the accuracy of verbal reports depends on the kind of experimental tasks subjects are asked to perform. They suggested that biases tend to occur when subjects are not allowed to retrieve the processes they engaged in from short-term memory. If the kind of experimental setting prevents STM information to be retrieved, subjects would apply to long-term memory, and, in this case, they would verbalize their beliefs or theories about causal reasoning, rather than the actual processes they used. However, no general agreement seems to have been reached concerning this important problem (cf Hastie, 1983).

A second criticism was that attribution theorists apparently failed to provide structural assumptions about the cognitive background of the judgment processes they studied. Models like those of "correspondent inferences" (Jones & Davis, 1965), the "ANOVA cube" (Kelley, 1967) or Weiner's (1974) attribution-achievement theory, only postulated the kind of inferential processes people should use in making causal attributions. The structural concomitants of inferences were not sufficiently taken into account. It seems clear, then, that the comparison of normative and informal reasoning in the absence of structural assumptions could hardly permit one to understand those structures (cf Taylor & Crocker, 1981; Wyer, 1981).

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[5] It is interesting to note that this polemique recovers the actual problem about the difference between emotional states and self-reports of emotional states (cf preceding chapter).

An exception to the structural gap of causal attribution models was Kelley's (1972) postulate concerning "causal schemata" which would function as prestored knowledge structures underlying inferences about causal relationships between events. Nevertheless, as far as we know, causal schemata never received as much attention from causal attribution researchers as did normative models of causal judgment.

A general conclusion of these criticisms - lack of structural assumptions and lack of direct accessibility to the structures and processes involved in causal judgments - is that the normative models of mathematic analogy like Kelley's (1967) ANOVA cube could not describe real cognitive processes. In fact, those models present a feature in common with the information-integration approach to social cognition (cf preceding chapter). They only allow the comparison of formal principles of information processing with responses given by subjects when explaining their own or other persons' behavior. Nevertheless, they systematically failed to explain why, frequently, there is no concordance between the mathematical or logical principles postulated by researchers and the "intuitive" or (apparently) irrational strategies used by subjects (cf Hastie, 1983; Kelley & Michela, 1980). This is why other authors attempted to broaden the theoretical field of causal attribution. Examples of those attempts are Wyer's (1981) and Wyer and Carlston's (1979) models of causal attribution based on the information-processing approach of cognitive psychology, or Hewstone, Jaspars and Lalljee's (1982) tentative integration of attribution theory and social representations (cf also Sousa & Leyens, 1986; Vala, Leyens & Monteiro, 1985), or, Abelson's (1968) implicational molecule theory.

But one of the major contributions of attribution theories was to show that people simplify the information they receive about others and that one important strategy for dealing with this is to categorize their behaviors in sets of dispositional characteristics or personality traits. That is, causal attribution must be viewed as a process of categorization.

3.3 IMPLICIT PERSONALITY THEORIES

A field of research that, contrarily to causal attribution, emphasized the structural more than the process aspects related to the categorization of persons was implicit personality theories. Implicit personality theories were defined as

> "...(a) the categories that the person employs to describe the range of abilities, attitudes, interests, physical features (and accoutrements), traits, and values that he perceives in himself and others and (b) the beliefs that the person holds concerning which of these perceived characteristics tend to go together and which do not." (Rosenberg & Jones, 1972, p.372).

A complementary definition of implicit personality theories concerns beliefs about the central tendencies and dispersions of personality-traits among the members of a given population (Leyens, 1983). These "theories" are considered as "implicit" because

> "...a person's trait categories and beliefs are inferred from his descriptions and expectations about individuals and groups rather than being stated by him as a formal theory (...) Implicit theories (...) have also been dubbed "common sense", "lay", and "naive" to distinguish them from the scientific theories of personality." (Rosenberg & Sedlak, 1972, p.236).

3.3.1 Theoretical and Empirical Roots

The first use of the term "implicit personality theories" is generally attributed to Bruner and Tagiuri (1954) and to Cronbach (1955). According to Bruner and Tagiuri (1954), implicit personality theories correspond to intertrait connections which perceivers use in their judgments about persons. From this standpoint, it would not be surprising if those authors defined implicit personality theories as schemas. But the framework of the New Look was not absent from the first approaches to implicit personality theories through the search for individual differences (e.g. Shapiro & Tagiuri, 1959) and for personality variables such as authoritarianism (Jones, 1954) or dogmatism (Burke, 1966), emotional stability (Bossom & Maslow, 1957) and perceptual vigilance (Altrocchi, 1961), as the causes of such differences (cf Schneider, 1973).

3.3.1.1 Logical Errors and Halo Effects

Social cognition is endebted to research on implicit personality theories mainly with respect to the detection of judgmental biases that were first recognized as undesirable errors and that later became important research topics (McGuire, 1969). These were, namely the "halo effect" (Thorndike, 1920) and the "logical error" (Guilford, 1954; Newcomb, 1931). The halo effect was detected in observers' judgments in Thorndike's studies. These judgments showed high correlations which were due to the observers' tendency to cluster behaviors in light of an overall impression of "goodness-badness". The logical error was a similar bias: observers tended to infer certain behavioral patterns that they did not observe, from other behaviors that they actually observed, on the basis of their beliefs about trait and behavior co-occurrences. Thus, from what we stated in the preceding chapter, both the halo effect and the logical error can be seen as consequences of conceptually-driven information-processing.

3.3.1.2 Multidimensional Implicit Personality Theories

Rosenberg and colleagues' studies are the most typical illustration of an approach that developed from the recognizing of memory biases as a way to study cognitive organization. These authors showed that implicit personality theories could be structurally represented in multidimensional spaces (Rosenberg & Jones, 1972; Rosenberg, Nelson & Vivekanhantan, 1968; Rosenberg & Sedlak, 1972), that those spaces were relatively stable in terms of their dimensions (idem; Norman, 1963; Passini & Norman, 1966) and that they may be obtained from nonstructured materials, independently of researchers apriori concerns (Rosenberg & Jones, 1972). In structural terms, this perspective on implicit personality theories corresponds to the paradigm of <u>space models</u> in cognitive psychology (cf next chapter). Moreover, these authors showed that implicit personality theories were organized in terms of both descriptive and evaluative principles (cf also Peabody, 1970). Figure 1 depicts one of such multidimensional representations of implicit personality theories.

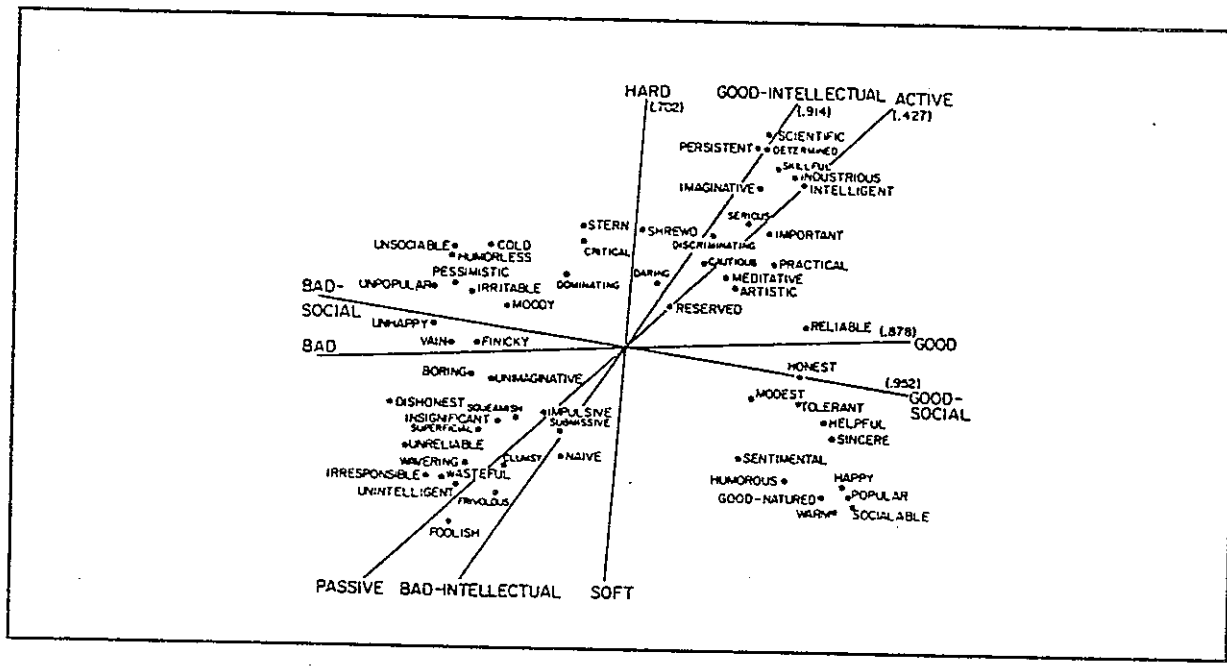

FIGURE 1 - Multidimensional Representation of an Implicit Personality Theory. From Rosenberg, S. & Sedlak, A. (1972). Structural representations of implicit personality theory. In L. Berkowitz (Ed) Advances in experimental social psychology, Vol. 6. New York: Academic Press. p.252.

3.3.2 Theoretical Underpinnings

One criticism of this approach is that authors limited themselves to considering implicit personality theories as products of inferences about trait and behavior correlations, therefore describing those correlational beliefs, but giving no attention to the very processes by which implicit personality theories are formed (Hamilton, 1981a; Hamilton et al, 1980; Ostrom et al, 1980). Other authors recognized the importance of such structural representations, but merged them into more complex models of information-processing. Wyer and Carlston's (1979) spreading-activation model of schematic processing is one example of such integrative effort. But, as we saw in the preceding chapter, that effort seems to have failed in providing a coherent process analysis of implicit personality theories. So, we might conclude that the state of the field remains similar to Schneider's (1973) account here below:

> "...there has been an emphasis on the dimensional aspects of trait similarities to the relative exclusion of questions concerning the content and dynamic qualities of implicit personality theory. The sophistication of methods is greater than the sophistication of substantive questions." (p.307).

Or, in Rosenberg and Sedlak's (1972) words:

> "Structural representations and their interpretation with external properties provide very useful summaries of sizable chunks of data, but their psychological utility, as well as that of other research in personality perception, will be best realized in combination with a formal and testable theory." (p.292).

Ebbesen and Allen (1979) are more straightforward in their criticism. According to these authors, although the research on implicit personality theories

> "...yielded a wealth of evidence about the type, strenght, and structure of the relationships among people's trait conceptions, little is known about the nature of the inference processes that allow these relationships to emerge in different tasks." (p.472).

3.3.3 Main Theoretical Contributions

Nevertheless, the important point made by research on implicit personality theories seems to be that it unequivocally showed that people organize behaviors and other perceived cues in terms of trait-categories and that these categories are part of rich and well organized cognitive representations. As was the case for attribution theories, the common basic assumption was that, it is more economic and predictive for perceivers to cluster distinctive behaviors under the hedge of a single trait label than to store them directly in memory. But in addition, the categorization of behaviors into traits should allow the perceivers to infer the presence of a personality trait from another one. As a result, the predictive ability of the perceiver should be augmented in an exponential manner (Leyens, 1983). Thus the postulate of cognitive economy is, somehow, met by the implicit personality theories paradigm. The reasoning underlying the postulate of such a mechanism is also inspired from the New Look in perception and, namely, in earlier research on Impression Formation.

3.4 IMPRESSION FORMATION

Although research on Impression Formation is a theoretical and empirical antecedent of implicit personality theories, we chose to talk about it last of all, because it seems to be the most direct basis of contemporary social cognition.

3.4.1 Order Effects

Asch's (1946) reasoning - deeply inspired on the Gestalt principles of perception - was that in forming an impression about a person, people attempt to give structure to the perceived characteristics of that person. In one of his experiments, this author asked two groups of subjects to form an overall impression of a ficticious person on the basis of a 6 trait list organized along a continuum of "desirability-undesirability". While one group heard first the desirable traits and then the undesirable traits (i.e. "intelligent", "industrious", "impulsive", "critical", "stubborn", "envious"), the other group was presented with the same traits in the reverse order. As was expected, the results showed that whereas the first group formed an overall positive impression, the second formed a negative one. More generally, did subjects not only spontaneously organize the traits into coherent global structures, but they also organized those structures according to the initial content of the information flow (Asch, 1946). Other explanations for primacy effects were proposed in the field of information-integration theory. Among these, there are inconsistency discounting, where subjects are assumed to give less importance to later adjectives because of their contradictory content with respect to the earlier ones, and attention decrement, where later traits in the list are supposed to be given less attention than the earlier ones (Anderson, 1981). Despite these alternative explanations, and the polemics they generated "primacy effects" are a clear illustration of the influence of information acquisition on memory organization. While other authors showed that in certain less spontaneous conditions the opposite effect (i.e. "recency effect") may be found, the primacy effect seems to be the most pervasive one (Anderson, 1981). However, empirical evidence has also showed that the relative importance of primacy over recency effects, and vice-versa, may

strongly depend on factors like the subjects' task, the time mediating between the independent and the dependent variables, and so on (cf Leyens, Aspeel & Marques, 1986).

3.4.2 Centrality Effects

Perhaps more important than the study of order effects was Asch's (1946) analysis of trait-centrality, which has continued to trigger an enormous amount of research until nowadays (e.g. Hastie et al, 1980). Asch (1946), suggested that the organization of an impression in memory implies that certain traits are central structural components, therefore serving as organizational foci, and that the others are more peripheral in the impression structure. In order to test this hypothesis the author presented two groups of subjects with a 7-trait list. One group was presented with the traits "intelligent", "skillful", "industrious", "warm", "determined", "practical" and "cautious". The other group was presented with the same list but the trait "warm" was replaced by "cold". The prediction was that the "warm-cold" manipulation would lead impressions formed by subjects to differ from one group to the other. In fact, whereas, for instance, in the "warm" condition 91% of the subjects inferred that the hypothetical person described by the 7 traits would also be generous, only 8% of the subjects in the "cold" condition made such an inference. Other inferred traits were "good-natured" (94% vs. 17%), "sociable" (91% vs. 38%), or "humane"(86% vs. 31%).

To ensure the central status of the "warm-cold" dimension, Asch (1946) replaced respectively "warm" and "cold" by "polite" and "blunt" and conserved the other 6 traits. The two lists corresponding to the "polite-blunt" manipulation were presented to two new groups of subjects who were also asked to rate their agreement about the presence of other complementary traits in the person that had been described. The results showed that the "polite-blunt" manipulation lead to practically no differences in the impressions formed by subjects in these two groups. Asch (1946) concluded that the "warm-cold" dimension must be an organizing principle of impression formation.

3.4.3 Shortcomings of the Early Approach to Impression Formation

Some criticisms were made of Asch's (1946) approach to impression formation: one, which was referred to here above, concerns his explanation for primacy effects and the implications of that explanation for processing assumptions. This problem was on the origin of the development of "linear models" of impression formation, based on arithmetical operations, such as addition, multiplication and averaging (Anderson, 1981), as strategies of information integration; the second criticism arose with respect to the problem of "trait centrality".

3.4.3.1 Linear Models

One problem, which was fully recognized by Asch (1946), was that, since an impression is a unity which differs qualitatively from the sum of its component traits, it is virtually impossible to predict what impression will be formed on the basis of any given list of traits. This shortcoming was addressed by authors who developed analytical linear models of impression formation: average models (Anderson, 1962) state that a final impression should be the outcome of the average sum of the values attributed by the perceiver to each trait on the impression along a given dimension (e.g. likability); sum models (Fishbein & Hunter, 1964) state that the overall impression should be the result of the simple sum of traits' values. Anderson (1965) presented a tentative integration of both models with a weighted-average model of impression formation. Nevertheless, as far as we know, information-integration models have been applied in empirical studies, but their validity as such has never been tested (Wyer & Carlston, 1979), and authors turned to the information-processing approach (cf Hastie, 1983).

3.4.3.2 The Varying Central Status of Personality Traits

The second problem is more important for our purposes here: although "warm" and "cold" proved to be central in Asch's (1946) experiments, they could hardly be considered as central to every other impression. Wishner (1960) was the first to address this problem. Asch's results, he argued, were due to the fact that "warm" and "cold" were highly correlated to the other 6

traits in the list that was presented to the subjects. Therefore, if replacing "warm" by "polite" and "cold" by "blunt" lead to no differences, it was because the polite-blunt dimension was not correlated to the complementary traits on the list. Wishner (1960) obtained empirical support for this argument (cf also Rosenberg et al, 1968; Rosenberg and Sedlak, 1972) and efforts were concentrated on discovering the dimensional organization of impressions as implicit personality theories (Norman, 1963; Passini & Norman, 1966; cf Hastorf, Schneider & Polefka, 1970). The genesis of the obtained trait intercorrelations was explained in terms of learned associations (cf Gergen & Gergen, 1981) either as outcomes of perceived co-occurrences, or as features of semantic similarity (cf Gara & Rosenberg, 1980).

Impression Formation came to be viewed as a particular process within the framework of implicit personality theories (Gergen & Gergen, 1981; Hamilton, 1981a; Hastorf et al, 1970; Leyens, 1983; H. Paicheler, 1984; Shaver, 1977). But the major criticism made to the classical approaches to impression formation applies to the domain of implicit personality theories as well. Quoting Gergen and Gergen (1981):

> "Although Asch's findings triggered a long line of research(...) his Gestalt interpretation now commands less attention. Why? The answer lies partly in the failure of this approach to explain (1) how the various trait terms are organized and (2) why certain traits are central and others secondary."(p.55).

Thus Asch's (1946) holistic and intuitive approach, was replaced by a more analytic one:

> "The use of a single judgment, such as liking rating, as the dependent variable was certainly appropriate to test these [impression formation] models, but such a judgment could in no way capture the overall conception of another person's personality that is usually implied by the notion of an impression and that was the central interest of Asch." (Hamilton et al, 1980, p.122).

Based on this general tendency, social cognition approaches centered on acquisition, organization and inference processes as a response to the limitations of early holistic approaches of impression formation and to the gaps in implicit personality theories' studies.

3.5 CONTEMPORARY RESEARCH ON IMPRESSION FORMATION

Contemporary research on impression formation runs by the name of person-memory (e.g. Hastie et al, 1980). It was developed from two sources. One, was Asch's early approach. The other was implicit personality theories (cf Ebbesen & Allen, 1979; Hamilton et al, 1980). But research developed in that field is a good illustration of the extent to which contemporary social cognition in general is endebted to Asch's early work about the acquisition and organization of information about persons. Let us review some recent directions of research within this field.

3.5.1 Effects of Thematic Organization of Person Impressions on Recall

One aspect to which social cognitivists devoted their attention is the cognitive organizing principles of information about persons. The general goal is to study the way schema-congruent, incongruent and irrelevant information is selected and integrated (e.g. Hastie, 1981; Hastie & Kumar, 1979). Ostrom et al (1981) designed this phenomenon as thematic organization. Thematic organization refers both to the formation of associative structures of informational items describing target-persons and to the integration of incoming organization into prestored structures.

The importance of the integration of information about persons was analysed in studies which compared impression formation tasks to simple memory tasks. The general hypothesis underlying the research program presented by Hamilton et al (1980) was that subjects who are instructed to form an impression about a person (therefore engaging in deep processing operations) show better recall of the characteristics describing target-persons than subjects who are uniquely instructed to memorize those characteristics. Impression sets led subjects to form coherent interitem network associations facilitating later memory-search, as compared to non-integrative acquisition (Hamilton et al, 1980). These authors reviewed a series of experiments that support that hypothesis in the field of person-memory.

3.5.2 Effects of Prestored Knowledge on Impression Formation

Other studies showed that the same effect occurs when impression formation is related to previously existing representations. This was applied, for instance, to the study of impressions about the self.

Markus (1977) selected three groups of subjects on the basis of a pilot study which had showed them to describe themselves either in "schematic" terms according to a dependence-independence criterion or as "aschematic". That is, schematic subjects possessed clear self-representations whereas aschematic subjects perceived themselves more ambiguously, in terms of the dependence - independence criterion. A second time, those subjects were presented with a series of trait-descriptors. From these trait-descriptors, some were associated with "dependence" and others with "independence". Subjects were asked to rate the extent to which those traits might apply to their self-descriptions and reaction-time measurements were taken on their decisions. Results showed that schematic subjects (both dependent and independent) made significantly more self-attributions of traits consistent with their self-schemata than of traits inconsistent with those schemata. Further, schematic subjects took significantly more time to identify self-schema incongruent traits with their personal characteristics than did aschematic subjects.

Rogers, Kuiper and Kirker (1977) showed, complementarily, that incoming information is more easily encoded and recalled with reference to self-schemas than with reference to other criteria.

The effects of prestored knowledge were also studied with respect to impressions formed about abstract persons, through the analysis of the organizing functions of prototypical traits of personality. This trend was initiated by Cantor and Mischel (1977). These authors asked their subjects to judge the extent to which each one of 200 personality-traits was related to the category-names "extrovert" and "introvert". The authors selected three sets of personality-traits on the basis of those judgments. One set was formed by traits strongly related to "introversion" (the introversion prototype). Another set was composed by traits strongly related to "extroversion" (the extroversion prototype). A final set was composed by traits weakly related to

both categories. The three sets were presented to a second group of subjects in the form of four personality descriptions: a typical introvert, a typical extrovert, an atypical introvert and an atypical extrovert. Results showed that, contrary to subjects in the atypical conditions, subjects who received the typical descriptions were systematically biased toward erroneous recognition of traits coherent with those descriptions, in a subsequent recognition task.

3.5.3 Organization of Personal Information Around Persons or Traits

Another issue of research in person-memory is whether information about persons is organized in terms of person-units versus trait-units. One factor whose influence has been studied is familiarity with judgmental targets.[6]

Pryor and Simpson (1979, cited in Ostrom et al, 1981) asked a group of subjects to write down the names of the first three public (i.e. familar) persons they could remember. Next, subjects were asked to list three well-known features of each of those persons. Then, the authors selected the 5 most frequently cited persons and the 5 most frequently features assigned to each of those persons. Matrixes were constructed by crossing the 5 familiar persons with 5 unfamiliar ones. The cells were the previously selected features. The matrixes were constructed so that each feature alone was not discriminative of a single person (cf Figure 2).

Four stimulus-sets similar to the matrix in Figure 2 were constructed. Two of them described only familiar persons, and the other two described only unfamiliar persons. Two new groups of subjects were presented with either the familiar or the unfamiliar matrixes, and were, later, asked to recall the features and to list them by the order they came to mind. A serial order analysis computed on the lists made by the subjects showed that they recalled (and thus organized) the features in terms of persons if these were familar persons, and, in terms of semantic similarity if the stimulus-persons were unfamiliar. Pryor, Simpson, Mitchell, Ostrom and Lyndon (1982) obtained similar results.

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[6] This problem is of primary concern for some current approaches to stereotyping, and, shall be discussed in more detail in Chapter 6.

	S. Falcon	D. Carr	A. Cox	C. Petterson	C. Cooke
Ab. Lincoln	Tall	Honest	Self-Taught	Leader	Bearded
Bob Hope	Golfer	Old	Conservative	Commedian	Hard-Working
Muhamed Ali	Religious	Athlete	Champion	Black	Opinionated
Clint Eastwood	Tough	Actor	Handsome	Rugged	Virile
Jerry Brown	Outspoken	Bachelor	Politician	Californian	Independent

FIGURE 2 - Example of a Person-Characteristics Matrix crossing Familar Persons (Rows) with Unfamiliar Persons (Columns). From Ostrom, T., Pryor, J., & Simpson, D. (1981). The organization of social information. In E. Higgins, C. Herman, and M. Zanna (Eds) Social cognition: the Ontario symposium on personality and social psychology, Vol. 1. Hillsdale, NJ: Lawrence Erlbaum Associates. p.10.

More recently, Pryor, Kott and Bovee (1984) found results consistent with those summarized above. But they added a further development to the apparent role of familiarity on the encoding of person information. According to these authors, the organization of information about persons in memory is dependent on familiarity with the target-person only to the extent that heightened familiarity increases the probability that information about that person becomes redundant. Information redundancy should, in turn lead to the organization of information around person-units rather than around trait-units. To test this hypothesis, Pryor et al (1984) presented one group of subjects with a list of personality traits and asked them to list from one to three behaviors they considered as closely related to each one of the traits. A series of information matrixes, with persons as rows and traits as columns and with cells referring behaviors pertaining to a person and coherent with a personality-trait, were constructed on the basis of subjects' answers. These matrixes were varied according to the redundancy of information provided in the cells. A second group of subjects was presented with the matrixes. After an interference-task, subjects were asked to recall the information provided in the matrixes' cells. Recall was analyzed in terms of sequential clusterings of information. Results showed that, as predicted, recall was better for high-redundancy than for lower-redundancy matrixes. But, more

important, high-redundancy matrixes increased the probability of recall to be organized in terms of persons rather than in terms of personality-traits.

3.5.4 Theoretical Underpinnings

It seems interesting to note, first, that the three approaches to impression formation in social cognition have as their common feature the important part they assign to schematic organization in memory.

Second, although researchers based their experiments on stimulus materials issued from information about persons, they would, in principle, obtain identical results with impersonal stimulation. Thus, if on the one hand it seems clear that the social cognition approach to impression formation enlightened important features of cognitive processing with respect to information about persons, it seems also true that, as we pointed out in the preceding chapter, it added little to the general knowledge about the processes which it addressed.

Third, it is important to stress the fact that the original principles of social perception were only partially taken into account in that research. Contemporary research in person-memory considers perceivers as active information-processors but ignores the part played by affects (this is notorious, for instance in studies about self-schemata) and social values on judgments. It is understandable, then, that person-memory in particular and social cognition in general were so strongly based particularly on Asch's model of impression formation. From the classical trends of causal attribution, implicit personality theories and impression formation, Asch's model was the one which, from the beginning, developed independently from motivational and social factors.

3.6 STEREOTYPES

Opposed to impression formation, what aspects does stereotyping bear in common with the above mentioned fields of study? Unlike these fields, stereotypes have, until recently, been only of marginal interest within the field of social perception (cf Ashmore & DelBoca, 1981; LeVine & Campbell, 1972; Miller, 1982). However, most, if not all, of the contemporary

developments in the study of stereotypes or intergroup perception are indissociable from the orientations of social perception and social cognition. To illustrate, stereotypes have been viewed as outcomes of a categorization process (cf Allport, 1954; Tajfel, 1969a), as strongly determined either by perceptual processes (e.g. Campbell, 1967) or by social values (cf Tajfel, 1981), as implicit personality theories applied to particular social groups (e.g. Ashmore, 1981), as "group impressions" (e.g. Rothbart, 1981), or as determinants of causal attributions (e.g. Duncan, 1976; Taylor & Jaggi, 1974; Wilder & Cooper, 1981). Furthermore, the field of stereotypes was the one which most easily provided concrete grounds for a criticism against biological determinisms in social behavior. Indeed, before the development of social perception, stereotypes were frequently viewed as projections of undesirable fantasies or of the displacement of aggressive tendencies toward outgroups, or as the manifestation of particular personality syndromes (for reviews, e.g. Billig, 1976; Brown & Turner, 1981; LeVine & Campbell, 1972).

3.6.1 Theoretical Sources of the Cognitive Approach to Stereotypes

A complete historical and/or thematic review of theory and research on stereotyping and intergroup relations would fall well beyond the scope of this chapter. Further, exhaustive reviews are available in the literature (e.g. Ashmore & Del Boca, 1981; Billig, 1976; Brewer, 1979b; Brewer & Kramer, 1985; Brown, 1984; Brown & Turner, 1981; LeVine & Campbell, 1972; Miller, 1982; Milner, 1981; Stephan, 1984; Tajfel, 1978a, 1978b, 1978c, 1981, 1982a, 1982b). So, we limit ourselves to outlining some of the early contributions to contemporary cognitive approaches to intergroup perception.

3.6.1.1 The Notion of Ethnocentrism

William Graham Sumner was a cultural anthropologist, and his works appeared long before the New Look approach. However, his influence on stereotype theories in social psychology is all but negligible.

Sumner's (1906) notion of ethnocentrism is undoubtely among the most important principles of stereotype approaches in social perception. It referred to a supposedly universal system of social values which determines

the behavior toward and the perception of ingroup and outgroup members. As he wrote:

> "Ethnocentrism is the technical name for this view of things in which one's own group is the center of everything, and all others are scaled and rated with reference to it (...). Each group thinks its own folkways the only right ones, and if it observes that other groups have other folkways, these excite its scorn. Opprobrious epithets are derived from these differences. "Pig-eater", "cow-eater", "uncircumcised", "jabberers", are epithets of contempt and abomination(...). For our present purpose, the most important fact is that ethnocentrism leads a people to exaggerate and intensify everything in their own folkways which is peculiar and which differentiates them from others." (Sumner, 1906, pp. 12-13 in LeVine & Campbell, 1972, pp. 7-8).

Although it was applied to the relationships among groups in the so-called "primitive societies", the preceding statement conveys the two central postulates of theory and research on stereotypes. One, is that intergroup differences are exaggerated so that discrimination is more effective. The other, is that products of the ingroup are evaluated more positively than outgroup products. Implicitly, it conveys a view of stereotypes which is strongly associated with the attribution of dispositional characteristics to ingroup and outgroup members, and, therefore, with a process of categorization. Further, it implicitly involved an emotional commitment to a system of social values.

3.6.1.2 Stereotypes and Mental Representations

More directly related to the New Look approach, although still remote in time, was Lippmann's (1922) insightful work about stereotypes. The central notion in that work was that of pseudo-environments, i.e. simplified representations of the individual's relevant aspects of his/her social world. Stereotypes were viewed as components of such representations and were supposed to accomplish functions of information selection and information simplification by imposing structure on the world of external stimulation. But the affective component focused on by Sumner was not absent from Lippmann's speculations. As he put it:

> "A pattern of stereotypes is not neutral. It is not merely a way of substituting order for the great blooming, buzzing confusion of reality. It is not merely a short cut. It is all these things and

> something more. It is the guarantee of our self-respect; it is the projection upon the world of our own sense of our own value, our own position, and our own rights." (p. 96 in Miller, 1982, p. 7).

So, stereotypes were seen as accomplishing the twofold function of information simplification and enhancement of self-esteem or, given its association with stereotyping, of positive social identity (cf Chapter 6).

3.6.2 Categorization Approaches to Stereotypes

Allport's (1954) work is generally considered as the forerunner in the current cognitivist approach to stereotyping and, by its assumptions, was clearly committed to the social perception postulates. Allport suggested that stereotyping is part of a larger process of categorization, and defined stereotypes as exaggerated beliefs associated with a cognitive category. The functions of stereotypes, he suggested, are similar to those of other categories. However, perceptual and cognitive processes related to stereotypes, function as means of informational simplification, but also as means of justification, or rationalization of the inferior social status of certain groups:

> "The fact that prejudiced people so readily subscribe to self-contradictory stereotypes is one proof that genuine group traits are not the point at issue. The point at issue is rather that a dislike requires justification." (p. 191).

Allport and Postman's (1965) classical study on the "psychology of rumor" is illustrative of the interaction between perceptual processes and social values as it was postulated by Allport. In one of their experiments, these authors presented their subjects with a picture depicting a subway scene. Among other details, subjects could see a first-plan interaction between a well-dressed Black and a White with a razor in his hand. Subjects were asked to describe what they saw to another subject who did not see the picture and who, in turn, should tell what he heard to a third subject, and so on. Many details were ommitted in the transmission. But, more important for the present point, the messages were so distorted that the first-plan scene was changed according to the current stereotypes of Blacks and Whites. Specifically, at the end of the "rumor chain", the message conveyed was of a

threatening interaction between a White man and a "menacing Negro" with a razor on his hand. Clearly, this experiment drew heavily on postulates about the constructive capabilities of cognitive functioning, and its links with current social values.

3.6.2.1 Stereotypes and Perceptual Processes

Another trend which developed in stereotype research is the so-called "perception of outgroup attributes" (LeVine & Campbell, 1972). This approach provided the basis for the central thesis of a large body of contemporary research and we shall discuss it in more detail in Chapter 6. According to the proponents of this orientation, stereotypes present some degree of "social validity", i.e. they are representations of actual social roles and, therefore, have a realistic component, a "kernel of truth" (Campbell, 1967). The realistic component of a stereotype is the reverse function of the amount of interpersonal contact between ingroup and outgroup members (e.g. Campbell, 1967; LeVine & Campbell, 1972). When contact is insufficient to afford an "accurate" stereotype, the stereotype is filled with general social beliefs about its real world counterpart (idem).

Contrary to this view, other authors argued that stereotypes are sociocultural images, totally independent from personal experiences with the members of stereotyped groups. A classical work within the sociocultural perspective was that reported by Katz and Braly (1933, 1935). These authors founded the classical adjective checklist methodology for stereotype descriptions. However, Katz and Braly's (1933, 1935) studies have been attacked on two fronts. One is that they did not specify the nature of the psychological processes involved in the assimilation of stereotypic beliefs (cf Ashmore & DelBoca, 1981). The other is that it limited itself to providing a collection of "stereotypes" whose concomitant social processes were disregarded (cf Di Giacomo, 1981).

3.6.2.2 Stereotypes and Social Categorization

An answer to these criticisms was provided, we believe, by Tajfel's work. This work emerged as an articulation of the early cognitive approaches of

Bruner and colleagues with some of the principles of the sociocultural approach.

3.6.2.3 Current Reductionist Views on Early Social Categorization Approaches

Since Chapter 6 focuses basically on Tajfel and colleagues' model of stereotyping and intergroup relations, we take benefit of this introduction to clarify an apparently current misunderstanding about Tajfel's early work on social categorization. It may be illustrated as follows:

> "The more specific catalyst for the resurgence of interest in a cognitive approach to this domain, I believe, is the work of Henri Tajfel (...). What this work demonstrated is that judgmental and behavioral phenomena reflecting the differential perception of and response to ingroup and outgroup members can be the consequence of categorization processes alone and need not reflect preexisting prejudicial attitudes or motivated self-interest." (Hamilton, 1981a, pp. 335-336).

This statement might be considered representative of others one could find in almost any theoretical or empirical paper coming from the social cognition approach to stereotyping. Although we might not say that it is completely erroneous, it ignores the fact that, according to Tajfel (e.g. 1969a), stereotyping implies cognitive, evaluative and emotional factors, and that evaluative factors are basically the result of assimilations of social values.

It is true that, in his early work, Tajfel postulated that categorization alone heightens differentiations between instances belonging to contrasting categories. However, he also emphasized the fact that such a process is intensified by the emotional relevance that the categories have for the perceiver:

> "There is one obvious and essential difference between (...) experiments [involving psychophysical stimulation], and stereotype judgments of human beings <u>when these are associated with prejudice</u> (...). The consequences of a mistake in judgment are radically different in the two situations. If a man is prejudiced, he has an <u>emotional</u> investment in preserving the differentiations between his own group ant the "others" (...). The preservation of these [inaccurate judgments] is self-rewarding and this is particularly so when prejudiced judgments are made in a social context strongly supportive of hostile attitudes towards a particular group." (Tajfel, 1969a, pp. 85-86, emphasis added).

As did many authors like Allport (1954) and Lippmann (1922), Tajfel (1969a) stressed the fact that stereotypes serve to justify real social relations. The misunderstandings of his early theorizing and of its subsequent developments, recently lead Tajfel (1981) to note that

> "Some of the recent reformulations represent a theoretical retreat from the earlier work. This is so for two reasons. The first concerns the crucial role played in stereotypes by value differentials associated with social categorizations. This "value" aspect of categorizations was one of the cornerstones of the earlier [Tajfel and colleagues'] theories. It has lost its explicitness through the emphasis in the more recent work upon the near-monopoly of "pure" cognitive processes in the functioning of stereotypes. The second reason for the theoretical retreat is a lack of specification (...) of the nature of dimensions on which differences between social groups and categories or similarities within such groups would or would not be accentuated." (p. 141).

According to Tajfel (1969a), stereotypes are cognitive representations, which correspond to attributions to discontinuous category-labels, of sets of characteristics (i.e. personality traits) which vary on continuous dimensions. Once those continuous characteristics are assigned to the category labels, they become represented in discontinuous form. This process was supposed to have a social component, because, let alone the social learning of evaluations and preferences, assimilation processes were assumed to generate a

> "...balance that occurs early in life between a child's identification with his own group and the pressure of notions about various groups, including his own, which are generally accepted in society." (p.86).

Tajfel's "pure" cognitivist followers are right to suggest that he emphasized the role of cognitive processing in intergroup perception. However, a guideline emerges from the earlier work of Sumner through to the contemporary work of Tajfel. This guideline entails the acceptance of the fact that stereotypes are endebted to cognitive processes, but these processes must involve some emotional and social concomitants. These are related to the acceptance of value systems according to which individuals categorize themselves and others in order to achieve a positive image of themselves as social actors. In these terms, stereotypes have been approached in close relation to the basic postulates of social perception.

3.7 CONCLUDING REMARKS

3.7.1 The Pros and Cons of Social Cognition

Causal attribution, implicit personality theories, impression formation and stereotypes have in common the fact that they focus on information acquisition, organization and retrieval about abstract and/or concrete target-persons. Therefore, it is not surprising that social cognition integrated these topics in a single model of information-processing. But, given their links to the cognitive perspective of social psychology, they presented unsolved common problems.

It was assumed that the effect of a given stimulus depends on how it is interpreted by the perceiver, that such an interpretation depends both on the stimulus properties and on the perceiver's states, values and expectancies, that perceivers seek to simplify and to find coherence in the information they receive, and that such processes function as guides for action (Bartlett, 1932; Eiser, 1980; Krech & Crutchfield, 1948; Taylor & Crocker, 1981). Further, especially in the case of stereotypes, but also in some causal attribution approaches, it was postulated that perceivers attempt to attain a positive image of themselves.

In addition, whereas causal attribution focused on processes and neglected structures, implicit personality theories partially succeeded in describing structures but did not develop an adequate process model. Impression Formation in its classical approach was not analytical enough to be a satisfactory model for the processing of social information. The most analytical aspects of early research on stereotyping were "purely" cognitive, although such "pure" cognitive aspects cannot be said to provide a full account of the whole stereotyping process. These shortcomings alone, explain and justify the emphasis put by social cognitivists on the paradigm of cognitive psychology.

The preceding chapter and the one now closing convey a bitter attitude with respect to social cognition. The contemporary social cognition approach is sometimes thought of as a "revolution" in social psychology (e.g. Fiske & Linville, 1980). Without intending to be "reactionary", it is worthwhile to note that such a revolution left many interesting and theoretically-rich ideas behind. The reinterpretations of Tajfel's (e.g. 1969a) model of social

categorization are a quite clear example of this fact. To conclude, we believe it worthwhile to stress that we do not intend to claim that cognitive social psychology should be abandoned. Far from that, we fully agree with the fact that:

> "To encourage the belief that the basic principles [of social psychology] have or will be discovered on other territory is to promote a passive reliance on borrowed ideas and the growth of an ersatz social psychology." (Asch, 1952, p.34)

In our opinion, and given the points made in the preceding chapter and in this one, this advice seems to embody surprising actuality.

IV

SOME GENERAL PRINCIPLES OF COGNITIVE REPRESENTATIONS

In the preceding chapter we illustrated the fact that social psychology came to conceptualize individuals as active information-processors, who adapt to their environment mainly by simplifying and organizing incoming information, and, whose responses are functions of the representations they hold, more than direct consequences of raw stimulation or innate tendencies. The goal of the present chapter is to systematize a set of processes which could be considered as crucial to understanding information-processing. Specifically, we attempt to present a theoretical framework for cognitive structures and processes on the basis of a general notion of long-term memory representations. In other words, the present chapter should be understood as the analysis of one of the components - the cognitive, intrapersonal one - of social psychological processes (cf Tajfel, 1981).

4.1 GENERAL PRINCIPLES OF COGNITIVE REPRESENTATIONS

Palmer (1978), defined a mental representation, or representing world, as a simplified model of the structure of the "real world".[7] According to this author, the system created by these two "worlds" presents two general properties: 1) the real world and the representing world are related to each other, such that, at least some of the objects (and some of their properties) as well as some of the associations existing among them in the real world are present in the representing world; 2) once formed, the representing world becomes independent from the real world. That is, once objects and relations among objects are reified, the representing structure gains relative autonomy. This is an important point, since it distinguishes representing worlds from

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[7] It should be noticed that the term "real world" is not used here to refer to an abstract reality independent of individuals' gnoseologic activities, but rather to those environmental properties of the physical environment that are accessible to the perceiver's sensory, perceptual and cognitive structures (cf Rosch, 1975b, 1978).

[8] A related consequence is that two representations of the same reality can

mere cognitive mediation.[8]

Representations have two structural components - object elements and relational elements. These elements are interdependent: on the one hand, the meaning of a representing object depends on its relations to the other objects inside the representation, and on the other hand, relational elements are determined by the characteristics of separate objects.

4.1.1 Categorization and Inference

The two principles of cognitive representations imply two kinds of processes: on the one hand, there is the need to simplify the properties of objects and their relationships in the real world; on the other hand, it is necessary to insure the autonomous functioning of the representing world. These processes are categorization and inference (e.g. Bruner et al, 1956; Smith & Medin, 1981). How do they function? According to Smith and Medin (1981):

> "To have a concept of X is to know something about the properties of entities that belong to X, and such properties can be used to categorize novel objects. Conversely, if you know nothing about a novel object but you are told it is an instance of X, you can infer that the object has all or many of X's properties; that is, you can "run the categorization device in reverse" (p.8).

Broadly defined, categorization and inference are processes by which perceivers construct generalizations on the basis of their experiences with real world stimulation. Those processes provide perceivers with knowledge about the attributes that represent classes of real world objects.[9] The beliefs and expectancies generated by previous categorizations function as criteria for the categorization of novel objects (Bruner et al, 1956). They

differ in the way they represent it: by representing the same objects in different ways; by representing different relations among the same objects; or, simply, by representing different objects (Palmer, 1978).

[9] Although some authors distinguished among categories, as classes of objects in the real world, and concepts, as mental representations of those classes (e.g. Murphy & Medin, 1985; cf also Bourne, Dominovski & Loftus, 1978 for a different distinction), we use both terms interchangeably. Contrary to those authors, we use the term attribute to refer to dimensional and featural components of concepts, and the term property to refer to characteristics of real world objects. Later in this work we discuss different possible assumptions about concepts and attributes as well as their implications. For the moment, our discussion is limited to basic aspects which, in principle, should not be contradictory to any of those assumptions.

determine the hypotheses perceivers formulate in categorization tasks and also the strategies they will follow to verify those hypotheses (e.g. Bruner et al, 1956; Lindsay & Norman, 1977). On the other hand, previously stored categorical knowledge may serve to fill in gaps in incoming information with conceptual "default values" and to establish relationships among cognitive categories without the direct intervention of real world stimulation (idem).

Cognitive researchers have pointed out a number of steps in information-processing, generally beginning at basic sensory levels, and ending with more complex mechanisms such as language use and language comprehension (e.g. Bourne et al, 1979; Bruner, 1957; Bruner et al, 1956; Gregg, 1974; Lindsay & Norman, 1977; Neisser, 1976; Sokal, 1977). These steps correspond to different, albeit closely related, functions. At the sensory level, categorization reduces the environmental complexity by allowing perceivers to recognize invariances, or, dispositional characteristics (Brunswick, 1952) and to generate perceptual constancy by eliminating mediational variations (idem) and separating critical from accessory attributes for category inclusion (Bruner, 1957; Bruner et al, 1956). Categorization should also allow the fast identification of new objects by determining their similarities to cognitive categories. That is, categories should be considered as pattern recognition devices (Lindsay & Norman, 1977; Norman, 1982; Smith & Medin, 1981). As a result, categorization should contribute to stabilizing learning processes by guiding perceivers' exploratory activities toward the most informative properties of the encountered objects, events or situations (Bruner, 1957).

4.1.1.1 Implications of the Categorization-Inference Process

The functions we listed above show that the various steps of information-processing are not complementary just because they follow a coherent order from peripheral to central mechanisms. Also, the knowledge structures existing at the central levels determine the way in which sensory and perceptual mechanisms are put into operation (Lindsay & Norman, 1977). This is related to a second important phenomenon. As it provides the perceiver with hypotheses (expectancies) for information-search, for instance,

categorization is also a guide for instrumental activity. Further, it might determine the perceiver's behaviors by providing him/her with beliefs about the causes of behavior of others, about the consequences of his/her own, and so on (cf Bruner, 1957; Bruner et al, 1956; Neisser, 1967; Wason & Johnson-Laird, 1972).

The functions of categorization depend on prestored basic knowledge existing in long-term memory. But long-term memory encompasses different, albeit strongly interrelated kinds of knowledge.

4.1.2 Relationships Between Episodic and Semantic Memory

Tulving (1972) postulated the existence of two systems in long-term memory: episodic memory and semantic memory.

Episodic memory is a biographical and idiosyncratic system which depends directly on the individual's perceptual activities and which is organized along a simple temporal dimension. That is, it results to a large extent from data-driven information processing. Semantic memory, on the contrary, is formed by multidimensional configurations of abstract categories and, hence, it is not constrained by temporal determinants. It encompasses programs capable of assigning meanings to words within phrases, to phrases within contexts, and so on. In addition, it allows different objects to be referred to by identical names and different individuals to apply the same names to the same objects. As it is free from chronological constraints, highly organized and nomothetic, semantic memory enables individuals to use a relatively consensual and stable linguistic code (Costermans, 1980; Kintsch, 1974) and to possess relatively consensual and consistent knowledge about the world (Smith & Medin, 1981; Tulving, 1972, 1984). Furthermore, the organizational plasticity of semantic memory makes it possible for acquisition and integration of novel information to be unlimited. Finally, the semantic level may generate novel information without the concurrence of external information (Smith & Medin, 1981). This is the most important implication of semantic memory for our concerns here because, accepting this point, we are assuming that representing worlds may, under certain circumstances, function autonomously from the world of external stimulation (cf Chapter 5).

Complementarily, episodic memory depends both upon real-world structures and on the contents of semantic memory. That is, it is always simultaneously dependent on data-driven and conceptually-driven processing.

4.1.3 The Links Between Semantic and Episodic Memory

If the "episodic versus semantic" distinction is to be accepted, then it is necessary to account for the way in which episodic and semantic units interact in the processes of categorization and inference: semantic information is necessary for the interpretation of episodic instances (a conceptually-driven process), as well as episodic information, which may extend semantic information (a data-driven process). Semantic propositions establishing superset and subset relations are probably the most important elements of that relationship, because episodic instances must be recognized as category members.

4.1.3.1 Semantic Relations: Taxonomies and Cases

The relationships between episodic and semantic memory, as well as the relationships between the elements inside each system are propositions (cf Costermans, 1980).

Propositions may perform either procedural or declarative functions. Procedural propositions function as programs of information-processing, or, as controls of instrumental activity. Declarative propositions, with which we are concerned from now on, are of two kinds: 1) propositions depicting the particular properties of objects, conceptual inclusion, and, similarity - taxonomic relations - which indicate attribution, superset, or subset links between categories or between categories and their instances; and 2) propositions representing events and episodes - case relations (Costermans, 1980). Taxonomic relations and case relations reflect best the structure and the relationships of episodic and semantic memory, and, namely, they illustrate the postulate of cognitive economy.

Superset relations are those by means of which an element of lower generality (an instance or a subset) is assigned to a higher level element (a

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[10] According to Rumelhart et al (1972), superset relations might be defined by

category or a superset).[10] Subset relations, on the other hand are necessary to account for links (or inferences) from categories to instances.[11] Thus semantic propositions are labelled and unidirectional (e.g. Quillian, 1969; Rumelhart et al, 1972). Nevertheless, taxonomic relations are not enough to account for the complexity of representations (namely episode representations) in memory. Moreover the notions of argument, and predicate are somewhat restrictive,[12] either because a predicate may be needed to express temporal order, causal order, co-occurrence, similarity, and so on, or because propositions may imply other propositions as its arguments and/or predicates (e.g. Frijda, 1975; Kintsch, 1972; Rumelhart et al, 1972).[13]

Case relations are needed as complements for taxonomic relations. Thus, the sentence "birds of a feather flock together", for instance, which refers to a semantic structure, implies propositional relationships different[14] from taxonomic relations in order to provide an accurate representation (cf Figure 3).

FLOCK, a critical action; <BIRD>, the actor; TOGETHER, the mode of the action; FEATHER, an attribute of the actor; SKY, the path of the action; the SIMILARITY relation between the actors on the basis of the attribute; are the determinant elements of meaning of the representation illustrated in Figure 3. By the same token, it is easy to admit that taxonomic relations (e.g. IS, HAS, AS) and case relations are necessary to provide meaning to episodic structures. For instance, in order to understand the meaning of <BIRD>, which,

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the label "is a" to describe membership in a category. The label "is" indicates an attribution of quality, and the labels "has", indicates an attribute property.

[11] As they are the inverse of superset relations, Rumelhart et al (1972) proposed that subset relations be labelled ISA-INVERSE (e.g. "Comic's Dog ISA-INVERSE Snoopy").

[12] Superset relations are of the general form "a S(Argument) is a P (Predicate)", or,"ISA(Argument,Predicate)", or PREDICATE(Argument) - cf Costermans, 1980; Kintsch, 1972; Meyer, 1970, for instance.

[13] For instance, the phrase "The stars are bright because of the clear night" establishes a causal relationship between two propositions, which may be represented as "BECAUSE [BRIGHT(stars) CLEAR(night)]" (Kintsch, 1972).

[14] Case structures overpass our concerns here. For detailed descriptions of different types of relational concepts, see Gregg (1974), Kintsch (1972, 1974), Lindsay & Norman (1977), Rumelhart (1975), Johanna Turner (1975). For analytical discussions of propositional structures see, for instance, Frijda (1975), Kintsch (1972), and, Rumelhart et al (1972).

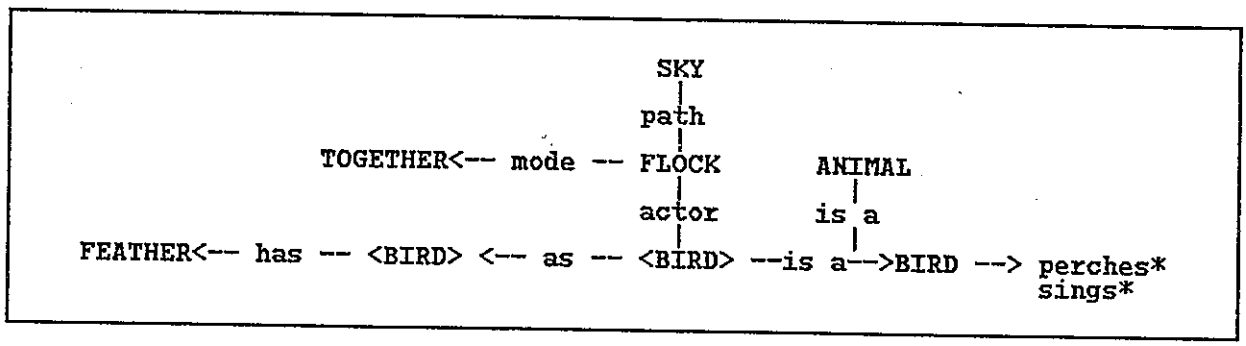

FIGURE 3 - Semantic Representation of an Action and of its Categorical Correlates. (Words between <> mean instances and words marked with * mean attributes that are characteristic but not necessary or that need not be constant for category inclusion).

although this is not the case in our example, might refer to a specific real world instance, one needs to hold a general representation of the category BIRD and to relate the specific instance to the category, by establishing a superset relation. A noteworthy aspect of such functionning is that the propositions thus formed gain a "truthfulness" status for their holders. That is, such propositions do not only relate concepts to each other. They also provide cognizers with subjective certainties (e.g. beliefs or expectations) about real-world events.

4.1.3.2 Implications of the Semantic-Episodic Relationship

The above statements have three less general implications. The first one is that an object, a person, an event or an episode, would be meaningless in the absence of an underlying semantic structure. That is, whereas episodic memory provides the memory system with specific information, semantic memory interprets that information by linking it to already stored data. This relationship justifies the postulate that the interpretation of real world structures is determined by already stored beliefs. Research on hypothesis-testing, either in cognitive psychology (e.g. Wason & Johnson-Laird, 1972) or in social psychology (e.g. R. Jones, 1977; Merton, 1972; Rosenthal & Jacobson, 1971; Snyder, 1981) seems to support this view.

The second implication is that semantic and episodic memory cannot be sharply differentiated. This corresponds to a widespread argument against

Tulving's assumptions (cf Baddeley, 1984; Hirst, 1984; Kihlstrom, 1984; Klatzky, 1984; McCloskey & Santee, 1981; Schank, 1975, 1980). But in light of our understanding of his assumptions, Tulving (1972) did not necessarily propose a division of memory into two separate systems. On the contrary, this author contributed to the systematizing of different kinds of processes and contents inside that structure, and consequently, he emphasized the strongness of relationships between episodic and semantic structures (cf Tulving, 1984).

The third implication concerns schematic assumptions. It seems that the above conceptualization provides an idea which is at least as clear as the one provided by schema theorists on social cognition about memory organization and information-processing. Namely, with respect to conceptually-driven versus data-driven processing, this formulation seems more informative than the mere assumption about the existence of several schematic levels in memory (e.g. Wyer & Carlston, 1979).

4.2 RELATIONAL AND OBJECT ELEMENTS OF REPRESENTING WORLD: APPROACHES TO SEMANTIC MEMORY

Having stated some general principles of long-term memory structures and processes, and, specifically, those related to semantic functioning, we now turn to a more concrete issue. How have representing world structures and processes been modeled by cognitive psychologists?

4.2.1 The Paradigm of Studies in Semantic Memory

The majority of studies in the field of semantic memory focus on the verification of taxonomic relations as a means to capture the organization of cognitive representations. Those studies generally assume that such representations obey the principles of semantic memory we described above. That is, they have intra-individual and inter-individual stability (e.g. Smith & Medin, 1981). Their basic structural unit is a proposition (e.g. Lindsay & Norman, 1977) and their structure is hierarchical (e.g. Costermans, 1980).

4.2.1.1 Classical, Probabilistic, and Exemplar Representations

Models of semantic memory may be classified according to their assumptions about the psychological status of cognitive categories. Smith and Medin (1981)

designed these assumptions as the classical view, the probabilistic view and the exemplar view. The classical and the probabilistic views presuppose that concepts are always general abstractions of the attributes pertaining to all the members of the classes they represent. The exemplar view accepts that categories may also be represented as collections of individualized instances. The classical and the probabilistic views on the other hand, present one difference. Whereas the former assumes that categories are clusters of necessary and sufficient criterial attributes for category membership, the latter assumes that category membership is a matter of degree. Smith and Medin (1981) criticized the classical view as lacking correspondence with actual psychological processes and argued that a complementarity exists between exemplar and probabilistic representations. These authors suggested that categories may initially be represented as collections of exemplars, but,

> "...as one matures, one is more likely to represent a concept in probabilistic than in exemplar form(...). As long as they do not discard the exemplars, mature learners would end up with both exemplars and a summary representation for the same concept. It is even possible that this developmental sequence occurs to some degree whenever adults learn a new concept - they first represent the concepts in terms of exemplars, but with additional experience they form a summary representation as well." (p.174).

Otherwise, the exemplar approach would not satisfy the basic postulate of cognitive economy.

4.2.1.2 The Structural Paradigm

Four types of models are generally distinguished among those which deal with specific aspects of semantic representations (cf Cohen, 1977; Palmer, 1978; Smith, 1978; Smith & Medin, 1981) One type is that of space models, which depict proximity structures among concepts and that are generally based on subjects' ratings of inter-item similarity (cf Figure 1). A second type is that of dictionary models, which conceptualize words as lists of semantic features, or markers (e.g. Glass & Holyoak, 1975; Katz & Fodor, 1963). But the most prominent models in the study of semantic memory are network models (e.g. Collins & Loftus, 1975; Collins & Quillian, 1969), and set models. (e.g. Smith, Shoben and Rips, 1974). These models have two common features. One is

that they attempt to map cognitive organization while directly investigating computing processes. The other is that they are traditionally based on classical, logical postulates about cognitive categories. The prototype approach (e.g. Rosch, 1978) modified the postulates of these models with a set of probabilistic assumptions.[15]

4.2.1.3 The Research Paradigm

Experimental tasks in the study of semantic memory models generally comprise the presentation of sentences depicting "true" or "false" taxonomic relations, and subjects are asked to judge their veridicality. Response-times and error-rates are subsequently compared to the researchers' previous assumptions about the processes that subjects should have employed while accomplishing the verification tasks as well as about the hypothesized memory structures within which those processes occurred. Results are used to extrapolate new structural and process assumptions when they are justified.

4.2.2 Network Models

4.2.2.1 Prestorage and Computing Assumptions: Inter-Category Links and the Superset Effect

Network models' theorists conceptualize semantic memory as a maze of interconnected concepts and attributes. Concepts and attributes are represented as nodes and propositions as links or activational paths among nodes (e.g. Quillian, 1969). Network models thus correspond to the schematic structures postulated by the majority of social cognitivists (cf preceding chapter). The structure and the potentialities of semantic networks are illustrated by Rumelhart et al (1972):

> "Starting off at a given node, there is the option of going down any of a number of labelled pathways. Taking one of these paths, there is then a series of crossroads, each leading off to a different concept. Each path from the crossroads leads to a new maze with a new set of choice points and new pathways to follow. In principle, it is possible to start at any point in the vocabulary of concepts and, by taking the right sequence of turns through successive mazes,

[15] Below we present a model which is clearly included in the classical view (the hierarchical network model), a model wich may be considered as a transition from that view to the probabilistic view (the feature-comparison model), and, a model included in the probabilistic view (the prototype approach).

> end up at any other point. This is what is meant by an organized memory system in which all the information is interconnected." (pp.227-228).

One important implication of this assumption is that network models in general emphasize prestorage over computing processes, because retrieval is the only computing operation needed to verify a learned category inclusion or to operate category subdivisions (Smith, 1978). As learning imposes a particular organization on the conceptual structure, superordinate concepts or supersets (e.g. animal) should be more accessible from immediate subsets (e.g. bird) than from lower-level ones (e.g. robin), and vice versa. That is, the semantic distance between two concepts is the direct function of the number of links that must be followed to relate one to the other. The term used to designate this phenomena is superset effect (Collins & Quillian, 1969). Concretely, for the simplest case where subjects have to verify a "true" sentence depicting a superset relation between a argument-noun and a predicate-noun (e.g. a robin is a bird), they must (1) retrieve the category-nodes referred to in the sentence and, (2) compare the represented links between those concept-nodes to the relation expressed in the sentence (idem). As a result, response-times should be longer for sentences describing the inclusion of an instance into a superordinate category (e.g. a robin is an animal) than for sentences where the predicate-noun is an immediate subordinate of the argument-noun (e.g. a robin is a bird). However, the superset effect was not always supported by empirical evidence (cf Collins & Quillian, 1970; Conrad, 1972; Meyer, 1970). One of the most prominent attempts to provide an alternative explanation of semantic processing was made by Smith, Shoben and Rips (1974) with their feature comparison model.

4.2.3 The Feature Comparison Model

4.2.3.1 Characteristic Versus Defining Attributes

One important source of inspiration of the feature comparison model and what relates it to the probabilistic view, was Lakoff's (1972) linguistic model of hedges. Rips, Shoben and Smith (1973) based their major assumption

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[16] Hedges refer to specific properties of word meanings and account for different kinds of conceptual properties. For instance, whereas it is true

on the linguistic part played by three hedges[16] proposed by Lakoff: true, loosely speaking, and technically speaking. That assumption was the distinction between defining attributes and characteristic attributes, which implied that category instances may vary in their degree of relatedness to or typicality in a category. The hedge "loose" allows the inclusion of non-instances into a category, because, they present a sufficient number of features characteristic of that category. Moreover, some instances of a category may be more typical of that category than others, because although they all present the same defining attributes, the former present more characteristic attributes than the latter. The former are "true" instances and the latter are "technical" instances. Relatedness depends on characteristic attributes and not on defining (technical) attributes, because the latter are invariant across the category members. The important implication is that memory structures came to be viewed more in terms of actual psychological representations and probabilistic criteria than in terms of criteria determined by the logical principles of classification (cf Smith & Medin, 1981).

4.2.3.2 A Two-Stage Model of Inference

To account for the characteristic versus defining postulate, Smith et al (1974) proposed a two-stage computing model. According to that model, when a subject is presented with a sentence of the type "An S is a P" that he must verify, he first runs a holistic process. In this process, the subject retrieves the attribute lists which correspond to the predicate- and to the argument- nouns and determines their global similarity. The resulting value is a direct function of the number of attributes shared by those categories. At the end of this stage, the individual compares the obtained global similarity

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and, technically speaking correct to say that a robin is a bird, one might say that bats are loose birds, and, this proposition should still be acceptable. That is, the hedge "loosely speaking" might appeal to certain attributes of bat that are neither sufficient nor necessary to define bats as birds, but that might be highly characteristic of this category. Conversely, the hedge "technically speaking" refers only to characteristics necessary for category inclusion. The hedge "a true" applies to typical members of the category. Thus, loose instances are those which present characteristic but not defining attributes. Technical instances are those which present defining but not characteristic attributes. True instances are those which present both characteristic and defining attributes.

value to two criterial thresholds: if the global similarity value is higher than the "upper" threshold, a "yes" answer is given; if, on the contrary, the global similarity value is below the "lower" threshold, the individual gives a "no" answer, and, in both cases processing ceases. But, if the global similarity value stands somewhere between the two thresholds, then a second analytical stage must be performed. In this stage, the subject first separates defining and characteristic attributes and discards the latter from the processing. Then he compares all the defining attributes of the argument-noun category with all the defining attributes of the predicate-noun category. He will give a "yes" answer if every defining attribute of the former is also a defining attribute of the latter. Otherwise, the answer will be negative.

Thus, a general prediction of this processing model is that response-times decrease as typicality (i.e. the number of characteristic attributes) of an instance relative to one category increases and as the size of the categories (i.e. the number of attributes to be compared) implied by the verification task decreases. This prediction was supported by a series of studies reported by Smith et al (1974) and by Rips et al (1973). But a number of criticisms were raised against the feature comparison model.

4.2.4 Criticisms to Set Models

Among the criticizers, Cohen (1977), for instance, argued that:

> "...any network model has the advantage that the links can represent a variety of relationships, so that network models can be extended. It is not easy to see how a set-theoretic model could represent any relationships besides class membership and properties. (...) many concepts cannot be defined adequately by a set of features, but depend on the relationships between the features. For example, a botanical species may be defined by being smaller than another species, flowering later, and being found further south. The need to incorporate relations between features constitues a serious limitation to set theoretic models." (p.22).

But this is not completely true. Rips et al (1973) showed that instances of a category may be compared across interval scales and represented in set-compatible multidimensional spaces, and that space dimensions can depict relationships of the kind of those suggested by Cohen (1977).

Another criticism is related to the usefulness of the characteristic versus defining assumption. For instance, McCloskey and Glucksberg (1978) showed that, when subjects were constrained to use processes like those assumed by the analytical stage of the feature comparison model without prior processing of global similarity values, they still verified typical instances faster than atypical ones. Although in many situations people may apply to formal reasoning strategies similar to the one proposed in the second stage of the processing model of Smith et al (1974), it seems likely that, most of the time, their judgments are based exclusively on holistic criteria, despite the fact that, according to the model they ought to apply also the analytical stage. This phenomenon was spotlighted in social psychological research namely by the judgmental heuristics approach (Nisbett & Ross, 1980; cf Chapter 2). But an important contribution of the feature comparison model as compared to classical network formulations is that, although correct category inclusion was still assumed to be discrete, inference was already viewed as a probabilistic process. This assumption was extended by Rosch's (e.g. 1977, 1978) prototype approach to the internal structure of categories.

4.2.5 The Prototype Organization of Categories

Rosch (e.g. 1977, 1978) is one of the authors who argued against the theoretical utility of building research about the representation of natural categories upon the paradigm of research on artificial concept identification. Rosch (e.g. 1974) drew on results of research on the categorization of colors, a domain

> "...which has most readily lent itself to the demonstration of a type of categorical structure contradictory to the Aristotelian (...). There is now considerable evidence that (...) color categories appear to be represented in cognition not as a set of criterial features with clear-cut boundaries but rather in terms of a prototype (the clearest cases, the best examples) of the category surrounded by other colors, of decreasing similarity to the prototype and of decreasing degree of membership." (Rosch, 1975a, p.193).

As the models we described above did, the prototype approach assumed that cognitive economy requires that semantic categories must be as clear-cut as possible, but it conceptualized categories in terms of their clearest cases, rather than in terms of their boundaries.

4.2.5.1 Prototype Dependence from Real-World Structures

With this assumption, Rosch (e.g. 1978) introduced an innovation in the study of semantic representations of natural categories. She proposed that such representations should be analyzed in terms of a vertical, as well as a horizontal dimension. The vertical dimension corresponds to semantic taxonomies. The horizontal dimension deals with the segmentation of categories existing at the same abstraction-level.

Both dimensions are stongly dependent upon real world structures. These, Rosch (e.g. 1977) argued, are not randomly organized, and this fact reflects upon semantic representations:

> "...a view of categories as initially arbitrary would be reasonable if the world were entirely unstructured: that is (...) if the world formed a set of stimuli in which all possible stimulus attributes occurred with equal probability combined with all other possible attributes (...). While such stimulus arrays have been typically used in concept identification research (...) they may not adequately represent the structure of stimuli in the real world." (pp. 212-213).

Thus, a basic postulate of the prototype approach is that semantic categories are constructed and represented as reflections of real-world co-occurrences. These reflections depend both upon perceptual and cultural factors. For instance,

> "...our segmentation of a bird's body such that there is an attribute called "wings" may be influenced not only by perceptual factors such as the gestalt laws of form that would lead us to consider the wings as a separate part (...) but also by the fact that at present we already have a cultural and linguistic category called "birds"." (Rosch, 1978, p.29).

To support this assumption, Rosch (1974) reported an extensive series of studies whose general finding is that perceptually salient stimuli (in the domain of color-perception) were more correctly memorized and/or discriminated than less salient ones. However, memorability and codability also depended on the linguistic categories held by subjects.

4.2.5.2 The Notion of Cue-Validity

But, along with providing structure to intra-categorical representations, the real world also provides the perceiver with an organized categorical taxonomy (Rosch, 1977). The general principle proposed to explain the relationship between the real world and the representing world, with respect both to the vertical and the horizontal dimension is cue validity (Rosch, Mervis, Gray, Johnson & Boyes-Brahem, 1976). Cue validity is correlated to perceptual salience in the case of perceptually based categories and to cognitive accessibility in the case of more abstract categories (Rosch, 1977). For cognitive categories represented in memory in terms of attribute sets rather than in terms of holistic properties (cf Garner, 1978; cf below), cue validity means that

> "...the validity of a given cue x as a predictor of a given category Y (the conditional probability of Y/x) increases as the frequency with which cue x is associated with category Y increases, and decreases as the frequency with which cue x is associated with categories other than Y increases." (Rosch, 1978, p. 30).

4.2.5.3 Basic-Level Categories

According to the taxonomic principles we discussed earlier in this chapter, cue validity is a function of the abstraction level of categories. Further, some category levels satisfy the postulate of cognitive economy better than others, because they allow the cognizer to retrieve the most information about the represented class of objects with the least cognitive effort (Rosch, 1978). These are basic level categories, i.e. categories representing objects which

> "...(a) possess significant numbers of attributes in common, (b) have motor programs which are similar to one another, (c) have similar shapes, and (d) can be identified from averaged shapes of members of the class (...). Basic objects are shown to be the most inclusive categories for which a concrete image of the category as a whole can be formed, to be the first categorizations made during perception of the environment, to be the earliest categories sorted and the earliest named by children, and to be the categories most codable, most coded, and most necessary in language." (p. 382).

Rosch (1974, 1975a, 1975b, 1977, 1978) presented extensive reviews of empirical research supporting the prototype view of the internal and the taxonomical organization of semantic categories. A review of that research would carry us very far from our present concerns. The important point for this work is that prototypes seem to be a sufficient criterion for categorization and inference as well as for the conceptualization of the structure of semantic memory. Another point with important implications for subsequent discussions (cf Chapters 5 and 6) is that prototypes strongly presuppose that mnemonic representations are little else than simplifications of environmental cues. Indeed, once a prototype exists, the class of objects to which it refers and the classes existing at the same level of inclusiveness should be perceived as

> "...simpler, more clear-cut, and more different from each other than they are in reality." (Rosch, 1977, p. 3).

Further categorization should be a holistic and probabilistic process. Category inclusion should be performed in terms of "family resemblances" (Rosch & Mervis, 1975), that is, by computing the global similarity between the pattern of attributes extracted from a stimulus configuration and by comparing it to the pattern of prototypical attributes that represents the category. Moreover, prototypes allow that most information about a given real world domain be stored as a single basic-level representation.

4.3 ATTRIBUTES OF SEMANTIC CATEGORIES: BINARY FEATURES AND ATTRIBUTE DIMENSIONS

Until now we presented a view of propositions and a view of categories. Before closing this chapter, let us present a view of attributes.

Considering that the nature of attributes as category components lacks theoretical definition in the literature on cognitive psychology, Garner (1978) and Palmer (1978) proposed two similar taxonomies of semantic

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[17] Following the general orientation of this chapter toward central processes and structures, we limit the present discussion to attributes that are directly related to semantic memory. Templates, configurations, or simple wholes, for instance (e.g. Garner, 1978; Neisser, 1967; Palmer, 1978; Smith & Medin, 1981), which are directly related to the processing of perceptual information are disregarded.

attributes.[17]

One proposed distinction was between component and holistic (Garner, 1978) properties of categories. Holistic properties refer to structures related to sensory-level and perceptual-level information-processing. A component attribute, on the other hand, is

> "...a property that helps to define a particular stimulus but that is not synonymous with the stimulus. It is often thought of as an abstract property of the stimulus in the sense that the attribute exists without any particular manifestation of it. Thus, such things as color, size, brightness, and linearity are component properties of a stimulus, thus attributes." (Garner, 1978, p. 102)

Garner (1978) and Palmer (1978) distinguished two kinds of component properties: binary features and dimensional attributes, and Garner (1978) provided a clear-cut distinction between features and dimensions:

> "A dimension is an attribute of a stimulus such that if the dimension exists for the stimulus, it exists at some possible level (or value) and these alternative possible levels are mutually exclusive (...). A feature is an attribute of a stimulus that either exists or does not exist, but if it exists, it has only a single level; thus, the idea of positive levels as mutually exclusive is inappropriate. A feature might be called a dissociable element in that it can be taken away from the stimulus without otherwise affecting the rest of the stimulus." (pp. 102-103).

4.3.1 Some Implications of Features Versus Dimensions

Smith and Medin (1978) provided an excellent illustration of the implications of the acceptance of each one of the views on attributes:

> "If we decide to represent object concepts in terms of components, we have a choice of how to characterize these components - either by quantitative components, called dimensions, or by qualitative components, called features. To illustrate this distinction, let us consider one's possible concepts of weapons. You could represent all weapons in terms of a few dimensions, like degree of potential damage, with say, penknike near one end and atomic bomb near the other. Alternatively, you could represent each weapon by a set of features: for knife, such features might include (1) sharp, (2) has a handle, and (3) metallic. The key difference is that dimensions naturally capture quantitative variations, while features indicate qualitative ones. Thus if two concepts differ with respect to a particular dimension, one concept must have more of that dimension (a higher value) than the other; for example, one weapon is more damaging than the other. But if two concepts differ with respect to a feature, then one concept has "it" while the other does not." (pp. 11-12).

The differences between feature and dimensional representations pointed out by Smith and Medin (1978) have two relevant implications. One of those implications bears on assumptions about the nature of concepts: in dimensional representations, concepts are average values determined by a set of dimensions, whereas in feature representations, concepts are assumed as feature lists or digital matrixes (Palmer, 1978). As a result, in the first case, concepts may be be compared to each other in a multidimensional quantitative space where the dimensions are attributes and the points represent the concepts sharing those attributes. Feature sets, on the other hand, may be compared according to their modal features and in terms of inclusion, intersection or exclusion (Smith & Medin, 1981). In dimensional representations, two concepts are similar to each other to the extent that they present similar values in common dimensions. In feature representations, inter-concept similarity is a direct function of their common features and an inverse function of their distinctive features (Tversky, 1977). Thus, whereas in a dimensional representation two categories may present the same attributes and still differ according to their attribute-values, in a feature representation two categories presenting the same attributes are identical by definition (Smith & Medin, 1981).

The second implication is related to the preceding one and deals with prototype representations. The choice of dimensional rather than feature representations is equally compatible with the prototype view of concepts, with one difference: in the case of feature representations, prototypes refer to the modal values of a class; in the case of dimensional representations, prototypes refer to the average values of that class (Smith & Medin, 1981). In both cases, however, the prototype is considered as the central tendency of the category.

4.3.1.1 Advantages and Disadvantages of Feature and Dimensional Representations

Feature and dimensional representations present advantages and problems. In a feature approach, the comparison between concepts seems more complex than in a dimensional approach, simply because multidimensional techniques (such as Carroll and Chang's [1970] INDSCAL, or Kruskal's [1964] MDSCAL) are widely available for empirical research.

Another advantage of dimensional representations of categories is that they solve one of the problems raised by proponents of network models about the impossibility of representing relations among concepts other than inclusion (cf Cohen's [1977] quotation here above) when network formulations are not used. In fact dimensional representations may present advantages as compared to network representations (which, are another case of feature representations). To use an example provided by Smith and Medin (1981), imagine one has to determine the similarity between two instances (e.g. two fish) whose colors are respectively "dark blue" and "light blue". Unless, one establishes that dark-blue and light-blue correspond to the three features "blue", "dark" and "light", one could not test the difference between the two instances by applying to a feature representation. However, "blue" may be represented in memory as an ordinal scale, more than a digital matrix. For this reason, dimensional representations seem to be, at least in cases like this one, more accurate to account for intercategorical comparisons.

But dimensional representations present at least one important theoretical problem. Natural categories are generally formed by a large number of attributes. This fact makes it difficult to represent accurately a concept in a multidimensional space formed by a large number of dimensions. Further, criticisms have been raised as to the adequacy of using metric techniques to describe cognitive structures. (e.g. Tversky, 1977; but cf Smith & Medin, 1981). Finally, dimensional representations may be prone to other biases. For instance, if a concept presents a value of zero in an attribute dimension, it is difficult to know whether that attribute is irrelevant with respect to the category or whether its value actually corresponds to the positive value of zero. This problem is irrelevant for feature representations.

The advantages and disadvantages of using one type of representation rather than the other seem to be somewhat balanced and the choice of one type of representation rather than the other should be made according to the specific problems under analysis: when one is interested in the analysis of differences between a small number of attributes among a large number of categories, the dimensional approach seems more parsimonious than the feature approach; conversely, when one is interested in the description of a small

number of concepts and in the analysis of the general differences among those concepts, then, the feature approach seems more adequate. As Smith and Medin (1981) pointed out:

> "The obvious way to put all the results together is to assume that while numerous properties of a concept are represented featurally, some are represented dimensionally. Although this conclusion may appear innocuous, it has implications for what kind of processes can be used to compare concept representations. Roughly, the process that compares features should be compatible, if not virtually, identical with that which compares dimensions (...)." (p. 129).

4.4 CONCLUDING REMARKS

In this chapter, we attempted to present a framework of memory, as an alternative to the one generally accepted by social cognitivists. It is probably true that,

> "...the schema notion is not a theory as such (...). The term schema connotes an aura of specificity that it does not live up to, since the term per se explains nothing (...). However, the concept comes embedded in a general cognitive framework for perception, memory and evaluation. Thus the schema concept approaches the level of metaconstruct, and the meaning of the concept is fixed by its interrelations with other mental constructs within a given theoretical system." (Fiske & Linville, 1980, p.544).

It is also clear that the assumptions we presented in this chapter cannot be considered as more valuable than those presented by the schema theorists in social cognition. However, in our opinion, the way we approached cognitive structures and processes is more parsimonious than the postulation of different small-range schematic theories. Although the general distinction between episodic and semantic memory, along with the structural and process postulates described in this chapter are, perhaps, less specific than those schematic theories, they seem to form a single, coherent system.

Before concluding this chapter, however, it seems necessary to stress one important point. We believe it necessary to build upon a cognitive framework, in order to improve the understanding of social psychological processes. But, as Moscovici (1972) argued:

> "...if a choice had to be made, would our conceptual generalizations tend in a "psychological" or in a "social" direction? The acceptance of a psychological perspective essentially means that social psychology would become a specialized branch of general psychology,

> whose function would be to deepen our knowledge of very general processes, such as perception, judgment or memory, which remain unchanged throughout their models and conditions of operation and production. The data on social psychology would thus enable us to do no more than to specify in more detail certain variables in human or animal behavior which, in the last analysis are reducible to laws of "animal" or "individual" psychology, of psychophysics or psychophysiology." (p.35).

The point is that the study of cognitive processes, as obeying the general laws of psychological functioning, is necessary but not sufficient to understand the generation, acquisition, encoding, and use of social knowledge.

V

FEATURES OF SOCIAL INFORMATION

The preceding chapter allowed us to describe a number of principles, related to computing and prestorage aspects of semantic memory. As we argued in Chapter 2, many authors in the field of social cognition attempted to establish an analogy between information-processing and social information-processing.

The present chapter is an attempt to define what, in our opinion, should be considered as "social information". Building on the work of authors like Tajfel (e.g. 1981), we argue that intraindividual cognitive processes are just one of the components of social processing of information. Our standpoint in the present chapter could be subsumed as follows:

> "...our ideas (...) are, to a large extent, determined by the social context in which they are developed; so are our religious beliefs or our political or social ideologies. Whether we are in favour of, or against, what is generally accepted, (...)beliefs remain within a framework of socially shared meanings and assumptions, as well as within the (...) socially established means, modes and principles of social communication." (Tajfel, 1978d, p. 302).

The scope of this chapter is the social construction and extension of certain semantic propositions, their dependence on the properties of the social world and their relative independence from what we have been calling the real world. Billig (1976) provided a useful cue for this assumption of independence:

> "... most ordinary language concepts are not labels for sets of things which have something in common. [If this were the case] the existence of common concepts within a linguistic community must be seen as the result of a happy accident; the individual members of the community must have all abstracted the same stimulus elements from their array of stimulus information. Given the vastly different experiences of people who can understand and communicate complex concepts one with another, this can be nothing short of a miracle." (p.327).

How and why does such consensus emerge? In our opinion, this is one of the main questions for social psychology.

5.1 NATURAL VERSUS NON-NATURAL MEANING

5.1.1 Factive and Non-Factive Utterances

Psycholinguists and, namely, Grice (1982) provide us with a nice contribution with which to begin with our tentative definition of social processing of information. Grice (1982) was interested in two kinds of communication, which he called factive and non-factive. Utterances like "birds have feathers" or "black clouds mean rain", he argued, are examples of factive communication. They refer to actual, although simplified, real world relationships whose cognitive representation does not involve any process different from those postulated by the prototype approach, for instance. But other utterances, like "birds are beautiful", or "black clouds mean gods are angry", probably involve processes which are largely independent from real world properties and which bear much more on interpretations based on criteria which have little to do with real world correlations. Whereas the representations underlying the former type of utterances are natural in meaning, those underlying the latter are non-natural because they involve the construction, rather than the reproduction of objects (e.g. gods) and their properties (e.g. beauty or anger) (Grice, 1982).[18]

5.1.2 Psychophysical Versus Psychosocial Correspondence

Grice (1982) proposed that natural meaning depends on psychophysical correspondence, i.e. on environmental (stimulus) and personal (perceptual) constraints. Analogically, we propose that certain forms of non-natural meaning depend on psychosocial correspondence.

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[18] We are not going to discuss what is obvious. Non-natural meaning may often be determined by intraindividual (e.g. pathological) processes alone. Further, it seems difficult to find pure examples of each type of meaning, and especially of natural meaning. Maybe, this is because "abstraction" is an intellectual process which is "natural" to Man, and all names assigned to concepts are conventional, be the objects signified natural or not (Cronin, personal communication). However, more or less clear cases falling nearer one type of meaning rather than the other would not be hard to find.

Psychosocial correspondence, as we see it, is to be defined as the relationship between cognitive processes and structures, on the one hand, and the whole set of social influence processes to which individuals are submitted in the course of their everyday life, on the other hand. To put it another way, psychosocial correspondence refers the social "software" that is available to the individual in order to make inferences and categorizations. Therefore, it is related to a functional interaction between cognitive and social influence processes. We call this functional interaction, social computing.

Social computing processes may occur under two forms. One, is the assimilation of socially constructed propositions. That is, the individual may encode information independently of his/her episodic experiences, and assign the propositions thus formed, the same status of "truths" as that he/she assigns to propositions constructed by direct experience (Higgins et al, 1981; Tajfel, 1972). In other words, the encoding of those social propositions involves episodic functions only to the extent that the individual remembers the social setting in which they were transmitted. More interesting, it might even be that such situations are unavailable to recall.

Social propositions correspond to social norms which function as criteria for subsequent computing and social computing operations. This process of transmission-assimilation corresponds to a simple form of social computing which, actually, characterizes the early process of socialization.

The second, more complex form of social computing might be something like "joint information-processing". Sherif's (1936, cited in Sherif, 1966) experiments on norm formation seem to be a typical illustration of this form of social computing. Below we discuss what we consider as assimilation and joint information-processing forms of social computing. For the moment, it seems worth impressing on the fact that the two forms of social computing cannot be conceived in separation. First, because, often, the assimilation of transmitted propositions is not an entirely passive process: the person who assimilates a social proposition conveyed by a source of social influence has also some influence on this source, or, at least, may re-interpret the message in order to fit prestored knowledge. Further, even the simplest form of

assimilation requires some cognitive activity from the receiver. If the source of influence is another person, then, interactants engage in joint information-processing, although they may contribute to the final outcome with different degrees of influence. Second, if joint information-processing is to be efficacious, the interactants must share some prestored knowledge prior to the interaction.

The general implication of the notion of social computing is that individuals have prestored materials which correspond to their social knowledge. This social knowledge may influence information-processing both at the cognitive and at the perceptual level, so that categorization and inference may yield socially determined non-natural meaning. That is to say, cognitive representations may, under certain circumstances, depend more on the social world than on the real-world, and, more particularly, the criteria used in computing may depend less on the intrinsic properties of stimulation itself than on socially generated principles.

The above assumptions are, undoubtedly, speculative. Further, as far as we know, there is no direct evidence available for the processes we postulated. However, indirect evidence is so striking that we believe that those postulates can be illustrated in a compelling manner.

5.1.3 Psychological Determinants of Psychosocial Correspondence: The Construction of Non-Natural Meaning

We could say that the point of view adopted in the preceding chapter was one of natural meaning. Indeed, we concluded that the prototype approach was among the most parsimonious accounts for semantic memory. But Rosch (1977) herself strongly claimed that:

> "Humans cannot perceive correlations where there are none; they can only be ignorant of structures which exist." (p.222).

This claim was an attempt to justify the universality of the criterion of cue-validity in categorization. However, it is unsupported by some classical empirical evidence. This evidence has shown that humans can indeed perceive correlations where there are none. Further, it was showed that humans can make categorizations independently of similarity computings between categories, instances, or, instances and categories.

5.1.4 Cognitive Shortcuts of Cue-Validity: Illusory Correlations and Category-Validity

5.1.4.1 Illusory Correlations

The phenomenon of illusory correlation has been given significant attention since Chapman and Chapman's (1967, 1969) classical works. These works were aimed at showing certain biases occurring in the interpretation of some projective tests, like the Rorschach, but their results are quite important for our topic of discussion.

Chapman and Chapman (1967) had a group of subjects observe and judge a series of about 40 protocols of Machover's "draw-a-person" test, and asked them to report the association between a drawing's characteristics and personality symptoms. Subjects were untrained at interpreting this test. The authors had previously ascertained the existence of strong beliefs about the co-occurrences of certain drawing features with certain characteristics of personality. Given this, Chapman and Chapman constructed the protocols in such a way that a nil correlation existed between symptoms appearing at the bottom of the page and the drawings supposedly made by patients.

If subjects relied on real-world evidence, they would report no relationships between drawings and symptoms, since there was no correlation between them. However, subjects reported strong positive relationships between the features and the symptoms which, according to their prior beliefs, "went together".

In other experiments, Chapman and Chapman (1967, 1969) found that these errors persisted even under repeated exposure, and under conditions where the motivation and opportunity to make accurate judgments were maximized. More interestingly, when Chapman and Chapman (1967) provided another group of subjects with protocols depicting negative correlations between "going together" symptoms and features, these subjects remained convinced that positive correlations existed between those variables.

Consistently with the above results, Shweder (1975) found that vacation camp monitors, who had systematically reported behavioral data about a number of boys during a 24-day period, judged those boys (immediately after that period) in terms of their pre-existing beliefs about personality-trait co-occurrences, rather than on the basis of the data they had, themselves,

reported. More interestingly, when observers reported behavioral co-occurrences which were contradictory to their pre-existing beliefs, they relied on these beliefs rather than on their actual observations in order to characterize the boys (cf also Shweder, 1977).

The studies by Chapman and Chapman (1967) and by Shweder (1975) raised some doubts on Rosch's claims about cognizers' dependence on real-world information. In Chapter 6 we shall discuss similar findings on the field of group perception (Hamilton & Gifford, 1976).

5.1.4.2 Naive Theories and Category-Validity

The fact that cognizers may ignore real-world correlations and impose structure to stimulation in light of their pre-existing beliefs, may allow them to construct categories whose contents are autonomous from similarities between stimulus configurations. According to Murphy and Medin (1985), many categorization processes and similarity judgments depend more on knowledge about the target-objects' category membership than on knowledge about its features. In their own terms, they depend more on category-validity, than on cue-validity. Category-validity, these authors argued, is a function of the cognizer's naive theories about real-world objects and events, rather than on criteria like family resemblance. This may be illustrated in the following manner:

> "The reader may wish to introspect on what the category is that includes the objects, children, jewelry, portable TVs, paintings, manuscripts, and photograph albums. Furthermore, which of the items is the most typical? Because the objects have low family resemblance, the task is nearly impossible. However, once the theme taking things out of one's home during a fire is known, these judgments become easy (...). Such examples suggest that theories can elucidate the relations among very different objects and thereby form them into a coherent category, even if they do not form a "natural" class. (p.303).[19]

This idea is a restatement of one major postulate presented some years ago by Tajfel (1969a, 1972), according to which categorization may alternatively involve an inductive or a deductive process. Deductive inferences, in

[19] Even if this particular example raises some theoretical problems (for instance, the "category" to which the authors refer, might easily be conceived as a script, a frame or a schema), the important point is that, by and large, it depends on non-natural meaning.

Tajfel's model, strictly correspond to Murphy and Medin's (1985) notion of category-validity. As Tajfel (1981) pointed out:

> "Categorizing any aspect of the environment, physical or social, is based on the adoption of certain criteria for the division of a number of items into more or less inclusive separate groupings which differ in terms of these (and associated) criteria and resemble each other on the same (or associated) criteria within each of the groupings. The "differing" and the "resembling" need not necessarily be based on any easily ascertainable concrete similarity or dissimilarity". (p.147).

Empirical support may be found for this assumption. For instance, Tajfel and Wilkes (1963) presented their subjects with 8 lines, one at a time, and asked them to estimate their lengths. Line lengths decreased proportionally, so that the difference between each line and the next shorter or longer one was always the same. One group was provided with what we might call "coherent class information", i.e. the 4 shorter lines were labelled "A" and the four longest lines were labelled "B". Another group was presented with what we might call "random class information", i.e. there was a random relation between line-length and the labels. Finally, a third group was presented with unlabelled lines. Results showed that subjects in the coherent class condition exaggerated the differences between lines labelled differently: the perceived difference between the shortest line of class B and the longest line of class A was judged as larger than the differences between lines labelled with the same letter. However, when labels were random, or did not exist, no similar biases occurred.

It is worth noting that it is far from granted that subjects perceived letters as category-labels, rather than as parts of the stimulus-configurations "lines plus letter-attributes". If this were the case, then one might reason that letters were attributes with high cue-validity. However, apparently letters had no cue-validity for "random class information". Therefore, it is likely that letters really functioned as category-labels and, consequently, that subjects' judgments were based on category-validity.

Furthermore, evidence for category-validity is not limited to that experiment. Doise, Deschamps and Meyer (1978) obtained similar results in

gender perception. These authors showed a group of boys and a group of girls with three photographs of boys and three photographs of girls, and asked them to characterize the photographs by choosing a number of attributes from a set of 24. In one condition, boys and girls were presented first with the photographs of children of one sex, and, then with the photographs of children of the other sex, so that, when they characterized the first three photographs, they did not anticipate the fact that they would have to characterize the other three. In the other condition, subjects were aware of the fact that they would have to assign attributes to members of both categories. Results showed that in the latter condition, subjects differentiated more between the two categories and assimilated the members of the same category more to each other than in the former.

Studies in gender perception are rich in examples of judgments based on category-validity. Another example is Rubin, Provenzano and Luria's (1974) study, which showed that, from 24 hours after birth, babies' physical properties and behaviors were differently interpreted according to the gender-category to which they were assigned. Rubin et al (1974) found that, despite the absence of objective physical and behavioral differences, boys were judged as possessing more masculine attributes than girls, and, conversely, that girls were assigned with more feminine attributes than boys (cf also Ashmore, 1981; Huici, 1984; Ruble & Ruble, 1982; Sousa, 1983). These results, together with those of Doise et al (1978) and of Tajfel and Wilkes (1963), illustrate and support the category-validity assumption.

5.1.5 Value-Validity

The category-validity assumption is coherent with the classical distinction proposed by Bruner et al (1956), between identity and equivalence classes.

Categories formed on the basis of identity, Bruner et al (1956) suggested, depend on the similarity between their components. That is, their instances present significant cue-validity for the category-label. Categories formed on the basis of equivalence, on the other hand, are composed of elements which are not necessarily similar, but which may perform similar functions or be similarly evaluated (Bruner et al, 1956). The fact that categorization may be

determined by equivalence rather than identity leads us to accept the functional perspective according to which a good deal of the usefulness of the categorization process

> "...resides in its role as a tool in systematizing the environment for the purposes of action." (Tajfel, 1978d, p. 305).

Indeed, there is evidence for the fact that children begin to categorize novel objects according to their functional, rather than featural, similarity (e.g. Nelson, 1977). If such a functional criterion is applied to the systematizing of the social environment, then one would be able to understand the justification functions that authors like Allport (1954) assigned to social categorization (cf Chapter 3). This is obviously related to Bruner et al's (1956) assumption that equivalence may be a function of value. Two liked or disliked instances may be categorized together, regardless of their features or their functions. In that case, category-validity should take the form of value-validity, and, consequently, the instances of a category may be pseudo-descriptive: they may serve to justify previously existing preferences or connotations. This point of view also coincides with that presented by Zajonc (1980; Zajonc et al, 1982; cf Chapter 2).

5.1.6 Egocentrism and Value-Validity

Personal values seem to be an important motivational factor involved in cognitive processing. According to Piaget (1966), in the first stages of cognitive development, the child is able to judge events only through an egocentric bias. Therefore, hedonic relevance gains strong importance, and leads judgments to be in the form of "good-bad", or, "like-dislike", for instance. This strategy of categorization prevails in less primitive stages of cognitive development, and manifests itself in adult judgments under more sophisticated forms (Tajfel, 1969a; Tajfel & Forgas, 1981). Value dimensions become as incontrovertible as other, descriptive, dimensions (Tajfel, 1969a, 1981). That is, value propositions gain a "truthfulness" status identical to that of any other semantic proposition (cf Costermans, 1980). The role of egocentrism on the generation of preferenda (cf Zajonc, 1980; Chapter 2) seems self-justified in these developmental terms.

Given the preceding assumptions, it seems particularly relevant to emphasize the fact that the explanation of value-validity based on the developmental phenomenon of egocentrism is much more straightforward and heuristic than the explanation of cue-validity as the result of a "drive" (cf Rosch, 1978) toward cognitive economy. Evidence for value-validity may be found in the literature.

5.1.6.1 Value-Validity and Size-Estimates

Bruner and Goodman (1947) asked children to estimate the relative differences in size of two coins and two neutral disks identical to the coins, except for their worth. One group of children issued from working-class families, whereas the other group was composed of children from wealthier families. Results showed that children in the two groups did not differ in their relative size-estimates for neutral disks. However, working-class children estimated the size differences between coins and disks as significantly larger than did middle-class children.

In a replication of the Bruner and Goodman's (1947) study, Tajfel and Cawasjee (1959) presented adult British subjects with two British coins of different worth and size, so that a positive correlation existed between the two variables. Other subjects were presented with two worthless coins identical in size to the first two. Subjects were asked to estimate the diameter of the coins in each pair. The actual difference in diameter between the coins was the equivalent of 11.1% of the diameter of the smaller one. Although both groups exaggerated that difference, exaggeration was larger for the value relevant (24.2%) than for the worthless (17.4%) coins.

These experiments showed that perceptual biases are strongly related to the value assigned to the object of perception. Probably, the perceived differences in size between value relevant and worthless stimuli were due to the generation of a value criterion which imposed itself on psychophysical correspondence. If value-validity occurs as a judgmental criterion for perceptual activities, it should be even more powerful in judgments involving more elaborate cognitive processing. The case of judgments based on the assimilation of ethnocentric values seems an excellent illustration of this fact.

5.1.7 Value-Validity and Ethnocentrism as a Function of the Assimilation of Social Propositions

According to some authors, the egocentric component of cognitive processes is mirrored at the social level by ethnocentrism (cf Le Vine & Campbell, 1972; Stephan & Rosenfield, 1982; Tajfel, 1969a). Actually, Sumner (1906) put it quite clearly in suggesting that ethnocentrism refers to "that view of things in which one's own group is the center of everything" (cf Chapter 3). The cognitive, emotional and social concomitants of value-validity are thus components of ethnocentrism. This psychological and sociocultural standpoint was subscribed to by Tajfel and colleagues on the subject of children's national preferences.

5.1.8 The Assimilation of Ethnocentric Values

Tajfel and Jahoda (1966) had British and Belgian children, aged from 6 to 7, and 12 years-old, answer a series of questions about four foreign countries (America, France, Germany, and Russia). Among those questions, subjects were asked to rate the countries according to their preferences, as well as to estimate their relative sizes. Results showed that preferences were largely consensual across nationality and age. Children reported strong preferences for America and France, as compared to Germany and Russia. Older children showed higher consensus than younger children relative to country-sizes, but agreement was always low on that matter. Given the lack of factual knowledge, the authors concluded that preferences were probably due to the assimilation of social values.

Tajfel, Nemeth, Jahoda, Campbell and Johnson (1970) obtained similar results. These authors presented children aged from 6 to 12 years-old, in Austria, Belgium, England, Holland, Italy and Scotland, with 20 standardized photographs of young men. In a first experimental session, individual subjects were asked to classify the photographs according to their preferences. In a second session, the subjects were told that some photographs were of people of their own nationality, and that others were foreigners. Then they were asked to guess whether or not each photograph was of someone of their nationality. Results showed that children classified the photographs they liked the most (as measured in the first session) as of their "own nation".

In another experiment, Johnson, Middleton and Tajfel (1970) presented English children, aged about 11, 9, and 7 years old, of both sexes, and coming either from middle-class or from working-class families, with a series of 10 identical dolls. Each doll had the name of a country writen on it (America, Australia, China, England, France, Germany, India, Italy, Japan, and Russia). Children were asked to rate the dolls according to their preferences. In a subsequent experimental session, each child was given the two dolls he/she liked the most, the two dolls he/she disliked the most, the doll closest to the neutral point of the value scale, and the doll representing England. The child was then asked to answer a series of questions relative to knowledge about those countries, and, to make paired-comparisons in terms of preferences. Consistently with the results of the studies previously described, Johnson et al (1970) found that, although factual knowledge was very weak, consensus on preferences was high. England, Australia, France and America were the most liked countries. Russia, Germany, Japan, and India were the most disliked. Sex, age, and social class had little influence on these results.

The findings of these and other studies (cf. Tajfel, 1981) seem to show that people may reason individually in terms of consensual values. Given the lack of "objective" constraints (factual knowledge) susceptible to lead those judgments to coincide on the basis of perceptual and cognitive processes alone, a reasonable explanation for that coincidence is that the judgments depended on the assimilation of social values.

5.1.9 Ethnocentrism and Perception

It should be erroneous to suppose that the "primitive" cognitive processes illustrated in the above studies emerge only in the early stages of cognitive development, or that they are just a by-product of cognitive underpinnings.

5.1.9.1 Descriptive and Connotative Attributes

On the contrary, one might suppose that evaluative judgments are allowed by the fact that individuals possess two different types of attributes as prestorage units (Zajonc, 1980): descriptive and connotative attributes.

Peabody (1968) reported evidence for the relative independence between descriptive judgments and judgments based on value-validity. In a study carried on in the Philippines, this author presented two groups of Filipino and Chinese subjects with an ingeniously constructed set of bi-polar scales in terms of which they were asked to describe the members of the Filipino and Chinese communities. The scales were constructed so that each characteristic was matched against its descriptive (e.g. "thrifty vs. extravagant") and connotative (e.g. "stingy vs. generous") antonyms. Peabody predicted and found that, given the antagonism between the two communities, and given certain undeniable characteristics of each group, subjects would agree in terms of their descriptions, but would "color" them with strong differential connotations. Thus, for instance, whereas the members of a group characterized themselves as "generous", the members of the other group characterized them as "extravagant". Thus although they agreed according to descriptive attributes, the members of the two groups were opposed in terms of the value connotations to assign to those attributes as a function of their holder's ingroup or outgroup. A conclusion to draw from this study is that connotative meaning may be imposed upon descriptive meaning (or, value-validity may be imposed upon cue-validity) and that both kinds of meaning may function autonomously from each other. However, connotative meaning appeared to have some functional dependence from descriptive meaning, since, although opposed, evaluations were still made on apparently real characteristics.

5.1.9.2 Non-Natural Meaning Due to Psychosocial Correspondence

But Tajfel (1969a, 1981; Tajfel & Forgas, 1981) reported striking evidence for the possibility of a reverse relationship between the two kinds of meaning, so that descriptive attributes were completely ignored on the basis of a psychosocial value-dimension. In that study, two groups of non-Jew subjects were asked to discriminate Jews from non-Jews in a series of photographs. One group was composed of prejudiced subjects, and the other, of unprejudiced subjects, as had been previously measured by a questionnaire of attitudes toward Jews. Correct and false recognitions were then compared between the two groups.

Before describing the main result of the experiment, it seems worthwhile to notice certain possible implications of the judgmental task. Indeed, this experiment might be viewed as a test of the relative importances of psychophysical correspondence (and, specifically, cue-validity) and psychosocial correspondence (and, specifically, value-validity).

If judgmental outcomes were a function of cue-validity, one should expect prejudiced subjects to discriminate Jews and non-Jews with greater accuracy than unprejudiced subjects would do. Actually, discriminatory features are likely to be more relevant, and thus more distinctive for prejudiced than for unprejudiced subjects. As a result, the former would more readily be able to compare stimulus configurations, as showed in the photographs, to their Jew and non-Jew prototype representations, than would the former. Given the expected distinctiveness of discriminatory features for prejudiced subjects, their prototype representations should also be more accurate (cf Rosch, 1974, 1977, 1978) and, consequently, less error-prone.

But evidence was unsupportive of the above reasoning. Prejudiced subjects made significantly more errors than unprejudiced subjects. Further, errors made by prejudiced subjects were unidirectional. They were over-inclusive in the Jewish category. If errors were bidirectional, one could always consider them to be due to the weak salience of stimulus configurations. But the fact that they always occurred in the same direction, seems to be more parsimoniously explained in terms of value-validity: for prejudiced subjects, the non-inclusion of a Jewish instance into its category, would be the same as accepting that no "objective" differences existed between the two categories. An important consequence of such an acceptance for prejudiced subjects is that they would have to admit their <u>similarity</u> to Jews, because, probably, these subjects categorized themselves in the non-Jew category. As Leyens (1983) noticed, the main goal for these subjects was not to run such a risk, even though this had to be accomplished through the "sacrifice" of many non-Jews. Probably, the emergence of this judgmental outcome was enabled by the fact that no relevant descriptive attributes - i.e. attributes due to psychophysical correspondence - were there to be found (cf Billig, 1976). ~~In brief, these results do not conform to a "pure" cognitive explanation. Tajfel~~

~~(1978d) reviewed a series of experiments using other racial stimulations, in South Africa and the United States, which yielded similar results.~~

Taken together, the preceding experiments showed that, once categories are associated with social values, physical evidence contradictory to those values seems to be unable to challenge individuals' perceptions or beliefs. More generally, these experiments showed that value-validity functions are not only cognitive or emotional. Value-validity also presents relevant social functionality:

> "The maintenance of a system of social categories acquires an importance which goes far beyond the simple function of ordering and systematizing the environment. It represents a powerful protection of the existing system of social values, and any "mistakes" made are mistakes to the extent that they endanger the system." (Tajfel & Forgas, 1981, p.131).

5.2 SOCIAL COMPUTING: FROM PSYCHOPHYSICAL TO PSYCHOSOCIAL CORRESPONDENCE

According to social cognitivists, social cognition is an original approach in social psychology, because it has the advantage of accounting for the processes rather than exclusively for the contents involved in the processing of "social information" (cf Chapter 2). This argument encompasses three difficulties. One, is that, as we pointed out earlier in this work, social information cannot be defined as if it depended on the intrinsic properties of stimulation. This being acknowledged, the second difficulty is that a complete account of social processing of information cannot be reduced to its cognitive concomitants, although these are important components of that process. The third difficulty is that it is a false argument.

5.2.1 Process-Oriented Approaches to Psychosocial Correspondence

Aside from some trends like causal attribution which dealt almost exclusively with process (cf Chapter 3), social computing processes have been approached in two ways by social psychologists. One is the indirect study of the consequences of the passive assimilation of already-made value propositions. This was the case of the studies by Tajfel and colleagues that we described above. Still, the process itself was inferred to exist, rather

than described. Indeed, what was described, were the supposed consequences of the basic process of assimilation of social values. This might support the assumption that social psychology is unable to grasp the actual processes involved in social judgments, or, more precisely, that it lacks the theoretical and empirical tools necessary for it. We do not believe this to be true. As we have already suggested, it is not the "simplicity" or the "complexity" of the stimulus materials or of the measurement techniques, that determine the "possibility" or "impossibility" of studying social cognitive processes (e.g. in the laboratory), but rather, the kind of processes which are focused upon in those studies.

So, let us now push the value contents of normative propositions out of the limelight, and describe a few studies which created minimal social situations capable of illustrating the generation and assimilation of value propositions. Before doing that, it seems important to make a few comments on social values, in order to justify both the theoretical validity of such studies, and their relationship to the studies which focused more directly on the consequences of the assimilation process.

5.2.2 Values as Normative Propositions

As we proposed above, psychosocial correspondence often implies the establishment of value propositions. Once shared, these propositions correspond to social values. But, what are social values? Sherif (1966) considered them as equivalent to social norms:

> "The social values are examples par excellence of social norms. In fact, one may question whether there is any established norm that does not express a social value. The glory of the flag, the value of a diamond, the sweetness of home, the sanctity of property, and the sacredness of the Constitution express some of the everyday instances of socially established values (...) All these imply evaluations (...) indicating personal attachments once they are established in the individual. We call such norms as they are exemplified in these instances social values. (p. 113).

This sociological aspect of values, or social norms, has a cognitive complement, since norms are:

> "...influential standards that the individual forms in interaction with other people or acquires from groups significant in his eyes

> (...). Once internalized, such standards serve as premises or regulators by which relevant stimuli are ordered, categorized and responded to...(idem, p. x),

and a conative complement:

> "Once such frames of reference are established and incorporated in the individual, they enter as important factors to determine or modify his reactions to the situations that he will face later - social and even non-social at times(...)". (idem, p.106).

Hence, following Sherif (1966), norms could be conceived as semantic value propositions which are assimilated, constructed, and changed in social interactions, and which determine subsequent categorizations and inferences.

5.2.3 The Generation of Normative Propositions

Sherif's (1966) studies on norm formation provide an excellent illustration of the generative functions of social computing. Sherif submitted his subjects to the autokinetic effect, and asked them to estimate the motion-width of the small luminous point that creates that effect.[20] Subjects were run three times each. In the first session the subject was alone. After a number of trials, his motion estimates stabilized around a central tendency. In the second session subjects were run in dyads or tryads, and, were asked to give their estimates one at a time, in each of one-hundred trials. Results showed that, after a number of trials, subjects' estimates began to converge, and that, convergence stabilized until the end of the trials. In the third session each subject was re-run in isolation. Results showed that subjects held to the convergent estimates which had been generated in the group judgment session.

Results obtained by Sherif (1966) are a clear illustration of the relationships between psychophysical and psychosocial correspondence. Indeed, in the first experimental condition, subjects' estimates were exclusively guided by psychophysical correspondence. Illusory motion was determined by the

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[20] The autokinetic effect is an illusion of motion which occurs during the observation of a motionless small luminous point in a dark room with no other perceptual references. Illusory motion widths vary across and within individuals, generally in a range of 5cm to 18 cm, but gain significant individual consistency after a number of trials (Jacobs & Campbell, 1961; Sherif, 1966; Sperling, 1946, cited by Asch, 1952).

properties of the physical environment, as well as by subjects' perceptual limitations and capabilities. But, the group situation lead subjects to engage in reciprocal assimilations. So, they finally achieved a common standardized judgmental criterion, to which they held from that moment on. Although it was "minimal", the judgmental situation was a typical example of the generation of mutual knowledge and of its information-processing functionality. Alone subjects would not have been able to generate the "minimal" propositions they generated in social interaction.

5.2.4 The Extension of Normative Propositions

McNeill and Sherif (1976) attempted to reproduce social situations in which norms are created and changed as time goes on. These authors exposed three groups of subjects to the autokinetic effect. One group was composed by a naive subject plus three confederates who had been instructed to give highly extreme motion estimates as compared to the average range. In another group, the confederates had been instructed to give extreme, albeit less exaggerated, estimates. Finally, the third group was composed of four naive subjects. The experiment was run over 4 "generations". That is, in the end of each series of trials, one member of the group was replaced by a new subject, so that, at the begining of the fourth generation, none of the initial group members were still present. In the first two groups, the confederates were the first to be replaced by naive subjects.

Results showed that both the highly and the moderately extreme norms (as defined by the exaggerated confederates' estimates) were subscribed to by the naive subjects, whose estimates were significantly more extreme than those provided by subjects in the group from which confederates were initially absent. However, as generations went on, between-group similarity increased, and estimates rejoined their usual range. This was especially true in the group were the initial norm was extreme. But more interesting, it is possible that, as generations went on, the propositions subjects held to were modified by the assertions new subjects brought to the judgmental situation.

Sherif's (1966) study was a clear demonstration of the processes through which normative propositions are constructed. McNeill and Sherif's (1976)

study was an example of the gradual transformation of prestored propositions as a result of social interactions. But social interactions can produce clear-cut and immediate changes on previously stored normative propositions.

5.2.5 Ambiguation and Disambiguation of a Physical Stimulus as a Function of Social Computing

According to Sherif (1966), norm formation occurs in situations of stimulus ambiguity. This would mean that norm formation is an outcome of real-world properties. For instance, Sperling (1946, cited by Asch, 1952) partially replicated Sherif's original study, but one group of subjects was first made aware of the illusory character of the autokinetic effect. Results showed that subjects in this condition did not present judgmental convergence. The explanation provided by that author was that, because subjects knew that the motion was illusory, they had no difficulty in coping with it alone. Therefore, they remained impervious to mutual influence.

The above assumption might be interpreted as indicating that psychosocial correspondence is a function of real world stimulus ambiguity, rather than of social influence. However, non-natural meaning based on psychosocial correspondence is not less "objective" in the eyes of the perceiver than natural meaning. Tajfel (1978a) made this point quite clear:

> "The criterion of "objectivity" cannot be based on classifying phenomena as being of a "social" or a "non-social" nature (...). It can instead be defined in terms of the awareness (...) that there exist alternatives to the judgment one is making. A low (or nil) probability that alternatives to one's opinions exist may be due to the consistency over time in the checking of these opinions through non-social means (...); but it may also be due to the very high social consensus about the nature of a phenomenon, independently of whether the phenomenon is thought of as being "physical", "natural", or "social". (p.65).

For instance, it seems reasonably well established that color perception depends both on psychophysical and on linguistic constraints (e.g. Rosch, 1974; cf Costermans, 1980; Leyens, 1983). At least in the case of perceptually salient (or prototypical) colors, color perception and color naming seem to depend strongly on psychophysical correspondence (e.g. Berlin & Kay, 1969; Brown & Lenneberg, 1954). Therefore, according to Sperling's point of view, one might expect that once a group of individuals were to assign a name to a

unambiguous color pattern, they would have no need to engage in reciprocal influence processes. This may be true, but to what extent would the absence of ambiguity endure social influence processes?

A reinterpretation of some results obtained by research on minority influence (cf Moscovici, 1976; Mugny, 1982; Nemeth, 1979) could indicate that psychosocial correspondence may be imposed upon psychophysical correspondence.

For instance, Moscovici, Lage and Naffrechoux (1969) had subjects judge the color of a series of slides depicting atypical, albeit unambiguous, green and blue shades. In one of the conditions, subjects were run in groups of 6. In another condition subjects where run in groups of 4, plus 2 confederates. In this condition, confederates consistently gave "green" responses for blue slides. This was assumed to produce a conflict between the (psychophysical) majority norm held by the subjects, and, the minority norm instilled by confederates. The important result was that, in the norm-conflict condition, subjects began to converge toward confederates' responses as the trials went on. Even more important, once they were re-run in isolation, these subjects were more prone than control-subjects to give "green" answers to slides they had perceived as "blue" in the beginning of the group judgmental situation. Therefore, it seems that social influence processes may summon judgmental certainty, and replace it first by psychosocial uncertainty and, then, by a new norm (cf Moscovici, 1976). It is likely that Moscovici et al's (1969) subjects re-assimilated the majority norm of color naming once they went out of the laboratory. But, that experiment clearly showed that psychosocial correspondence is, at least, as important a determinant of cognition, as psychophysical correspondence is.

5.3 THE SOCIAL CONSENSUS OF NORMATIVE PROPOSITIONS: SEMANTIC MEMORY AS A SOCIAL PRESTORAGE SYSTEM

In order to complete this outline on social processing of information, we must discuss one of the main processes through which norms and values are transmitted and assimilated: language. Language offers a complementary perspective on social computing and on its particular concomitant effects on social interactions.

5.3.1 Language as Social Computing

It is a common assertion that language is one of the basic channels for the generation and change of social norms and the preservation of social values (cf Cicourel, 1979; Giles, 1978; Giles & Johnson, 1981). But for our concerns here, it is enough to note that language is a mediator between semantic and social structures, and, since language implies a meaningful underlying structure, that semantic memory is to a large extent, a social prestorage system. This fact has an important implication. Actually, if language is a social prestorage system, it derives more from psychosocial than from psychophysical correspondence. As Billig (1976) put it:

> "By its nature a linguistic category will divide the world into what are instances of that category and what are not. In stating this, little if anything, of a psychological nature is presupposed. The real question for the social psychologist is how this differentiation actually occurs and what its psychological effects are. (...) One can assert that categories are primarily a matter of social convention. By this it is implied that they reflect the social world rather than some external reality without any social mediation." (p. 337).

Even at the interpersonal level language is, itself, controlled by social norms which define word meanings and acceptable syntactical structures (e.g. Asch, 1952; Cicourel, 1979; Costermans, 1980; Lindsay & Norman, 1977). These norms depend to a large extent on the social context in which the individual develops (e.g. Bernstein, 1971; Gregersen, 1979; Johanna Turner, 1975), as well as on the current context of communication (e.g. Levinson, 1983; Lindsay & Norman, 1983; Rommetveit, 1972). But, language becomes a normative process also insofar as it is mainly through verbal communication that values are assimilated or generated in the course of social interactions, and, therefore, that operational relations are established among several representing worlds (e.g. Street & Giles, 1982). Further, it implies that the categories held by a social group result from "conventions" among its members. These conventions do not seem to be more than norms, and might be related to two components of verbal communication: assertions and presuppositions.

5.3.2 Assertions and Presuppositions

According to Costermans (1980), any declarative (as opposed to interrogative, for instance) verbal interaction is motivated by the fact that the speaker wants the listener to accept the truthfulness of a proposition he translates, more or less partially, into verbal behavior. But this implies that speakers and listeners assume that they possess some common background knowledge (e.g. Clark & Carlson, 1982). In other words, language has an assertive component which corresponds to what is intended to be assimilated by the listener, and a presuppositional component (Costermans, 1980), which is assumed to be part of a common prestored propositional system.

Social values are clear examples of mutual knowledge held by the members of a social group, and social interactions may often be based on the interactants' reciprocal assumptions of mutual knowledge (Cicourel, 1979). Therefore, social influence processes may be conceived as the attempt to create or to increase mutual presuppositions. If this is accepted, then one should admit that, individual's representing worlds embody more or less widespread propositional systems which, since they are shared by a number of individuals, come to define social groups (e.g. Di Giacomo, 1980; Sherif & Sherif, 1979). Eventually, some of those presuppositions become assertions, once communication is established with members of other groups. In this case, social norms might have the intra-individual status of propositions, the inter-individual status of presuppositions, and the inter-group status of assertions. One study by Di Giacomo (1980) might illustrate this assumption.

5.3.3 Representing Worlds as Intra-Group Presuppositions

Di Giacomo (1980) took the benefit of a student movement in the university campus of Louvain-la-Neuve, in order to show the impact of group representations on collective behavior. In the first stage of his study, Di Giacomo (1980) analysed the students' opinions on the issues related to the movement, as well as their reported readiness to follow the committee's proposed strategy. Results indicated that students seemed generally interested in the issues at stake, and also, that they reported themselves prone to follow the committee's plan. However, students disagreed with giving the

movement a political dimension.[z1] Surprisingly, when a general strike was announced some weeks later, the movement was almost a complete failure in obtaining adherence from the student population.

In order to determine the reasons for that failure, Di Giacomo, asked a second representative sample of students on the campus, to associate words with 9 category-names. These were committee, extreme-left, strike, workers, and power (words extracted from the committee's platform),[zz] students (the hypothesized category into which subjects included themselves) executives (by opposition to students and workers), AGL, and, extreme-right (as opposed to extreme-left). Figure 4 shows the results of a multidimensional scaling on semantic distances as a function of the common and distinctive words associated with the 9 category-names.

Di Giacomo (1980) provided the following interpretation for this finding:

> "It is clear that the committee, its political position, its plan and its phrases are viewed by the students as quite alien to them and to what most of them will be in later life [executives]. On practically all dimensions students is separated from committee and its context. Executives is completely opposed to committee and extreme-left. The closeness between executives and students is the key to interpretation of the data. Although these two words are very close, they bear a different relationship to power. Executives is linked to it whereas students is opposed to it: students see themselves as helpless protesters who will become more powerful and conservative when they are executives. (...) it seems clear that the committee's failure to lead a generalized student movement is [due to the absence of] arguments that could make the students identify with the committee's plans. "Student-workers solidarity" is defeated by the opposition between workers and executives. The committee's ideological and political position is opposed to the students' non-political position and their closeness to the right (...). Commitment to the movement while it was led by the committee, would have meant leaving their cultural group to enter another (...). Two modes of sociological integration confronted to each other; the students perceived them as incompatible. Relegation of the committee to an outgroup was therefore inevitable." (pp.339-340).

[z1] The student protest movement was an attempt to counter a series of economic measures taken by the Belgian government for French-speaking universities, such as doubling the enrollment fees and reducing grants and running budgets. This was part of a "anti-crisis" law which, in addition, provided special powers to the government. The leadership organization of that movement on the campus of LLN was known as the "committee", whose platform involved a left-wing program of alliances (e.g. "students - workers") and a political, rather than corporatist strategy (e.g. to fight against the government's special powers). An organization which opposed the committee's platform and which proposed a corporatist goal and a negociated solution to the problem was the General Assembly of Students of LLN (AGL).

[zz] The committee proposed a general strike against governmental powers and to allying itself with workers, and presented itself as left-wing.

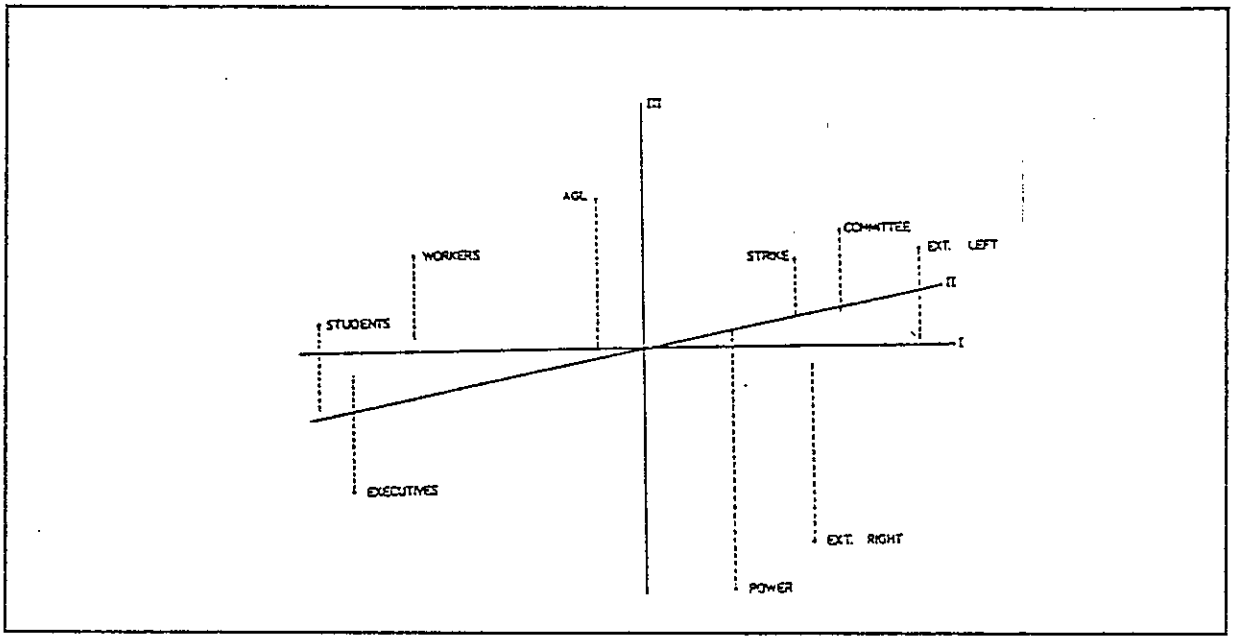

FIGURE 4 - A Representing World of Political and Sociological Membership of Several Social Categories. From Di Giacomo, J.P. (1980). Intergroup alliances and rejections within a protest mouvement. European Journal of social Psychology, 10, 329-334. p.338.

In his discussion, Di Giacomo (1980) was implicitly comparing the committee's assertions to the students' presuppositions. It might be that students' initial proneness to follow the committee's platform was the result of some "noise" generated between the committee's assertions and their interpretation by the rest of the students. For instance, looking at Figure 4, one may see that strike is positioned in the middle of the plot. Di Giacomo (1980) interpreted this finding as indicating that, for students, strike had an ambiguous meaning: it could refer either to a political or to a corporatist (economical) strategy. Therefore, the proposition "to go on strike", which was part of the committee's assertions, might have been first interpreted on the basis of the presuppositions held by the students (e.g. go on strike against economical measures). As a result, students identified with the committee's plan. But, the actual message was rather "to go on strike against special powers". Once the committee's assertions became clear and, by the same token, once they became contradictory with reference to the initially inferred

compatibility between the committee's and the students' presuppositions, the latter group felt itself estranged from the entire message.

Another interesting feature of that study is that it simultaneously depicted a cognitive model of the subjects' social world with its objects and relational elements. In this general sense, it is entirely in accordance with the notion of "representing world", as was presented by Palmer (1978; cf Chapter 4), with the exception that in this case, it corresponds to a normative intra-group presupposition.

5.3.4 Intergroup Differences in Normative Presuppositions

The fact that social norms correspond to propositions resulting from social computing processes, and that, at a certain level, these processes occur inside more or less well-defined social boundaries (cf Sherif & Sherif, 1969), makes it likely that social categories differ according to their components, from one social group to another.

Yzerbyt (1986) found evidence for this fact. The same category-name may induce significantly different category components, according to cognizers' social group memberships. Further, he presented evidence for the fact that, apparently synonymous category-labels may induce different categorical contents, depending on group memberships and on the values primed by those category-labels. Law, Medecine and Psychology students were presented with a case, which described a young person by means of information about his/her gender, age, given name, and by the fact that he/she took heroin. In one condition, the target-person was presented as a "drug addict", and in another condition, as a "junkie". These labels were aimed at priming different value orientations even if the two labels seem to be synonymous (Yzerbyt, 1986). Subjects were asked to produce words capable of defining the judgmental target. The analysis of between-group similarity of descriptions showed that the three groups diverged significantly from one another. Contents assigned by Law students opposed those assigned by Medecine and Psychology Students. Medecine and Psychology students also presented secondary, albeit important, divergences. Further, whereas, for Medecine and Psychology students the category-labels, drug addict and junkie, had no effect on category contents,

Law students assigned quite distinctive contents to each label. These results seem to show that not only categorical contents vary between groups, but also that the very organization of categories may be group specific (cf Figure 5).

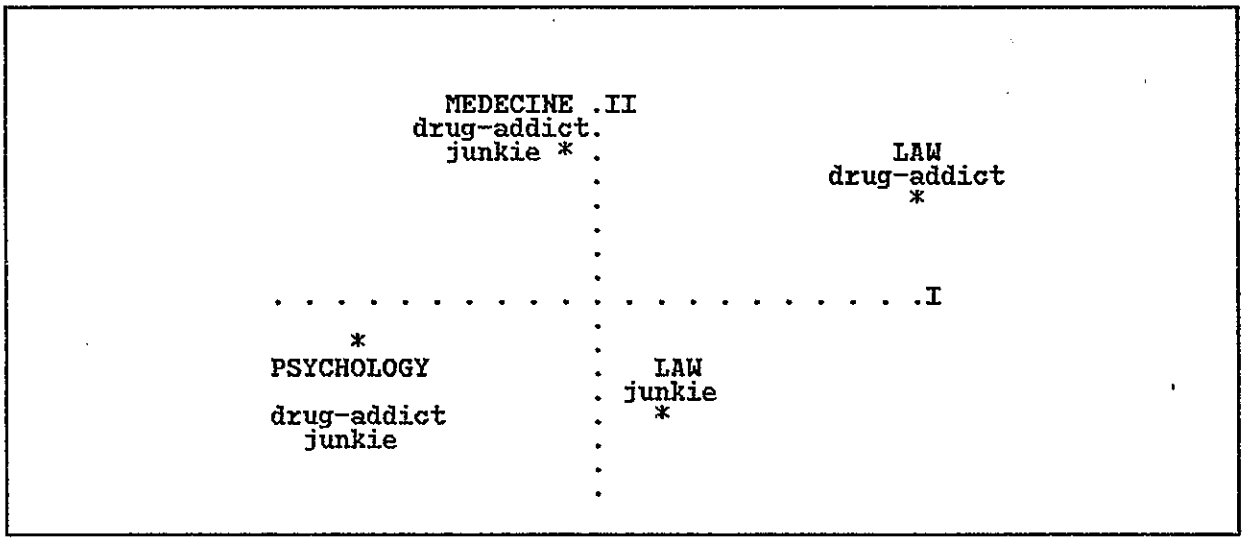

FIGURE 5 - Relative Positions of Category-Labels (Drug Addict vs. Junkie) as a Function of the Associations given by Members of three groups (Law vs. Medecine vs. Psychology). From Yzerbyt, V. (1986). De l'utilité de la notion de "prototype" dans l'étude des représentations sociales. Unpublished manuscript. Catholic University of Louvain at Louvain-la-Neuve: Laboratoire de Psychologie Expérimentale et Sociale.

Finally, the contents associated by each group to each category-name were barely descriptive. Generally, those contents reflected strong evaluations (e.g. "fool", "irresponsible", "unappreciated", "ruined", "distressed", etc.). That is, even if, for simplicity, we consider the formal knowledge specific to each group as being susceptible of conveying differential descriptive, technical contents related to "drug addiction", it seems that subjects' productions were far more illustrative of differential assimilations of larger scale cultural values (Yzerbyt, 1984).

5.4 CONCLUDING REMARKS: SOME GUIDELINES TOWARD A MODEL OF SOCIAL PROCESSING OF INFORMATION

It would be both elegant and unrealistic to end by proposing a parsimonious and empirically testable model of social processing of information. Nevertheless, the speculations we presented all throughout this chapter might be systematized in terms of their main implications. So, let us present a few ideas which might function as working assumptions toward such a model.

We presented some evidence for the specificity of judgmental outcomes of social computing as compared to those one might expect if information-processing was guided exclusively by the cognitive principles we reviewed in Chapter 4. These outcomes were, the distortion of perceptual and cognitive judgments as a result of values held by perceivers, the sharing of propositions by several individuals, and the development of social propositions, which, we speculated, might function as normative presuppositions inside social groups. The major postulate to draw from social computing should be that social cognitive structures depend more on normative propositions conveying social values, than on stimulus constraints. The other postulates would derive from it.

5.4.1 Descriptive and Connotative Attributes

One postulate would be that a category-name should present correlations with both descriptive and connotative attributes. However, the valence attached to a category-name (i.e., the positioning of a category-name on a point of a value dimension) would be more important than its descriptive attributes. Evidence supportive of this postulate was provided throughout this chapter, but the clearest examples were the study about the recognition of Jewish features and Peabody's study. Additionally, we postulate that connotative attributes are not directly stored with category-names. The fact that these attributes depend more on the perceiver's phenomenological approach to reality than on external stimulus configurations, allows one to hypothesize that they are less consensual between individuals, and less consistent within individuals than descriptive attributes. Although we have no available evidence for this fact, indirect evidence was provided by Yzerbyt's study, which showed that category contents may vary with "synonymous"

category-labels. In this case, inter-individual consistency seemed to be determined by, or at least strongly correlated with, cognizers' group memberships.

5.4.2 Value-Validity and Similarity Computings

A final postulate would be that two categories are considered similar to the extent that (let their descriptive attributes be constant, and, given their valence and the weight of the judgmental situation), they are assigned to the same point of the value continuum according to which connotative attributes are organized.

This postulate has three implications: (1) the similarity of two categories or the similarity of an instance to a category are not prestored, but rather, computed in the judgmental situation; (2) an instance may be judged as pertaining to a category on the basis of their descriptive features, and still, be value-rated quite differently from the category; (3) an instance may be prototypical of a category in terms of descriptive features and atypical in terms of connotative features, and vice-versa. These would be the principles of value-validity.

5.4.3 General Implications: The Plasticity of Social Categories

The general implication of the postulates suggested above is that when thinking about changing the contents of a social category, one must consider that if the contents to change were descriptive, changing the contents would imply changing the perceiver's environment; if, on the other hand, the contents to change were connotative, these would be momentary contents, and they would change to the extent that the judgmental situation changed. The main question lies on whether one is to accept the descriptive or the connotative view. If the latter is accepted, one should not conceive social categories as results of inductive processing, but rather as the outcome of a mechanism intended to create and/or to maintain a "false consciousness" (Billig, 1976) or a justification of a given state of affairs (Allport, 1954). These would be "ideological", rather than "data-driven" categories. In such a case, more than attempting to change social categories by inductive means, or

studying the influence of perceptual cues on their generation, it would be more relevant to focus (1) on the social constraints that lead a category-name to hold a definite valence, or even to exist; (2) on the situational constraints that produce variations in the value components assigned to a category or to its instances; and (3) on the social criteria which lead some perceptual cues to acquire value (and, consequently, perceptual relevance) whereas others do not. The remainder of this study deals basically with the first and second topics.

VI

GROUP PERCEPTION

In the "Introduction" we pointed out that the central theme of this work is stereotyping or intergroup perception. However, until now we have presented only marginal references to stereotype theory and research, and even as such, those references were aimed at illustrating broader issues. This is not very surprising, given the somewhat marginal status of the stereotype field within social perception and social cognition. Still, the study of stereotyping processes seems to be indissociable from those orientations. This standpoint is neither original nor consensual among researchers on the field of stereotyping. As we pointed out in Chapter 3, stereotypes have been approached as cognitive categories ever since the emergence of the "new look in perception". Nowadays, agreement seems to exist on the fact that

> "...stereotyping involves an act of social perception or judgment on the part of an observer who assigns - overtly or in thought - a dispositional quality (trait, attitude, motive, intention) to another individual or group. The stimulus for the stereotype consists of some feature of the individual - in principle, any feature, but typically a quality of the individual's physiological or biological identity (race, age, sex, physical appearance) - or an aspect of the individual's social or behavioral identity (religion, ethnicity, biographical history in terms of mental illness or imprisonment). Whatever the particular "trigger", stereotypes are viewed as embellishments, as extrapolations or miniature theories built around the categorical property or social identity at issue." (Miller, 1982, pp. 28-29).

The problem with this definition is that it conceals two quite different explanations about the genesis and the functions of stereotypes. One, is in close accordance with what we designated as a "psychosocial correspondence" approach to social categorization, and comes from the social categorization - social identity - social comparison theory, which was developed by Tajfel and colleagues (e.g. Tajfel, 1978a, 1982a, 1982b). The second orientation is a development of the so-called "perception of outgroup attributes" (cf Chapter 3) which has emerged recently in social cognition. Whereas the former orientation views stereotypes as cognitive structures, determined by social

values, and serving to achieve or to maintain a positive social identity, the latter sees stereotypes as cognitive shortcuts helping individuals to cope with the complexity of human stimulation.

In the present chapter we attempt to provide a summary review of the two orientations. Also, we attempt to extend the social categorization - social identity - social comparison theory by proposing an additional process derived from the general process of ingroup favoritism, which we called the black sheep effect. This shall be done by comparison with one apparently consistent set of findings which have been obtained under the heading of the complexity-extremity hypothesis (Linville, 1982a, 1982b; Linville & Jones, 1980), which subscribes to the "pure" cognitive analysis of stereotyping processes.

6.1 INTERGROUP CONTACT AND STEREOTYPES: A "PURE" COGNITIVE APPROACH

The current "pure" cognitive analyses of the processes involved in stereotyping, focus on the issue of intergroup contact. Contact between groups has been assumed to influence intergroup relations and images attached to stereotyped groups, and it draws on the assumption that

> "...it seems intuitive that persons usually have greater contact with groups they belong to than with outgroups. Greater contact with ingroups should provide more opportunities to encounter a diversity of persons and behaviors. Consequently, persons are likely to have developed a more differentiated and complex view of ingroup than of outgroup members." (Wilder & Cooper, 1981, p.261).

This point of view comes directly from Campbell's (1967) idea, according to which stereotype accuracy is a reverse function of the frequency of intergroup contacts. However, intergroup contact in real-life settings often lead to the strengthening of stereotypic beliefs rather than to their decrease (cf Brown, 1984; Milner, 1981; Rose, 1981; Stephan, 1984; Stephan & Rosenfield, 1982). Given this failure, attempts were made to study the antecedents and the consequences of possessing differential information about ingroups and outgroups on judgments about ingroup and outgroup members.

6.1.1 The Perceptual Distinctiveness of Human Stimulation

According to some authors, the difference between categories of human objects and categories of natural objects is that, because of their perceptual salience, the unpredictability of their actions, and their plausibility as causal agents, humans convey more complex information than non-human objects (e.g. Wilder & Cooper, 1981). As a result, stereotypes have been conceived as oversimplified categories due to the perceptual and cognitive limitations of social perceivers (e.g. Jones, 1982).

Although a theory of stereotyping cannot be properly said to exist within this "purely" cognitive orientation (indeed, the theoretical bases are issued from theories of general perception and cognition), some systematic accounts have been provided in the literature. Among these, Taylor (1981) proposed an explanation of stereotyping whose basic process is as follows:

> "...if the perceiver is categorizing an individual on the basis of a salient attribute, using a stereotype to interpret behavior and making within-category discriminations on the basis of category-size, we should find that an individual will be stereotyped depending on the number of other members of his or her social group present. (...) Furthermore, assuming membership in a category to be the epitome of familiarity with that category, we might expect [members of that category] to be better at making discriminations within [it] (...). Familiarity with the members of a category provides anchor points, either in the form of objective information about objects and their attributes or in terms of subjective opinions about them." (pp. 86-87).

6.1.2 Salience and Familiarity: Perceptual Cues as Determinants of Stereotyping

Taylor's (1981) ingroup familiarity hypothesis might be indirectly supported by evidence showing that repeated contact with a given stimulus domain increases the likelihood of encountering information which is contradictory with prestored beliefs (Higgins et al, 1981). Such belief-incongruent information induces information-processing deeper and slower than belief-congruent information (Taylor & Crocker, 1981), which, in turn, should increase memorability (Hastie, 1981), therefore increasing the complexity of cognitive representations about that stimulus domain (Cantor & Mischel, 1979; Linville, 1982a; Ostrom et al, 1981; Weber & Crocker, 1983).

However, Taylor's (1981) ingroup familiarity hypothesis in contradiction with the inter-category differentiation - intra-category assimilation hypothesis (cf Chapter 5), according to which, the existence of two contrasting category-labels heightens the perceived dissimilarity between instances categorized under different labels and the perceived similarity of instances categorized under the same label (e.g. Tajfel & Wilkes, 1963). As we argued in Chapter 5, this seems to correspond to a principle of category-validity (Murphy & Medin, 1985). Therefore, it is possible that familiarity with a stimulus domain affects inferences, only when the perceivers are not lead to categorize instances into contrasting categories.

Interestingly, Taylor's (1981) hypothesis about the role of perceptual processes in creating intergroup discriminations recovers the assimilation-differentiation hypothesis. Her assumption was that salient perceptual dimensions create a distinctiveness which causes individuals who present opposed values along those dimensions to be discriminated against in stereotyped terms. The only difference between the perceptual-cue hypothesis and the assimilation-differentiation hypothesis, is that whereas the latter assigns this process to constructive mental activities, the former considers assimilations and differentiations as due to the perceptual salience of external stimulation. Taylor (1981) based her claims on a series of experiments by Taylor, Fiske, Etcoff and Ruderman (1978).

In one experiment, Taylor et al (1978) had White subjects listen to a tape-recorded discussion among 3 Blacks and 3 Whites. Each participant's face was displayed on a slide each time he made an intervention. Subjects were asked to observe the discussion, and, later on, to match each intervention as it was written on a sheet of paper, to the corresponding discutant, as he was presented in a photograph. Subjects were expected to operate a clear-cut differentiation between Blacks and Whites, and, to operate clear-cut differentiations among Whites but not among Blacks. Results confirmed the intergroup differentiation hypothesis, but the familiarity hypothesis ran unsupported: although no interventions which had been made by Blacks were assigned to Whites and vice-versa, subjects were as likely to confound a Black with another Black as to confound a White with another White.

Similar results were obtained in a second experiment by replacing the Black-White by a Male-Female dimension. In a third experiment, Taylor et al (1978) varied the ratio of male and female targets. In one condition, male and female subjects were presented with 6 males (or 6 females), in a second one, with 1 male and 5 females (or 5 males and 1 female), in a third one with 2 males and 4 females (or 2 females and 4 males), and, in a fourth condition, subjects were presented with 3 members of each sex. In addition to the differentiation and the familiarity hypotheses, it was predicted that the distinctiveness of participants (as a reverse function of the relative size of their categories) would increase so that "solo" participants (i.e. males alone or females alone) would be the most distinctive. As a result, inter-category and intra-category error rates were expected to be negatively correlated with the category-sizes. Indeed, results showed that the fewer the number of members in a group, the more attention was paid to them. However, group memberships had no differential effects on intragroup discriminations. The familiarity hypothesis was disconfirmed whenever a category was represented by more than one person.

6.1.2.1 Category-Validity, Perceptual Cues and Familiarity

Taylor et al (1978) commented the failure of confirming the familiarity hypothesis as follows:

> "It may be that inability to discriminate among members of a particular group occurs only in conditions where (...) it will prove to be useful to be able to identify members of own race or sex and their contributions, rather than those of other race or sex. Alternatively, it may be that membership in a category gives no special advantage apart from familiarity, and these subjects may have been highly familiar with both males and females and blacks and whites." (p.791).

But, surely, these ad-hoc explanations seem to raise more problems than they solve. Namely, the authors did not specify how and why is it "useful" to disregard information available through familiarity with the ingroup. Furthermore, one might wonder about what intergroup differentiation it is that leads people to interact with the same frequency ~~[and, one might suppose, in the same manner]~~ with ingroup and outgroup members.

A parsimonious explanation of the entire set of results obtained by Taylor et al (1978) on the basis of perceptual processes alone seems rather difficult. Indeed, in order to be coherent, a perceptually-based explanation should be supported both for intergroup and for intragroup discrimination. But the fact that the familiarity hypothesis was disconfirmed seems to put Taylor's explanation of the perceptual genesis of stereotypes on questionable grounds. Why should perceptual factors operate for intergroup discriminations and be absent from discriminations among ingroup members? Looking at the results, it seems quite clear that the differentiation-assimilation hypothesis was the only one to receive full support. If this is reasonable, then one might speculate that the race or the gender cues subjects observed functioned more as category-labels upon which category-validity operated in subsequent recall, than as psychophysical criteria of categorization.

6.1.3 Availability and Familiarity: Storage Limitations as Determinants of Stereotyping

Other authors explained stereotyping by emphasizing memory storage limitations, rather than perceptual limitations. For instance, Rothbart (1981) argued that stereotypes depend on the mere observation of real world cues, and that representations of these cues may be shortcut in situations of informational overload. In these situations, stereotypic beliefs should be determined by the most available informational items about the stereotyped group on memory. This idea was inspired by a series of studies by Rothbart, Fulero, Jensen, Howard and Birrell (1978). These authors hypothesized that information about the members of a social group is organized around general and abstract personality-traits - i.e. in stereotyped terms - because stereotype-holders - i.e. perceivers - generally have a small number of opportunities to contact those group members, and, concomitantly, because they usually perceive group members in high memory-load situations.

In one representative experiment, Rothbart et al (1978) attempted to check for the effects of familiarity with a stimulus-group on the stereotypy of encoding of information about that stimulus-group. Familiarity was operationalized in terms of memory-load, i.e. the mnemonic consequences of the quantity of information provided about the group, and, exposure, i.e. the

number of times subjects were presented with that information. The group's likability was operationalized by varying the ratio of positive and negative traits ascribed to its members.

Subjects were presented with pairs of informational units, each pair being composed by a person-name and a personality-trait describing that person. Memory-load was varied by presenting subjects either with 16 pairs (low memory-load) or with 64 pairs (high memory-load). Exposure was manipulated by presenting a trait several times in association with the same person-name (multiple-exposure), or, the same number of times, but, each time in association with a different person-name (single-exposure). Finally, likability was varied by presenting subjects with either three times as much positive traits as negative traits (likable) or only one third as much as negative traits (unlikable). Among other tasks, subjects were asked to rate the group in terms of overall attractiveness. Results supported the predictions with a significant Memory Load x Exposure interaction. In the high memory-load condition, judgments about group attractiveness depended on the number of times subjects saw positive as compared to negative traits, regardless of the persons with whom those traits were associated. In the low memory-load condition, multiple exposure led subjects to make judgments in association with persons, whereas single exposure led them to judge the group in overall, stereotyped, terms. These results were paralleled by recall measurements on the traits and on the persons.

In sum, Rothbart et al (1978) apparently succeeded in confirming the familiarity hypothesis. Indeed, one might assume that stereotypy decreases with increased exposure, and that memory-load is negatively correlated with the frequency of exposure. Hence, it might be supposed that the stereotypy of beliefs about a group (considered as the encoding of information about that group in terms of abstract personality traits rather than in terms of concrete persons) is a reverse function of the opportunity to contact with the members of that group. Still, we should not take for granted the fact that Rothbart et al's (1978) findings apply to real group perception situations (see below).

6.1.4 Stereotypes as Non-Natural Meaning Categories

A complementary approach stressed cognitive biases, rather than perceptual or storage limitations as causes of stereotyping. This was the case of Hamilton and Gifford (1976), who claimed that stereotypes are caused by illusory correlations (cf Chapter 5).

In one experiment, these authors presented their subjects with 39 sentences, each one describing a different behavior by a different person. Persons were identified by their membership in a category, "A" or "B". Category A was described by 26 behaviors (a "majority group"), and category B was described by 13 behaviors (a "minority group"). Further, these behaviors were either socially desirable or socially undesirable so that each category was described by means of about twice as many positive as negative behaviors (category A was described by 18 positive and 8 negative behaviors, and, category B was described by 9 positive and 4 negative behaviors). That is, the ~~distribution~~ proportion of positive and negative behaviors by the categories, given their total numbers of behaviors, implies that no differential relationship existed between the category labels and the behaviors' desirability. Subjects were asked to read the behaviors describing each group. Next, they were provided with a list of all behaviors, and were asked to match each one with the category with which it had been associated. Results showed that recognition was biased, such that undesirable behaviors were assigned to (the "minority") category B in a significantly higher proportion than to (the "majority") category A, whereas desirable behaviors were assigned proportionally more to category A than to category B.

On the basis of these results, Hamilton & Gifford (1976) argued that stereotypes depend on the functional relationship between the distinctiveness of the members of social minorities and the distinctiveness of generally less frequently displayed socially undesirable behaviors. In order to show that this process has nothing to do with previously existing prejudiced attitudes or emotional factors, the authors replicated the experiment by reversing the ratio of desirable and undesirable behaviors, and found that the "majority" category was assigned with a significantly higher proportion of undesirable traits than the "minority" category, and, conversely, that the "minority" was assigned with a higher proportion of desirable traits than the "majority".

6.1.5 Some Comments on the Perceptual and Cognitive Determinants of Stereotyping

The experiments by Taylor et al (1978), Rothbart et al (1978), and Hamilton and Gifford (1976) deserve some comments. These experiments have some similar and some differential features.

With respect to similarities, they all presupposed that stereotypes are uniquely due to individual computing processes. Further, they all ignored the fact that, probably, self-reference is one of the major determinants of outcomes of stereotyping processes. Indeed, all studies considered perceivers as passive observers to whom information about persons is provided and who must arrange that information in some simplified way. Perceiver's personal implication in that process was simply ignored or made irrelevant.

In what concerns the differences, whereas Taylor et al (1978) presupposed that stereotypes are due to stimulus characteristics (distinctiveness), Rothbart et al (1978) presupposed that they are due to cognitive limitations (memory-load), and, Hamilton and Gifford (1976) considered that they are due to cognitive biases (illusory correlations). So, in light of the ideas we presented in Chapter 5, we might say that, whereas the first two considered stereotypes as simplifications of real-world stimulation, i.e. natural meaning structures, the third one considered stereotypes as non-natural meaning structures. Yet, the social and emotional concomitants of those perceptual and/or cognitive processes were commonly disregarded.

6.1.5.1 "Real" versus "Fake" Stereotypes and Consequences for the Familiarity Hypothesis

As we noted in Chapter 3, categorization has generally been conceptualized as a component of the stereotyping process (e.g. Allport, 1954). But, stimulus materials whose relationship to stereotypes is only an analogical one have been used to analyze stereotyping processes. From our point of view, extrapolations from those studies are somewhat problematic, because they ignore some important specificities of the stereotyping process as compared to the process of categorization.

Now, it seems worthwhile to compare the outcomes of Taylor et al's (1978) and Rothbart et al's (1978) studies. An interesting feature of such a

comparison is that, whereas Taylor et al (1978) failed to show that increased opportunity to contact members of a group decreases stereotyping, Rothbart et al (1978) succeeded in obtaining that effect. However, Rothbart et al (1978) employed a fictive group, whose social relevance is, at least, questionable, whereas Taylor et al (1978) employed dimensions which seem to present a strong relevance in the social context of their experiments. It is true that extrapolations are possible from the results of Rothbart et al (1978) to the stereotype domain. As Rothbart (1981) claimed:

> "Under real life conditions, when the number of encounters with members of a group is high and/or the encounters have occurred under conditions in which there are other significant demands on memory, the setting most approximates that of our high memory-load condition. Under these circumstances we would expect people's impressions of a group to be influenced by the most available (most memorable) traits or behaviors, uncorrected for the correlated occurrences (multiple presentations of the same individual[s]). Under high load, repeated experiences with a subgroup of say, noxious individuals may disproportionately influence the perception of the entire group, whereas under a low load, these experiences would be correctly assigned to those members and not necessarily attributed to the group as a whole." (p.170).

However, such an extrapolation needs much more empirical validation in situations susceptible of replicating stereotype judgments, more than in experimental conditions which use person-names and personality-traits as substitutes for "non-social" materials. Incidentally, Taylor et al (1978) used such socially relevant dimensions. Tajfel (1982b) illustrated one difficulty with the results obtained by these authors on the basis of that fact:

> "In some ways [Taylor's (1981] argument begs the question, since it fails to provide a rationale as to why some individuals are singled out as a basis for the formation of stereotypes and others are not. For example, it is unlikely that "solo" red-haired or fat persons in groups of "mixed" composition would generate widely diffused social stereotypes of "groups" of red-haired or fat people. The behavior of certain individuals often becomes relevant to the stereotype of their group because they are representatives of a category which has a preexisting social significance emmeshed with preexisting value connotations. Attention-focusing becomes important for stereotyping mainly when it happens in the context of these preexisting evaluative social differentiations and when it is determined by them. There is still no evidence that, outside of this context, attention-focusing on individuals who are in some ways "different" is a primary condition of the process of stereotyping." (p. 7).

If Tajfel's argument is accepted, then we could speculate that Taylor et al's (1978) subjects did not only rely on category-validity in their recall judgments (since they did not apply for ingroup familiarity) but also that they relied on psychosocial correspondence (since the Black-White and the Male-Female dimensions seem to be normative ones inside subjects' social context). If this is true, then it is impossible to determine exactly the part played in Taylor et al's results by the distinctiveness of perceptual cues, on the one hand, and/or, by the social relevance of the categorization dimension, on the other. Moreover, if one accepts that subjects' responses were due to the fact that such dimensions provided them with category-labels upon which they anchored their judgments, then that study might be considered as an ecological validation of Rothbart et al's (1978) study, namely with respect to the familiarity effect. Indeed, if one is to accept that subjects in Rothbart et al's (1978) study were presented with socially irrelevant information, whereas those in Taylor et al's (1978) were presented with socially relevant dimensions of person-categorization, then, one may speculate that the familiarity effect occurred with irrelevant stimulus-materials, rather than with socially relevant ones.

Actually, the problem of ecological validity applies to Hamilton and Gifford's (1976) studies as well. These studies are far from explaining, for instance, why some minority groups (e.g. "Hippies", members of some political parties, "millionaires", and so on) are judged positively by some individuals and negatively by others, even if these individuals do not belong to those groups. The ~~social~~ perception of these "relevant" groups seems to be determined by other kinds of processes, even if illusory correlations play an important part on that perception.

To summarize, the major problem with the studies we described here is that, as we argued earlier in this work, they took for granted that putting person-derived stimulation in any judgmental context, free from value considerations or emotional implications for the subjects, is enough to accede to the explanation of social processes. This is clearly a quite reductionist point of view. Our criticism is not intended to mean that the study of such processes is useless to the etiology of stereotypes. The problem is that those

studies must be viewed as heuristic contributions which need empirical validation by taking into account the specific processes involved in stereotyping. This conclusion would lead us to accept Tajfel's (1982b) standpoint, according to which there is still no evidence for the fact that stereotyping is due to processes identical to those postulated by "pure" cognitive models.

6.1.6 Indirect Tests on Stereotyping

Contrarily to Taylor's (1981) and Rothbart's (1981) claims, studies on perception, inference and recall allow one to suppose that stereotype-holders' can function autonomously from real-world cues. These studies seem to be more interesting for the stereotype domain than the preceding ones, because their results were confirmed by other studies which bear directly on that domain.

For instance, Cohen (1981) asked her subjects to rate a series of life style characteristics in terms of their likelihood to describe either a typical waitress or a typical librarian. On the basis of responses, Cohen constructed a video in which a woman talked to her husband, in a manner by which she depicted the same number of typical waitress and of typical librarian characteristics. A second group of subjects was then asked to view the film and, after, to recall the woman's characteristics. Half of the subjects had previously been told that she was a waitress, whereas another half had been told she was a librarian. As predicted, subjects in the former group recalled significantly more waitress than librarian characteristics, whereas subjects in the latter recalled significantly more librarian than waitress characteristics. One interesting aspect of this study is that priming a given category-label elicits recall of congruent, to the detriment of incongruent, information. If these results can be applied to intergroup contact, it is reasonable to suppose that perceivers select preferentially those cues which are in accordance with their previous impressions about the group. However, one should notice that the part played by social values or emotional relevance on that selection is quite doubtful, or at least, quite weak.

Rothbart, Evans and Fulero (1979) obtained results similar to Cohen's (1981). These authors presented their subjects with 50 behavior descriptions, each one being associated with a different person. The traits had previously been grouped into 5 categories: "intelligent", "unintelligent", "friendly", "unfriendly", and "unrelated". Subjects were told that the 50 target-persons were members of the same group and, according to the conditions, either that the group was "intellectual" or that it was "friendly". Further, whereas some subjects were told about the category-labels before the presentation of the behaviors, other subjects were told about it after the presentation. The underlying idea was that prior expectancies would bias encoding and, consequently, recall, so that expectancy-incongruent information would be discarded. Results supported this hypothesis. Subjects with prior expectancies were better able to recall behaviors congruent with the respective category-labels than subjects in the other condition. No differences were found on recall for disconfirming or unrelated behaviors.

Darley and Gross (1983) showed that stereotypic expectancies bias evaluations of behaviors of members of stereotyped groups, even when those behaviors have, objectively, little to do with the stereotype. It seems likely that, although judgments in that experimental setting were relatively free from emotional constraints, they nevertheless involved social value-dimensions. These authors, had their subjects view a film in which a child performed an intelligence test. Whereas one group was told that the child came from a low socio-economic background, another group was told that he came from a high socio-economic background. Subjects were asked to evaluate the child's performance. Supportive of the predictions, subjects in the former group judged the target's performance as being poorer than did subjects in the latter.

Snyder and Uranowitz (1978) obtained further evidence for the fact that stereotypic beliefs may bias recall in a judgmental context which was apparently similar to the preceding one, in terms of emotional relevance and social value-dimensions. In that study, subjects were presented with a narrative about several aspects of the life of a young woman. In a second experimental session, subjects in one condition were told that she was a

heterosexual, whereas subjects in another condition were told she was a lesbian. A third group was told nothing about the target's sexual identity. Subjects were then given a multiple-choice questionnaire wich measured the accuracy of recall of several details of the narrative (e.g. incidents of the sexual life of the target-person, her dates, her relationships with her parents, and so on). Results showed that subjects recalled significantly more details which might confirm their expectancies about the sexual life of the target-person than other details. Subjects who had been told nothing did not show such a bias. This result is interesting also to the extent that, contrary to evidence found by Rothbart et al (1979), it showed that a posteriori stereotypic beliefs may influence recall. This particular result is not, however, that definite (cf. Markus & Zajonc, 1984). Yet, in light of our present concerns, the important point relative to the studies we described above is that, like any other beliefs (e.g. Rosenthal & Froede, 1963; Wason & Johnson-Laird, 1972), stereotypes may correspond to strong self-fullfiling prophecies (cf Merton, 1972). However, these findings could be explained in terms of general cognitive processes alone. For instance:

> "Attention is somewhat a two-edged sword. On the one side, it gives the desirable attribute of allowing us to follow the one set of events that may be of interest from among many going on simultaneously (...). But on the other side, attention limits our ability to keep track of all the events that do occur." (Lindsay & Norman, 1977, pp. 285-286).

It might be that the processes uncovered by the preceding studies correspond strictly to a general principle of attention-focusing. Do these processes replicate themselves when perceivers are provided with what is, in principle, socially relevant information? Evidence yields an affirmative answer to this question.

6.1.7 Direct Tests on Stereotyping

6.1.7.1 The Perceptual Autonomy of Judgments about Stereotyped Group Members

Duncan (1976) provided evidence for the fact that the same behavior may be differently interpreted depending on the target's group membership, as defined by means of a social dimension, and on its emotional relevance for subjects.

In that study, White subjects were presented with a videotaped discussion between two individuals. According to the conditions, the discutants were both Black, both White, or, one Black and one White. Subjects were told that the discussion was taking place in a nearby room and was transmitted by an internal television circuit. In the course of the discussion, one of the participants displayed mild physical aggression toward the other. According to the conditions, a White shoved the other White, a Black shoved the other Black, the White shoved the Black, or, the Black shoved the White. Among other dependent measures, Duncan analyzed subjects' ratings on the dispositional versus situational causality of the aggressor's behavior. Results were clear. The Black aggressor's behavior was perceived significantly more in dispositional than in situational terms, whereas the White aggressor's behavior was perceived significantly more in situational than in dispositional terms. More strikingly, the White aggressor was considered as "violent" by 13% of the subjects when he aggressed another White, and, by 17% of the subjects when he aggressed a Black. However, the Black aggressor was perceived as "violent" by 69% of the subjects when he aggressed a Black, and, by 75% when he aggressed a White.

Dienstbier (1972) had White subjects watch an interview transmitted by a television monitor with a distorted image, so that the participants could not be accurately identified as being Black or White. In one condition, subjects were told that the interviewee was a Black, whereas in another condition they were told that he was a White. After viewing the interview, during which the interviewee gave his opinions about a series of issues, subjects were asked to rate the extent to which they felt their opinions similar to the interviewee's. Results showed that, in spite of the fact that the interview was exactly the same, subjects who had been told the interviewee was a White judged his beliefs to be more similar to their own than did subjects who had been told he was a Black.

Word, Zanna and Cooper (1974) showed the potential implications of belief imperviousness for the social justification function of stereotypes. These authors had White subjects interview White or Black confederates in order to select them as teammates to perform a subsequent task. The authors measured

the subjects' nonverbal behavior during the interview, and showed that subjects displayed significantly more immediacy toward the White than toward the Black confederate. In a subsequent study, Word et al (1974) replaced the confederates by naive subjects in the role of interviewees, and had one confederate take the interviewer role. The confederate was instructed to behave similarly to the patterns of behavior found in the previous experiment, for each of two groups of subjects. Results showed that subjects' performances were influenced by the confederate's nonverbal behavior during the interview. Low immediacy yielded poorer performances than did high immediacy.

Results of the above studies might have been due to the expectancy that members of outgroups are dissimilar to cognizers and, as shown in Word et al's (1974) study, also undesirable persons.

6.1.7.2 Beliefs about Belief Similarity

Wilder reported a series of studies supportive of the idea that the simple fact of categorizing subjects into two groups leads them to expect their beliefs to be similar to those of ingroup members and dissimilar from those of outgroup members. Wilder (1980, cited in Wilder, 1981) had his subjects fill in a questionnaire on opinions about art and political issues. Next, subjects were randomly divided into two groups and were provided with information about the answers that ingroup and outgroup members had provided in the questionnaire. After an interferring task, subjects were asked to recall the information they had been provided with. Results showed that subjects were significantly biased toward the recall of beliefs similar to their own as having been presented in association with the ingroup, and beliefs dissimilar to their own as having been presented in association with the outgroup.

Wilder and Allen (1978) divided their subjects into two groups on the basis of an alleged differentiation in terms of painting preferences, and asked them to complete a questionnaire of attitudes toward political and artistic issues, as well as on their opinions about a specific legal dispute. Later on, subjects were provided with information about similarities and dissimilarities between their personal beliefs, and those of ingroup members and of outgroup members. A control group was submitted to the same treatments, but subjects

had not been previously categorized. Subjects were then asked to rate their preferences for each type of information. Results showed that, unlike subjects in the control group, those who had been previously categorized, preferred significantly more informations that showed their similarities with ingroup members and their dissimilarity with outgroup members than vice-versa.

Given that in both studies subjects had been categorized according to a criterion unrelated to the dependent measures, the above studies seem to show that, often, ingroup-outgroup categorizations have little to do with perceptual cues or inductive reasoning. The same conclusion seems to apply to the series of studies described immediately above. On "purely" information-processing grounds, it seems that subjects in those studies strongly disregarded the actual information they were provided with, or that they reconstructed that information so that it might match their prestored beliefs.

The above studies may clarify the reasons why face-to-face interactions between members of different groups may increase, rather than decrease, the strength of prestored stereotypic beliefs. Subjects judged ingroup members (e.g. Whites) more positively than outgroup members, behaved accordingly, and judged beliefs of the former to be more similar to their own than beliefs of the latter. However, these studies do not explain the causes of such cognitive imperviousness. This difficulty was better solved by the studies of Tajfel and colleagues, the current state of whose work may be designated as the social categorization - social identity - social comparison theory.

6.2 SOCIAL CATEGORIZATION, SOCIAL IDENTITY, AND SOCIAL COMPARISON

The social categorization - social identity - social comparison theory (e.g. Tajfel, 1978a, 1981), is a framework for analysing the determinants and the consequences of the categorization of people into groups. In light of this theory, the cognitive representation of a group is a psychosocial phenomenon, which materializes as a cognitive entity derived from a functional relationship between individual and social criteria. In our terms, the social categorization - social identity - social comparison theory views social categories as outcomes of social computing processes. Once social

categorizations are made, they trigger other processes, related to social identity and social comparison (Tajfel, 1978a; Tajfel & Turner, 1979; John Turner, 1975, 1978).

6.2.1 Interindividual and Intergroup Perception

According to Tajfel (1978a; Tajfel & Turner, 1979), social behavior may range along a continuum from interpersonal to intergroup behavior:

> "What is meant by "purely" interpersonal is any social encounter between two or more people in which all the interaction that takes place is determined by the personal relationships between the individuals and by their respective individual characteristics. The "intergroup" extreme is that in which all behaviour of two or more individuals towards each other is determined by their membership in different social groups or categories." (Tajfel, 1978a, p. 41).

Therefore, we might say that, whereas interpersonal behavior involves the perception of features specific to the targets, intergroup behavior implies self- and other-stereotyping. This self-reference component is, according to the social categorization - social identity - social comparison theory, one of the basic components of stereotyping. As Billig (1976) pointed out:

> "...the instances of a social categorisation can identify with their label, whereas the issue of identification does not arise in the case of the non-social category. A social categorisation can be "reflexive" in that it can alter and determine the self-conception of what is categorised." (p.334).

Probably, in categorizing himself/herself as a member in a social category, the perceiver weighs mainly those features he/she infers as being shared by all category members. Brown and Turner (1981) advanced this idea, under the heading of self-stereotyping hypothesis:

> "The self-concept can be conceptualized as a cognitive structure which functions to regulate behaviours under relevant conditions. It comprises two major subsystems: personal identity and social identity. The former refers to self-descriptions in terms of personal or idiosyncratic attributes such as personality, physical and intellectual traits. The latter denotes self-descriptions in terms of social category memberships such as race, class, nationality, sex and so on (...). Different situations "switch on" or make salient different self-conceptions which are used to construe social stimuli and regulate behaviour in an adaptive manner." (p.38).

John Turner (1984) elaborated on this point, and proposed that

> "Self-stereotyping produces the depersonalization of the self, i.e. the perceptual interchangeability or perceptual identity of oneself and others in the same group on relevant dimensions. It is this cognitive re-definition of the self - from unique attributes and individual differences to shared social category memberships and associated stereotypes - that mediates group behaviours." (p.528).

Therefore, the cognitive component of social categorization involves a representation of the self as a undifferentiated item in a category. As Tajfel (1978a) pointed out, this self-stereotyping process is associated with the stereotype-label connotations and the cognizer's emotional investment in it. However, he argued, that process is not enough for a social category to come into existence. It also needs to be recognized as such by other individuals who do not categorize themselves as members in that group. That is, stereotyping depends on the generation of a social consensus about the existence of a given social group:

> "The social aspect of [group membership] resides in the consensus about group membership which is necessary if this membership is to become effective as a determinant of social uniformities (as distinct from individual variability) in social behaviour related to the ingroup and the outgroups. The consensus about "who is who" will be in many cases shared by the group socially categorized in certain ways, and the surrounding groups by which and from which it is perceived as distinct." (Tajfel, 1978a, p.31).

Taken together, the preceding assumptions have two theoretical implications. First, intergroup representations involve exclusively contrasting categories (Smith & Medin, 1981), i.e. an ingroup-outgroup dychotomy rather than several abstraction-levels. Second, group representations seem to correspond to prototype-like representations, since intergroup similarities are irrelevant in intergroup situations (e.g. Ashmore & DelBoca, 1981; Wilder, 1981). However, the components of these prototype-like representations result from an interaction between individual cognitions and motivations, and, normative criteria, rather than from real-world co-occurrences. Third, these representations involve the existence of a social consensus about the category-labels and the value-connotations which define them. Finally, they involve an emotional investment on the part of cognizers.

6.2.2 Social Identity and Representing Worlds

Social categorization has, obviously, a cognitive function. It orders, systematizes and simplifies the perceiver's social environment. But the fact that it entails a self-positioning in terms of group membership within the value-dimensions provided by society, also leads individuals to attempt to maintain, to protect, or to enhance a positive self-image as group members. The individual's self-image as a group member refers to his/her social identity. Social identity determines the place the individual perceives to be his/hers within his/her representation of his/her social entourage:

> "Any individual defines himself as well as others in terms of his location within a system of social categories - specifically social group memberships - and social identity may be understood as his definition of his own position within such a system." (John Turner, 1975, p.7).

Thus we might say that the cognitive component of social identity refers to a representing world whose object elements are social groups and the cognizer himself as a member in one or in several of those groups. But the relational elements of such a representing world seem to be value-laden. That is, relationships among the representing objects are determined by their respective value connotations:

> "Social identity is defined as that part of the individuals' self-concept which derives from their knowledge of their membership of a social group (or groups) together with the value and emotional significance of that membership. In conditions in which social interactions are determined to a large extent by individuals' reciprocal group memberships, positive social identity can be achieved (...) through the creation of favorable comparisons with the outgroup for which the subjects use the dimensions of comparison which are available to them (...)." (Tajfel, 1982b, p.12).

6.2.2.1 Social Mobility and Social Change

Therefore, we might say that a representing world which defines the individual's social identity implies the existence of a continuous feedback between the representation itself and its social concomitants (e.g. Billig, 1976; Tajfel & Turner, 1979). Such a feedback means that, on the one hand, the social world influences the representing world, namely, by providing the

cognizer with value-dimensions according to which he/she organizes his/her categories.

On the other hand, the fact that the individual may attempt to maintain or to change that organization, involves a direct intervention upon the social world. According to Tajfel and Turner (1979), an individual will attempt to remain a member in a group or to gain membership in new groups, if these groups are judged susceptible of providing a positive contribution for the individual's identity. Otherwise, the individual will attempt to leave the group in which he/she is a member, or, will not be motivated to ingress into such a group. However, this may be subject to two constraints: one, is that it may not be objectively possible to leave one group in order to enter a new one; the other is that leaving a group may conflict with other superordinate values which are judged as contributing positively to the individual's image (e.g. loyalty). Therefore, the individual's actions upon the social world may be guided by an individualistic strategy of social mobility, or by a collective strategy of social change (Tajfel, 1978a; Tajfel & Turner, 1979). In the remainder of this work we focus primarily on the latter strategy.

6.2.3 Social Comparison and Ingroup Favoritism

An important process involved in social categorization is social comparison. As Tajfel (1978a) argued, a positive social identity is always comparative. In cognitive terms, we might say that social identity involves a contrasting between the connotations attached to two category-labels referring to the individual's ingroup and to an outgroup. This cognitive process may materialize itself in several forms, which may be subsumed under the heading of ingroup favoritism. Ingroup favoritism may be understood as embodying the dynamic explanation of many of the processes uncovered by research we summarized throughout this work about the biased perception of outgroup members. It has been defined as

> "...any tendency to favour ingroup over outgroup members on perceptual, attitudinal or behavioural dimensions. It includes partisan intergroup attitudes, sociometric preferences for the ingroup, discriminatory intergroup behaviour and more favourable evaluations of the products and performances of the ingroup than the outgroup." (John Turner, 1981, p.66).

Ingroup favoritism is any strategy to achieve a positive social identity. As we shall later argue, sometimes it may even take the appearence of outgroup favoritism.

6.2.3.1 The Achievement of Positive Social Identity

In order to achieve a positive social identity, individuals may apply to several resources, such as the choice of advantageous comparison dimensions, the choice of alternative outgroups allowing favorable comparisons, the change in connotations assigned to the ingroup's or outgroup's attributes, the actual change of ingroup and/or outgroup attributes (cf Lemaine, 1974; Rijsman, 1981; Tajfel & Turner, 1979; Taylor & McKirnan, 1984). Research inspired by the social categorization - social identity - social comparison theory has yielded strong evidence, namely for the last alternative (cf Rijsman, 1981), although it is not limited to it.

6.2.3.2 The Minimal Group Paradigm

Tajfel and colleagues (e.g. Tajfel, Flament, Billig & Bundy, 1971) developed a procedure to study the minimal conditions necessary for inducing intergroup differentiation strategies, both cognitive and behavioral, and which is currently designated as the minimal group paradigm. It is called "minimal" because subjects have virtually no links to each other but the fact of being arbitrarily categorized into ingroup and outgroup on the basis of a trivial criterion (e.g. painting preferences) or even an explicitly random one (e.g. the toss of a coin). That is, "common-fate", interindividual similarity, or, face-to-face contact factors are reduced to a minimal level. Subjects do not know who are their ingroupers and outgroupers, they have no previous common goals or conflicts of interest, and, in principle, they do not belong to previously differentiated social categories.

Following the ingroup-outgroup categorization, subjects are asked to award money to ingroupers and to outgroupers, or to evaluate them on the basis of attitudes, personality traits or beliefs. This task has no objective relationship to the previous categorization. In money allocation tasks, the typical dependent measure of the minimal group paradigm, subjects award money

to anonymous others, and all the information they are provided with is about their group memberships. In most experiments the subjects do not make self-allocations (cf John Turner [1978] for an exception) and, the money they allocate to others has no implications for the money they are awarded by the other subjects. Money allocations are made by means of a modified version of PD games (full accounts of the several modalities of this version can be found in Tajfel [1978a] and John Turner [1978]). Among other possibilities, subjects may chose: a "fair" strategy (i.e. to allocate the same amount of money to ingroup and outgroup members); a "maximum joint profit" strategy (i.e. to allocate the greatest amount possible to ingroupers and outgroupers); a "maximum ingroup profit" strategy (i.e. to allocate the greatest amount possible to ingroupers, regardless of outgroupers); or, a "maximum difference" strategy (i.e. the greatest possible positive difference between the money awarded to ingroupers and the money awarded to outgroupers, even if, in this case ingroupers win less money than they would if another strategy were chosen).

The general pattern of results yielded by using the minimal group paradigm is that subjects consistently prefer the maximum difference strategy, even if they might award a maximum amount of money to their "fellow"-subjects at the experimenters' costs or, at least, apply to a socially desirable strategy of fairness (e.g. Allen & Wilder, 1975; Billig & Tajfel, 1973; Brewer & Silver, 1978; Tajfel et al, 1971; cf Brewer, 1979b; Brewer & Kramer, 1985; Tajfel, 1982a, 1982b; John Turner, 1981, for reviews).

This result seems to be due to the mere categorization of subjects into two groups rather than to other interferring factors. For instance, Tajfel and Billig (1974) attempted to determine whether ingroup favoritism was due to a state of anxiety which might be generated by experimental situation, by comparing the responses of subjects familiar with the experimental setting to those provided by fresh subjects. Their reasoning was that if ingroup favoritism were determined by an anxious state generated by the experimental situation, then, the former subjects would show less discriminatory behavior than the latter. But, results showed precisely the reverse phenomenon.

In the same vein, Billig (1973) attempted to determine whether subjects' behavior was a function of experimental demands, rather than of an actual strive toward positive ingroup differentiation. Before being run, subjects were allowed to discuss the experiment with others who had already been run. The underlying reasoning being that if experimental demands were salient, the latter were expected to transmit their beliefs about that fact to the former. Therefore, these subjects would show an increased pattern of ingroup favoritism. However, new subjects showed less ingroup favoritism than did those who had already been run. Although these results may also be interpreted as having been caused by new subjects' reactance toward experimental demands, the important point is that ingroup favoritism arose even in this case.

The independence of ingroup favoritism from experimental contexts was even more clearly demonstrated by St Claire and Turner (1982). These authors ran their subjects in three conditions. One control group was submitted to the classical ingroup-outgroup categorization. Another group was asked to observe subjects in the first one, and to predict the outcomes of their money allocations. A third group received obvious hints that the experimenter expected them to be biased toward the ingroup. The underlying idea was that, if subjects behaved in conformity with experimental demands, those in the second condition would be able to predict the outcomes of money allocations made by subjects in the first one. Concomitantly, subjects in the third group would show an exaggerated pattern of ingroup favoritism. Results showed no significant differences on ingroup favoritism between the first and the third group. Further, subjects in the second group were significantly more fair than subjects in the others.

Therefore, it seems that once people categorize themselves (or commit themselves to an external categorization) in terms of ingroups and outgroups, they consistently attempt to enhance the position of their own group as

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[23] Some authors have showed that this phenomenon may be due exclusively to a strive to enhance self-differentiation (e.g. Rijsman, 1981; John Turner, 1978). This fact has no direct implications for our discussion here, since it only shows that group memberships may be a social strategy to attain positive self-esteem. Like Tajfel (e.g. 1978a), we believe that such group memberships and their cognitive referents are determined by social norms and values and that, as a result, even in that case, the maintenance or

compared to the outgroup.[23]

6.2.4 Derivations of Ingroup Favoritism

6.2.4.1 Outgroup Favoritism

As the reader might have noticed, the results of studies on ingroup favoritism seem to yield a valid process explanation to the phenomenon of ethnocentrism as it was described by Sumner (1906; cf Chapter 3). Although, as Tajfel (1982a; cf also Brewer, 1979a) argued, ingroup favoritism cannot be explained in terms of conflicts for "scarce resources" or "ethnic prejudice", it seems acceptable to explain ethnocentrism as a manifestation of the wider process of ingroup favoritism. But, in the same way that ethnocentrism does not seem to be a universal phenomenon (cf LeVine & Campbell, 1972), ingroup favoritism might, as well, emerge only in some situations. This is the point of view of authors like Park and Rothbart (1982).

Park and Rothbart (1982) presented male and female subjects with a series of personality/attitude descriptors varying along previously determined "stereotypic" (feminine - neuter - masculine) and "desirability" dimensions (desirable - neuter - undesirable). Subjects were asked to estimate the probability of those traits to be endorsed by males and by females. Results showed that males assigned more stereotypic and fewer counterstereotypic traits to females than to males and that, conversely, females assigned more stereotypic and fewer counterstereotypic traits to males than to females. More interestingly, ingroup-outgroup attributions showed no significant effects of desirability, or, in other words, did not convey ingroup biases.[24]

Park and Rothbart (1982) consistently found no ingroup favoritism in two other experiments. But similar results had already been found by studies inspired by the social categorization - social identity - social comparison theory. Tajfel (1978a) and Van Knippenberg (1984) reviewed a series of

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enhancement of positive self-esteem is mediated by social computing processes.

[24] It is interesting to note that the fact that less counterstereotypic attributes were assigned to ingroupers than to outgroupers is strongly supportive of the ingroup familiarity hypothesis (cf above). Nevertheless, the fact that no differences in desirability were found between ingroup and outgroup judgments, might indicate that familiarity has effects only under conditions which do not involve emotional investment on the part of the subjects.

researches which showed similar effects, and, Milner (1981) discussed early research on this phenomenon with respect to racial attitudes in children. Other authors, like Lambert, Hodgson, Garner and Fillenbaum (1960) showed that French Canadian subjects judged English Canadian speakers in light of more positive physical and psychological features than French Canadian speakers, despite of the fact that the two groups evolved in a context of social rivalry.

6.2.4.2 "Hidden" Ingroup Favoritism Strategies

Van Knippenberg (1978, 1984) consistently argued that evidence for lack of ingroup favoritism may conceal more subtle biases favoring the ingroup (cf also Turner, Brown & Tajfel, 1979). These subtleties may be related to differential ingroup-outgroup status, to "hidden" strategies of positive differentiation, etc. For instance Mummendey and Schreiber (1984) recently showed that ingroup favoritism arises mainly for dimensions which are relevant for the ingroup's positive social discrimination, and that outgroup favoritism may emerge for judgmental dimensions subjects know to be relevant ones for the outgroup but considered as irrelevant for the ingroup. In a field study carried out in West Germany, these authors had members of two political parties, the Grunen and the SPD, rate a list of attributes aimed at describing each of the two parties. Among other questions, subjects were asked to report the importance of each attribute as a characteristic of the Grünen and of the SPD. Further, subjects were asked to give their personal evaluations on each attribute as positive, neutral or negative. Next, attributes were divided into 4 categories, according to their rated importance for the subjects' ingroup and outgroup (high/high high/low low/high low/low). The evaluations made by members of the two groups according to these categories were then computed. Results showed that ingroup favoritism emerged in attributes with high importance for the ingroup, despite their importance for the outgroup. In addition, outgroup favoritism emerged for attributes irrelevant for the ingroup but considered as relevant for the outgroup. These results seem to indicate that

> "...an equally good rating of an in- and out-group on different dimensions reveals itself to be only a disguised form of ingroup favoritism (...); the outgroup is judged superior to the ingroup on second-class dimensions - that is, dimensions of supposedly inferior quality and of perceived minor importance." (Mummendey & Schreiber, 1984, p.364).

These results and the preceding comment seem to show that ingroup favoritism is still a domain open to additional research. That research should focus on the derivations of ingroup favoritism under conditions in which it emerges in "secondary" form. It might be possible to assume, then, that it is indeed, a ubiquitous phenomenon involved in social categorization.

6.3 THE BLACK SHEEP EFFECT: AN HYPOTHETICAL DERIVATION OF INGROUP FAVORITISM

The ingroup favoritism hypothesis presupposes that ingroup members are generally judged as more positive and more deserving than outgroup members. This fact seems to be due to a striving toward positive social identity (e.g Tajfel, 1969a, 1978a; Tajfel & Turner, 1979; John Turner, 1975).

Furthermore, the ingroup favoritism hypothesis presupposes that the strive to achieve or to maintain positive social identity occurs in intergroup comparison settings. However, as we pointed out above, it is possible that individuals stereotype their ingroups without needing a concrete contrasting category. Indeed, it might be that positive social identity be determined by means of comparisons of ingroup attributes to normative ingroup standards, for instance. This is one of the reasons which lead us to accept Brown and Turner's (1981) point of view according to which the distinction between interpersonal and intergroup settings should be more accurately defined in terms of an interpersonal-group dimension.

In addition, the ingroup favoritism hypothesis and, namely, its social comparison component, presupposes that, when an individual's social identity is unsatisfactory, he/she attempts to leave the ingroup. Rijsman (1981) obtained quite clear support for this assumption in a series of experiments. However, it may also be that individuals cannot leave the group, and therefore engage in social change strategies (Tajfel, 1978a).

These seem to be straightforward, empirically verifiable, and empirically supported predictions. However, the ingroup favoritism hypothesis could also

explain a complementary phenomenon which, as far as we know, received no attention from researchers: it seems reasonable to suppose that although a group provides individuals with a positive social identity, as compared with other categories at the same abstraction level, some of its instances may contribute negatively toward that group's positive differentiation in light of its normative standards. It seems easy to find illustrations of this fact in daily life, ranging from the classical case of the soccer player who is severely whistled at by his teams' supporters, to the political dissident who leaves the party's ranks in order to join an opposing one. It is also true of the rock star who, after having been considered a model for hard rockers, suddenly embarks on a "disco-sound" career, of the psychoanalytic researcher who does not bother using behaviorist techniques, of the male-driver who makes mistakes "identical" to those of women-drivers, and so on. Many other real-life examples could be found for this assumption. This fact is probably due to the acceptance of a wide value proposition according to which, often, one should conform to the patterns of the ingroup, since those patterns "are, by definition", the best ones. It could also be due to another value proposition according to which "good, intelligent people have reliable attitudes". It could be due to both or to a still different one. In anycase, soccer team supporters, political co-religionists, hard-rockers, psychoanalysts (or non-psychoanalysts), or male-drivers involved in those kinds of situations, generally seem to judge those "black sheep" more negatively than they would, had the "black sheep" been irrelevant to their group identification, not to mention the joy they would have felt had he/she belonged to a rival outgroup.

Phenomena of this kind, or that correlative have been recognized by some authors in social psychology (e.g Deconchy, 1980; Schachter, 1951; Sherif & Sherif, 1969; cf also Levine & Pavelchak, 1984; Moreland & Levine, 1982). However, this phenomenon has been studied directly with respect to the dynamics of small groups or of social conformity and, in any case, never within the field of the social categorization - social identity - social comparison theory. In terms of this theory, one might suppose that, often, ingroup members cannot exclude other "undesirable" ingroupers from their

membership category, for instance, because they present some relevant attribute which prevents such an exclusion. In other words, such cases might be considered as the reverse of social change processes, i.e., the impossibility of excluding others rather than oneself from a group.

One possible strategy in such cases, we hypothesize, is to categorize undesirable ingroup members at a low point of the relevant value-dimension according to which their contribution to the ingroup's social identity is judged to be negative. The construction of such a subset is not determined by a confrontation with new information - although this process might participate in the categorization - but rather by the fact that such information conveys a negative connotation for the ingroup as a whole. More precisely, we propose that in conditions where they cannot be excluded from the group, undesirable ingroup members will be more negatively evaluated than "equally" undesirable outgroup members, even though the outgroup as a whole is evaluated less positively than the ingroup as a whole. This process, which might take the appearence of an outgroup bias, is, indeed, a manifestation of ingroup chauvinism and, therefore, of an emotional identification with the ingroup. Complementarily, we propose that desirable ingroup members will be judged more positively than "equally" desirable outgroup members. This is a restatement of the ingroup favoritism hypothesis. The polarization of ingroup judgments as compared to outgroup judgments, both for the positive and the negative sides of a relevant value dimension will be designated, from now on, as the black sheep effect.

6.3.1 Ingroup or Outgroup Polarization?

Now, we chose to talk about the complexity-extremity hypothesis as it was proposed by Linville and Jones (1980), and, Linville (1982a, 1982b), last of all, because it predicts a pattern of results completely opposite to the black sheep effect. The prediction of the complexity-extremity hypothesis is that outgroup judgments, both favorable and unfavorable, are more extreme than ingroup judgments. Further, whereas our explanation for the black sheep effect is a cognitive-emotional-normative one, the explanation of the complexity-extremity effect is based on purely cognitive assumptions. Equally

important is the fact that the complexity-extremity hypothesis is based on a parsimonious and straightforward theoretical formulation. These facts led us to pay close attention to the work done under the heading of this hypothesis.

6.4 COGNITIVE COMPLEXITY AND JUDGMENTAL EXTREMITY

As did Taylor (1981) and Rothbart (1981), Linville and Jones (1980) argued that repeated contact with a stimulus domain (be it a social group or anything else) leads to the complexification of the cognitive structures representing that stimulus. Cognitive complexification should, in turn, lessen subjects' proneness to take extreme positions on a subjective, evaluative scale. The important implication of this fact for group perception would be that lack of familiarity with outgroup members leads to higher polarizations of outgroup judgments than of ingroup judgments, both on the favorable and the unfavorable sides of an evaluative scale. Linville (1982b) conceptualized the role of cognitive complexity of representations about groups in judgments about particular targets in the following manner:

> "Consider, for example, perceptions concerning older males. A person whose representation of this domain is complex might independently encode or use activeness or friendliness. A person whose representation is simple might view these attributes as highly correlated, collapsing them into a single attribute (e.g. sociability). (...)Letting H denote high and L denote low on an attribute, the simple person perceives two types of older males (those who are H and those who are L on sociability), whereas the complex person perceives four types (those who are HH, HL, LH or LL on activeness and friendliness, respectively (...)). Then the simple person's overall evaluations of older males will be as follows: V(H)=1 and V(L)=0, where V is the evaluation of the older male. The complex person's evaluation of older males will be as follows: V(HH)=1, V(HL)=.5, V(LH)=.5, and V(LL)=0. (...) Two conclusions follow from the assumptions of this example. First, on the average, simple and complex perceivers will not differ in their favorability toward randomly selected older males. That is, the expected value of the evaluations of the simple and complex perceivers is the same. For the simple perceiver, there is a 50% chance that a randomly selected older male will be either H or L. (...). For the complex perceiver, there is a 25% chance that a randomly selected older male will fall into each of the categories HH, HL, LH and LL. (...) Therefore, on the average the simple and complex perceivers are equally favorable toward older males, though not necessarily toward a given older male. The second conclusion that follows from the assumptions outlined above is that a simple perceiver will be more extreme in his overall evaluations than a complex perceiver. That is, the variance of the overall evaluations of the simple perceiver will be greater than that of the complex person." (p. 197).[25]

[25] This example would be developed rather differently according to the black sheep hypothesis. Consider that sociability was a relevant dimension for

Linville (1980) and Linville and Jones (1980) reported a number of studies designed to test this assumption.

6.4.1 Empirical Evidence for the Complexity-Extremity Hypothesis

Linville and Jones (1980, Expt. 3) asked White male subjects to perform sorting tasks of personality traits. Subjects were instructed either to think about White males, or to think about Black males, while performing the sorting tasks. It was predicted and found that, since Whites have more contact with other Whites than with Blacks, subjects should form more trait-clusters in the White than in the Black condition. Similar results were obtained by asking young male subjects to perform trait-sortings while thinking about either college-aged males or about males in their late 60s and 70s (Linville, 1982b, Expt. 1). Results showed that young males formed significantly more clusters for young males than for older males.

Results of these two experiments supported the hypothesis that people possess more complex cognitive representations about their groups than about outgroups. However, no measures were taken on the assumed causal link between complexity and extremity. Other studies analyzed that relationship.

Linville and Jones (1980, Expt. 4) provided subjects with two application forms for Law School. Race and gender of applicants were unknown by subjects. Complexity was manipulated by asking subjects to evaluate the applications either according to 6 evaluative criteria or according to only two evaluative criteria. Favorability of applications was also varied. In one condition subjects read a "weak" application whereas in another one they read a "strong" application. The hypothesis was that subjects who were provided with 6 evaluative criteria would be less extreme in their evaluations of the "weak" as well as the "strong" applicant than subjects who were provided with only

the definition of social identity. In such case, an ingroup member who were described as sociable should be judged as more active and friendly than an outgroup member to whom the same label was assigned. Conversely, an ingroup member who were described as asociable should be judged as less active and friendly than an outgroup member who were also judged as asociable. The interpretation of this finding would be that whereas the former contributes positively toward ingroup positive differentiation, and therefore, he/she would be judged in light of an ingroup bias, the latter would contribute negatively for such differentiation, and therefore should be "segregated" from the group. To be coherent then, one should expect the two traits in terms of which those targets were judged, to be more strongly correlated in judgments about ingroup targets than in judgments about outgroup targets.

two criteria. Results confirmed this hypothesis, with a significant Information Favorability x Complexity interaction. Linville (1982b, Expt. 3) obtained similar results. Subjects were asked to taste chocolate-chip cookies and were told to evaluate the cookies either according to 6 criteria or according to two criteria. Results showed that two-criteria evaluations were significantly more extreme than 6 criteria evaluations.

Results of these two experiments suggest that the extremity of evaluations is negatively correlated with the number of dimensions according to which they are made. However, the relationship between cognitive complexity and judgmental extremity was not, once again, directly tested. Furthermore, judgmental contexts implying group judgments were absent from the preceding experiments. In other studies, the authors analyzed the effect of group membership on judgmental extremity.

Linville and Jones (1980, Expt. 1) had White male and female subjects rate three successful Law School applications. The first two applications were "fillers" aimed to disguise the actual purpose of the study, and contained no information about the applicants' race or gender. The third application was manipulated according to the race and gender of the applicant. Although subjects were asked to judge the three applications, judgments about the third one were the only to be analysed. It was predicted and found that ingroup (White or same sex) applicants would be evaluated less extremely than outgroup applicants. The Black applicant was significantly more positively evaluated than the White on Motivation and Liking. In similarity to the "race" conditions, a significant interaction was found for sex of applicant and sex of subject, with opposite sex applicants being more positively evaluated than same sex applicants.

In another study, Linville and Jones (1980, Expt. 2) had subjects rate three applications. Again, the third applicant's sex and race were varied. This application was either a strong or a weak one. Results showed that the White strong applicant was evaluated less positively than the Black strong applicant, and that the White weak applicant was evaluated less negatively than the Black weak applicant. However, the Race x Strength of Application interaction only approached significance $F(4,173) = 1.87$, $p < .12$). The same

pattern of results was obtained for the manipulation of gender, but this time with a significant interaction of sex of subject, sex of applicant and strength of application with opposite sex targets being more positively or more negatively evaluated than same-sex targets.

Results of the three above experiments seem to suggest that ingroups are generally less extremely evaluated than outgroups, despite the information (favorable vs. unfavorable) that is provided about them. However, it is not entirely clear that this effect was due to differential levels of complexity of ingroup and outgroup representations, in that, once again, the relationship between the two variables was not directly measured.

Linville (1982b, Expt. 2) attempted to provide a direct check of that relationship. In that study, young males sorted personality traits while thinking about young males or older males. The number of clusters made by each subject in the sorting-task was computed. Three weeks later, the same subjects were asked to evaluate a young male or an old male who was presented either favorably or unfavorably. Among other results, a negative correlation was found between judgmental extremity and the number of trait-clusters initially constructed by subjects ($r=-0.65$, $p<.01$, $n=15$). To put it another way, the more complex the representation of a social category (as measured by the number of clusters previously formed by the subjects), the less polarized the subsequent judgments about an instance of that category. Further, a significant interaction was found for Target's Age x Information Favorability, with the old target being evaluated significantly more favorably than the young target. Although there was no significant difference between the evaluations of young unfavorable and old unfavorable targets (cf Figure 6), the important result for our concerns here is that judgments were the opposite to what should be expected in light of the ingroup favoritism hypothesis. However, it is worth noting that these results provided only partial support for the complexity-extremity hypothesis, because negative young and old targets were equally negatively evaluated. However the ingroup favoritism hypothesis was also apparently disconfirmed, because favorable aged targets were judged more positively than favorable young targets (a partial replication of this experiment is reported in Chapter 8).

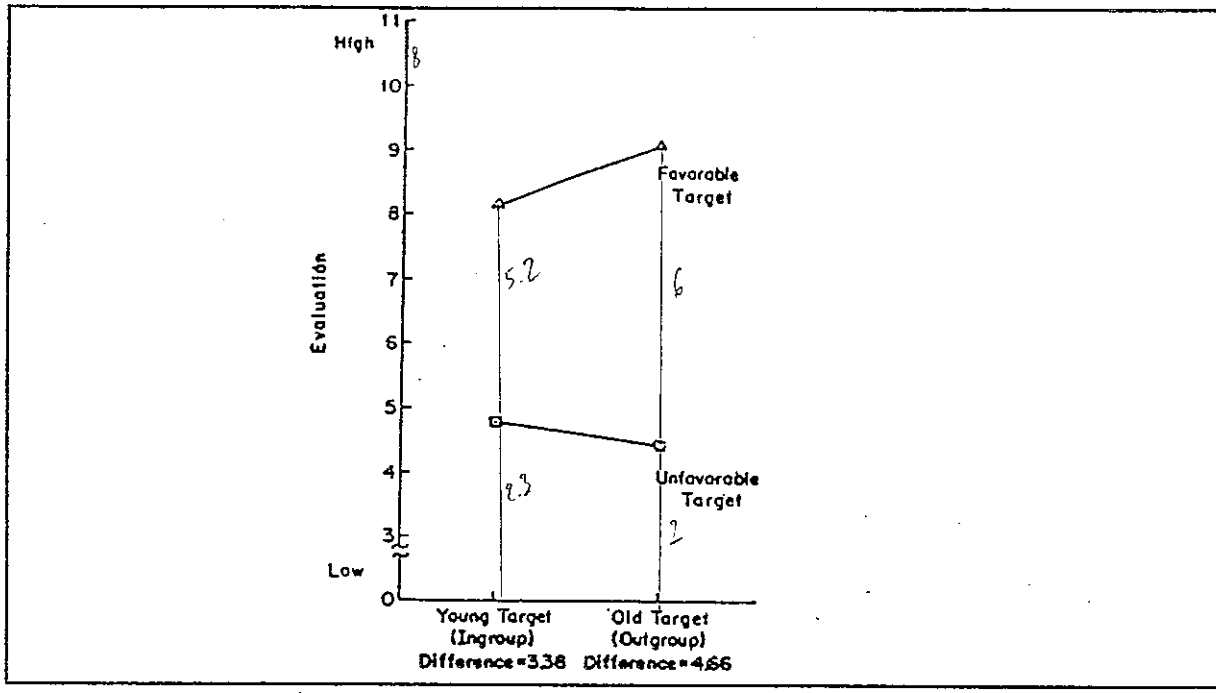

FIGURE 6 - Judgmental ~~Polarization~~ Extremity as a Function of Target's Age and Target's Likability. From Linville, P. (1982b). The complexity-extremity effect and age-based stereotyping. Journal of Personality and social Psychology, 42, 193-211. p.203.

6.4.2 Cognitive Complexity and Judgmental Extremity: Intergroup or Interpersonal Settings?

The general conclusion to be drawn from the above research is that judgmental biases in intergroup situations may be bi-directional rather than exclusively uni-directional. This is inconsistent with the ingroup favoritism hypothesis to the extent it predicts a judgmental uni-directionality. Further, the complexity-extremity hypothesis is at odds with the black sheep hypothesis, because although both agree according to the bi-directionality of intergroup judgments, they predict opposite bi-directionalities: whereas the complexity-extremity hypothesis predicts that outgroup members may be judged more negatively, as well as more positively than ingroup members, the black sheep hypothesis predicts that outgroup members may be judged less positively and less negatively than ingroup members, when the value-dimension upon which the judgments are made is relevant for the ingroup's positive image and when negative instances cannot be cognitively reinterpreted as non-group members.

As a result, the two hypotheses conflict with respect to the explanations they provide for the bi-directionality of evaluations. Whereas the former assigns the polarization of positive and negative judgments toward outgroup members to the differential complexity of knowledge structures, the latter assigns the polarization of positive and negative judgments toward ingroup members to a striving toward the maintenance of the positive social identity of their ingroup as a whole.

6.4.2.1 The Dilution Effect

In our opinion, one must consider an alternative explanation for the results obtained by research on the complexity-extremity hypothesis. This explanation bears on the so-called "dilution effect" (Nisbett, Zukier & Lemley, 1981) and on Tajfel's (1978a) postulate about the existence of a continuum between interpersonal and intergroup behavior and judgment (cf above). The main question is, to what extent are the results obtained by Linville and Jones (1980) and by Linville (1982b) susceptible of representing features of group judgmental settings. Indeed, one must keep in mind the fact that the complexity-extremity hypothesis paradigm involves the presentation of highly individualized information about the judgmental targets. Furthermore, recall that in experiments involving race or gender manipulations, subjects were always presented with "fillers" aimed to moderate their presumed tendency to judge targets in stereotyped terms (cf Linville & Jones, 1980).

These preceding aspects are important ones, because, in light of what we pointed out above with respect to the existence of an interpersonal-group continuum of judgment, they lead us to suppose that subjects' judgments are to be positioned nearer the interpersonal than the group pole. If this is true, then one should consider the complexity-extremity hypothesis paradigm as an interpersonal rather than intergroup perception model, although, probably, some stereotypic expectancies influenced subjects' evaluations.

Empirical evidence is available in support of the above assumption. For instance, Nisbett et al (1981) presented their subjects with a description of two target-persons defined as instances of a stereotype-category (Engineering or Humanities students). In one condition, subjects were presented with a

description which conveyed information typical ("diagnostic") of the stereotype, whereas in another condition, "non-diagnostic" (i.e. stereotype irrelevant) information was added to the description. Subjects were asked to predict the probability that the targets perform according to stereotype-based expectancies. Results showed that when subjects were provided with only diagnostic information their predictions were significantly more similar to those made by subjects in a control-group who had not been presented with the descriptions but only with category-labels, than when non-diagnostic information was added to the descriptions. This result was confirmed by other experiments reported by these and by other authors (e.g. Darley & Gross, 1983; Leyens, Desquay, Donner and Maric, 1985; Locksley, Borgida, Brekke and Hepburn, 1980).

The implication of this phenomenon for the complexity-extremity hypothesis research is that, if, occasionally, subjects did not perceive the judgmental situation as positioned on the group pole of the interpersonal-group dimension, then it might be that their judgments were "diluted" with respect to their stereotypic beliefs. Further, it is not beyond question that, more than non-diagnostic, the information subjects were provided with was, counter-diagnostic. That is, it might have induced some discrepancy between subjects' stereotypic beliefs about the targets' categories and the information which characterized those targets (this is a problem we discuss in larger detail later in this work).

To summarize, the dilution effect and the interpersonal-intergroup continuum assumptions might explain the results obtained by Linville and by Linville and Jones without necessarily applying to assumptions about complexity and extremity.

6.5 CONCLUSIONS

In light of the preceding assumptions, it is worthwhile to note that the differences between the postulates of the social categorization - social identity - social comparison theory and the postulates of the developments of the "perception of outgroup attributes" are largely a matter of focus. As Van Knippenberg (1984) pointed out, the main difference between the two

orientations is not whether or not they involve motivational assumptions, because at one time or another all models must postulate a motivational basis for cognitive processes. The difference he argued, lies in the fact that, whereas "pure" cognitive models restrain the role of motivations to a need for the simplication of social information, the social categorization - social identity - social comparison theory considers motivation as a factor which bears on the gain of social "rewards" for the self on the basis of social categorizations (e.g. power, status, or self-esteem).

An identical point can be made with respect to the consensual aspects of social categorizations. The difference between the two orientations is that whereas the "pure" cognitive orientation assigns social consensus to the fact that all individuals perceive properties in human objects in a similar way, thus constructing similar "social" categories, the social categorization - social identity - social comparison theory argues that many individuals perceive the same cues because they are influenced by social criteria which make those cues become distinctive.

It is clear that these "slight" differences have enormous implications. One, is that the "pure" cognitive approach gives no place to social creativity (cf Tajfel & Turner, 1979) in social categorizations: it seems intuitively obvious that in many, if not all social situations, the representations of groups and the groups themselves change (e.g. Di Giacomo, 1981; Tajfel, 1978a), depending on changes in society, as well as on more momentary social phenomena. If stereotypes are, indeed, due to a mechanism of psychosocial correspondence, more than simplifying information coming from the cognizer's human environment, then they should function as daily-life "theories" for the explanation and justification of a given current state of intergroup relations. In other words, their main function should be to preserve the social values cognizers subscribe to (e.g. Tajfel, 1978a, 1978d). This is the traditional assumption of the social categorization - social identity - social comparison theory. Actually, the social categorization - social identity - social comparison theory clarified many of the features involved in intergroup perception situations, namely the pervasiveness of ingroup biases, even in situations where the most rational strategy would be intergroup cooperation.

However, little attention has been paid to situations where ingroup members or outgroup members are explicitly described favorably or unfavorably. To our knowledge, such a problem was introduced in the study of intergroup perception by the proponents of the complexity-extremity hypothesis. Given the role we assigned to value-dimensions and self-reference criteria within the process of social categorization, we hypothesized that the black sheep effect does not bear exclusively on intergroup relations, but also that it occurs as a means to preserve those social values within ingroups, whenever instances might be judged to be at odds with their achievement in terms of a positive social identity.

VII

ON THE PLASTICITY OF PSYCHOSOCIAL CATEGORIES: AN APPLICATION TO GROUP PERCEPTION

In Chapter 5, we proposed that social categorizations correspond to the assignment of value-laden attributes to group-labels (e.g. Billig, 1976), that these category-labels are positioned along relevant value-dimensions (e.g. Tajfel, 1978a) and that the specific judgmental context may determine changes in the attributes assigned to the category-labels, so that the value-connotation of the categories can be maintained. The fundamental cognitive implication of this assumption is that categories based on psychosocial correspondence are much more plastic than categories based on psychophysical correspondence, because they may change from one situation to another. This fact was recognized by Tajfel (1982a), whose following assumption is the source of the three studies we present here below:

> "Social categorization cannot be considered as a "static" variable which somehow leads people to behave in a constant and uniform manner toward those who are classified as "outsiders". The conditions of interaction between groups, and the relevance of a group membership to an individual may vary from situation to situation, from one period of time to another, and from one outgroup to another. The individual and social significance of the membership of a group (...) vary continuously. Therefore, an individual's affiliation with a group and the functional relevance of social comparisons with other groups, or even with the same group from one situation to another, enter into a continuously changing dynamic relationship." (p.239)

The studies presented in this Chapter draw on these general postulates. Study 1 was aimed simply at determining a relevant ingroup-outgroup dimension. Subjects were asked to make sociometric choices and similarity judgments among a series of ethnic-national categories. The most rejected and the least similar to the subjects' assumed ingroup category was chosen as the relevant outgroup.

Study 2 was aimed at testing the hypothesis that the assignment of attributes to an ingroup and an outgroup changes with situations, and that those changes are mainly connotative. Subjects were asked to list typical

characteristics to an ingroup category-label and to an outgroup category-label in different judgmental contexts. The variation in judgmental contexts had no immediate implications with respect to the target-categories. This variation was expected to induce differential relevances of subjects' ingroup identification, and these differential relevances would emerge in terms of differences in the "typical" features assigned to the target-categories. These differences were expected to yield differential levels of likability of the target-categories as a function of context variations.

Study 3 tested the hypothesis that the black sheep effect will emerge only for normative standards relevant to the ingroup, and that when these dimensions are not specific to it, that effect does not emerge. This hypothesis was partially based on the findings reported by Mummendey and Schreiber (1984; cf Chapter 6). Recall that, in that study ingroup favoritism was found to emerge in value-dimensions relevant for the ingroup's social identity. When those dimensions were irrelevant, a form of "outgroup favoritism" arose.

Rijsman (1981) proposed what could be considered as an explanation for the phenomena we attempted to check for in Studies 2 and 3. According to this author, social comparison processes imply, first, that individuals must consider themselves and the targets of comparison as members of a common superordinate category. This superset yields the basis for comparisons along a common value-dimension upon which the individual positions himself/herself and the targets of comparison (cf also Suls, 1977). Rijsman (1981) presented his idea as follows:

> "The Self and the Other are completely identical in terms of the superordinate person-set which links them together, but completely discrepant in terms of their being two different elements of the same set (...) The dimension on which the discrepancy is projected, is by definition, a subjective value dimension, because the different points on it are Self-involving." (p.8).

Therefore, a process of social comparison involves a categorization of the actors within the same superordinate category-label, and the generation of two contrasting categories within that superset. This assumption, which focuses on interpersonal comparison, may be extended to intergroup situations, if the

notions of Self and Other, are replaced by their social identity components of Ingroup and Outgroup.

However, such a parallel would be only analogical if the nature of the comparison dimensions were left unspecified in social terms. Therefore, we reasoned, an intergroup social comparison process should accentuate the comparison-groups' normative standards rather than an interpersonal value-dimension (although, as we argued in Chapter 5, even this dimension should correspond to a socially determined value-system). So, we assumed that group perception situations imply that ingroup and outgroup targets be judged as holding to some common normative standard. Such common normative standards should define a superordinate category, a superset, which assimilates both ingroup and outgroup categories. In other words, a relevant ingroup-outgroup dimension implies that the ingroup and outgroup be subsets of a superordinate ingroup category (Rijsman, 1981), and this assimilation is determined by the presupposition that there exist some normative standards, which are common to both groups. Complementarily, and following Rijsman's (1981) idea, these categories should be perceived as contrasting subsets within that superset. Therefore, they should also be perceived as holding to different subset normative standards, and, in this case, only the normative standards relevant to the ingroup would induce ingroup favoritism. We might also assume that the strength of ingroup identification is a reverse function of the abstraction-level of the ingroup category. Consequently, it was predicted that the black sheep effect will arise for subset normative standards but not for superset normative standards.

7.1 STUDY 1: THE CHOICE OF A RELEVANT INGROUP-OUTGROUP DIMENSION

7.1.1 Method

7.1.1.1 Subjects

35 male and female subjects of Belgian nationality, aged 17 to 23 years old were asked to fill out a questionnaire. Subjects were recruited individually by an interviewer in public and semipublic places on the campus of Louvain-la-Neuve. All subjects were students of the Catholic University of Louvain at Louvain-la-Neuve.

7.1.1.2 The Questionnaire

The questionnaire was composed of only two questions (see Appendix A). The first one, Sociometric Choices, read as follows:

> "At LLN, most communitary appartments have 5 rooms. If next year you had to share one of those appartments with 4 other students coming, each one from a different region of the world, other than yours, which nationalities would you chose, and, which nationalities would you reject?"

Subjects were asked to rank their preferences and rejections in decreasing order. Responses were free. The second question, Intergroup Similarity, read as follows:

> "Could you compare Belgian students in general with students from each one of the following regions of the world?"

Responses were given on a 7-point scale ranging from "quite similar"(=7) to "quite different"(=1). The categories were "Central African", "Central European", "North African", "North American", "South American", and "Southern European". These categories corresponded to the best representatives of the foreign students enrolled in the Catholic University of Louvain at Louvain-la-Neuve at the time of the inquiry.

7.1.2 Results and Discussion

Sociometric choices were analysed by assigning a score ranging between 4 and -4 to the world regions referred to by a subject, according to his/her rankings. Whenever a nationality, rather than a geographic region, was cited, that nationality was included in its respective geographical region.

Scores of each region of the world referred to by the subjects were summed and averaged by the number of subjects who had cited them. Table 1 shows the global ranking orders of the regions, as well as their weighted sociometric scores.

Results depicted on Table 1 have the interesting feature of representing an ethnocentric attitude, apparently based in geographical and on politico-social criteria. It seems quite clear that the rankings represent a choice of categories nearer the subjects and a rejection of categories related either to ethnic or to political differences.

Rank	Weighted Score
Central European	1.91
North American	1.89
Southern European	1.57
South American	1.33
Asiatic	1.29
Central African	-0.06
East European	-0.33
North African	-2.43

TABLE 1 - Choices and Rejections of Student Categories from Several Regions of the World. Positive scores indicate preferences, and, negative scores indicate rejections.

A pairwise t-test was performed on the scores of responses to Intergroup Similarity (Table 3). Table 2 shows means and standard deviations of these responses. Results depicted on these tables seem to indicate that ethnocentric preferences are related to similarity judgments. Indeed, the correlation between weighted sociometric scores and means of similarity judgments (Asiatic and East European categories excluded) is positive and significant ($r=0.82$, $p<.05$ $N=6$). Further, Table 3 shows that if the Central European category is taken as a reference point (given its ranking order in sociometric preferences), the North African category ($t[34]=-16.28$, $p<.001$, two-tailed) is the one which might correspond the most to an outgroup.

Category	M	SD
Central African	3.03	1.84
Central European	6.60	1.84
North African	2.54	1.44
North American	5.43	1.40
South American	3.69	1.47
Southern European	5.14	1.35

TABLE 2 - Means and Standard-Deviations of Intergroup Similarity Judgments taking Belgian Students as a Reference Category (N=35).

	Central African	Central European	North African	North American	South American
Central European	-10.78**				
North African	1.58ns	-16.28**			
North American	- 6.38**	- 5.09**	- 9.98**		
South American	- 2.07*	6.16**	- 3.54**	5.57**	
Southern European	- 6.84**	6.68**	- 9.76**	1.35ns	6.16**

TABLE 3 - Pairwise t-Tests between the Means of Intergroup Similarity Judgments taking Belgian Students as the Reference Category (two-tailed, df=34; *=p<.05, **=p<.001; t=row-line).

To conclude, the North African category seems to correspond to a clear-cut outgroup for our subjects. Therefore, it will be used in the following studies in order to create a relevant ingroup-outgroup dimension where the Belgian student category will be taken as a contrasting ingroup.

7.2 STUDY 2: EFFECTS OF CONTEXTUAL CHANGES ON SOCIAL CATEGORIZATION

In this study, subjects were presented with two stimulus group-labels and were asked to describe the most typical attributes of their ingroup and those of a negatively evaluated outgroup. The judgmental contexts were varied so that the variation had no direct influence on the objects of categorization themselves but rather on the subjects' awareness of their social identities. One condition was aimed at generating the awareness of a superset identification (Louvain Students), by confrontating subjects with an "outsider" interlocutor, in addition to a contrast between subset categories (Belgian Louvain Students vs North African Louvain Students). The second condition was aimed at generating only this contrasting subset identification, by presenting subjects with an "insider" interlocutor. Our prediction was that, if the judgmental contexts have different value implications, the contents ascribed to the category-labels will vary in descriptive as well as in connotative terms: the ingroup subset will be described more positively in "outsider" situations than in "insider"ones. Concomitantly, the evaluation of the outgroup subset will change in the same direction, but less strongly. The "insider-outsider" dychotomy was operationalized by presenting Louvain University Belgian students with a questionnaire allegedly issued by a Belgian student group from the same University or from another one.

7.2.1 Method

7.2.1.1 Subjects

117 male Belgian undergraduate students of the Catholic University of Louvain at Louvain-la-Neuve, aged between 17 and 24 years old, were asked to fill in a questionnaire. Subjects were randomly assigned to one of two forms of the questionnaire. 60 subjects responded to one form, and 57, to the other. A second group of 14 male and female judges of Belgian nationality, undergraduate students at the same University, and aged from 18 to 24 years old, were asked to rate the attributes provided by the first group.

7.2.1.2 Procedure

6 Belgian interviewers were placed at public places on the campus of LLN and approached lone subjects at random, asking them whether they were students at the university and whether they agreed to fill in a questionnaire about "several aspects of student life on the campus" (see Appendix B.a). Each interviewer obtained an equal number of questionnaire responses by condition.

The questionnaire was presented under one of two forms. In one condition, the interviewer presented himself/herself as a member of a student group of the Catholic University of Louvain at Louvain-la-Neuve, and the questionnaire was identified as having been issued by that group (Louvain Condition). In another condition, the interviewer presented himself/herself as a member of a student group of Brussels Free University and the questionnaire was presented as having been issued by that group (Brussels condition).

7.2.1.3 The Questionnaire

The questionnaire depicted a headline identifying the University from which the interviewer was supposed to come (Brussels vs. Louvain). The written instructions were as follows:

> "We are a group of students from Brussels (Louvain) University, and we are interested in the existing relationships in your (our) university, between ourselves, Belgian students, and students coming from North African countries.
>
> We would like to know your opinions about two groups of people, and propose to you to write out the characteristics you believe to be the most important, the most frequent, and/or the most typical of persons belonging to each of these groups.

> It goes without saying that persons are all different from one another and that, often, it is not easy to describe a group in general terms. However, it is also true that certain characteristics are more present in certain groups than in others. This is why we ask you to insist on the 10 characteristics the most important, the most frequent, and/or the most striking in people belonging to each of these two groups."

The question, presented on the following page, was as follows:

> "What we ask you, first, is to describe the group of Belgian (North African) students, and, next the group of North African (Belgian) students."

The order of presentation of category-names was counter-balanced within each condition. In order to induce subjects to focus on trait-characteristics, rather than on behavioral descriptions, the assignment of characteristics was made on 10 lines, each one taking the form "They are_____". Additional questions were aimed as a control of subject's age, sex and nationality.

7.2.1.4 Attribute Connotations

In the second part of the study, judges were presented with a number of items selected from the responses of the preceding group, and were asked to rate those items along a 7-point scale ranging from "Likable"(=7) to "Unlikable"(=1). In order to prevent intergroup biases, the items were presented out of their previous context, so that judges were unaware of the fact that the items had been assigned to an ingroup and to an outgroup (see Appendix B.b). The order of presentation of the items was determined by chance, and was the same for all judges.

7.2.1.5 The Encoding of Associations

A count was made on the frequencies of the associations provided by subjects in the first group. Given that subjects responded to two stimulus-words, associations with frequencies equal to 1 in a stimulus-word, were immediately discarded from that stimulus. Next, synonyms were clustered on the basis of, at least, a 67% agreement among 6 independent judges. Synonyms were clustered under the label of the most frequent one. The resulting data were coded following a standard procedure (cf Di Giacomo, 1980; Marques, 1983; Rosenberg & Sedlak, 1972; Yzerbyt, 1984).

7.2.2 Results and Discussion

7.2.2.1 Quantitative Intercategory Similarities

A number of 357 different associations was conserved, which corresponded to 1547 occurrences. Table 4 shows the matrix of similarities between dictionaries as computed by means of Ellegard's index (cf Di Giacomo, 1980), according to the stimulus-categories (Belgian vs. North African), the experimental condition (Brussels vs. Louvain), and the order of presentation (Belgian-North African vs. North African - Belgian).

	LOUVAIN				BRUSSELS			
LOUVAIN	Belg1							
Belg2	0.41	Belg2						
No Af1	0.27	0.35	No Af1					
No Af2	0.29	0.33	0.40	No Af2				
BRUSSELS								
Belg1	0.47	0.42	0.29	0.31	Belg1			
Belg2	0.47	0.46	0.33	0.28	0.50	Belg2		
No Af1	0.28	0.33	0.50	0.45	0.29	0.36	No Af1	
No Af2	0.31	0.34	0.52	0.45	0.37	0.32	0.55	

TABLE 4 - Intercategory Similarities according to the Order of Presentation, to the Category-Names and to the Experimental Conditions (Belg=Belgian; No Af=North African). The numbers 1 and 2, following the category-names, indicate the order of presentation.

The matrix of Table 4 was submitted to Kruskal's MDScal (Table 5) which showed that only small differences existed between the contents assigned to category-labels, according to the order of presentation or the experimental manipulation. However, the two categories Belgian students and North African students are strongly differentiated.

Given these results, the associations were regrouped regardless of the stimuli's order of presentation, and the resulting 4 dictionaries were submitted to a Factor Correspondence Analysis (Benzécri, 1982).

7.2.2.2 Qualitative Similarity Between Categories

The Factor Correspondence Analysis yielded three factors accounting, respectively, for 46.34%, 30.67%, and, 23.00% of the matrix variance. Table 6 shows the organization of the 4 category-labels on these factors.

Condition	Category	Order	I	II
BRUSSELS	Belgian	1	0.763	-0.664
		2	0.661	-0.716
	North African	1	-0.736	0.678
		2	-0.689	0.737
LOUVAIN	Belgian	1	0.746	-0.687
		2	0.746	-0.665
	North African	1	-0.750	0.654
		2	-0.742	0.662

TABLE 5 - Two-Dimensional Solution of the MDScal on the Similarities among Categories (stress=0.7%).

		FACTOR								
		I			II			III		
		F1	CTR	CO2	F2	CTR	CO2	F3	CTR	CO2
LOUVAIN	Belg	0.73	24.5	0.43	0.83	47.8	0.56	0.13	1.6	0.01
	No Af	-0.77	28.9	0.57	0.14	1.4	0.02	-0.66	42.3	0.41
BRUSSELS	Belg	0.81	26.6	0.45	-0.89	47.8	0.53	-0.19	2.8	0.02
	No Af	-0.69	19.9	0.41	-0.22	3.0	0.04	0.79	53.3	0.55

TABLE 6 - Relative Positionings of the 4 Categories on the 3 Factors of the Factorial Correspondence Analysis. F=Factor Score; CTR=Factor Weight; CO2=Quality of Representation on the factor.

There, one can see that the first factor opposes the Belgian to the North African category, regardless of the experimental manipulation, a result consistent with the one yielded by the MDScal. Further, the weights of the 4 categories on this factor are similar. This fact indicates that they all contribute similarly to this factor. However, the second factor shows that a differentiation was operated according to the experimental conditions, mainly for the Belgian categories, which are the only ones to contribute to the variance of this factor (95,6%). The third factor discriminates the North African categories, whose contribution to it is also a strong one (95,6%).

The organization of the 4 category-labels in the three-dimensional space yielded by the Factor Correspondence Analysis, indicates that the subset differentiation (Belgian vs. North African) seems to be more relevant for

subjects than the superset social categorization (Louvain Students) as it was induced in the Brussels condition. This fact is not surprising given the strong perceived dissimilarity between Belgian and North African students, found in Study 1.

However, the experimental manipulation had a clear impact on subjects' attribute assignments, and this impact was stronger for the description of the Belgian subset ingroup (which differentiated immediately on the second factor), than for the description of the North African subset outgroup (which differentiated on the third one). This fact is predictable as well, because we might suppose that the former has much more relevance than the latter in light of subjects' social identity. Still, the fact that the third factor opposes the North African categories as a function of the interviewer's university seems to show that the manipulation had some impact even on the outgroup descriptions. Table 7 shows the contents assigned to the Belgian and North African categories in the two experimental conditions, as determined by the second and third factors of the Factor Correspondence Analysis.[26]

Results of Tables 7a and 7b seem supportive of our hypotheses. The same object - the Belgian students or the North African students - is differently described as a function of the interviewer's supposed origin. Given that such origin has no immediate relationship to the judgmental targets, it seems likely that category differentiations are, at least partially, determined by the judgmental context. These differentiations operate, first for the ingroup and only secondarily for the outgroup. This may be explained by the relative relevance subjects assigned to the former as compared to the latter. This needs to be validated in terms of the category-labels' value connotations.

---

[26] Given that variances are maximized by the chi-squared based algorithm used by the Factor Correspondence Analysis, we assumed that the choice of items with both, extreme positionings on a factor and a heavy weight on the same factor, correspond to the most discriminating (and, therefore, the most "typical") ones for the category which is positioned on the same side of the factor, as contrasted to the category positioned on the opposite side. If we were to accept that attribute assignments were guided by cue-validity, we could say that those attributes were prototypical ones.

[a] BRUSSELS	F-	CTR	CO2	LOUVAIN	F+	CTR	CO2
fashionable	-1.45	1.5	0.62	unappreciative	1.35	1.0	0.65
conservative	-1.45	1.5	0.62	ambitious	1.35	0.8	0.83
goes to lectures	-0.90	0.6	0.71	easy mannered	1.07	0.8	0.83
conscientious	-1.09	0.6	0.83	anti-establishment	0.93	0.6	0.60
school achiever	-1.09	0.6	0.83	close-minded	0.36	0.6	0.75
active	-0.76	0.4	0.97	discrete	0.69	0.5	0.00
different	-0.76	0.4	0.97	happy	0.98	0.5	0.86
honest	-0.68	0.4	0.88	clean	0.98	0.5	0.86
open-minded	-0.27	0.4	0.62	sectarian	0.98	0.5	0.86
communicative	-0.50	0.3	0.82	difficult person	0.56	0.3	0.86
self-willed	-0.38	0.3	0.59				

[b] LOUVAIN	F-	CTR	CO2	BRUSSELS	F+	CTR	CO2
athletic	-0.86	1.2	0.74	motivated	1.50	2.6	0.70
welcoming	-0.62	1.1	0.60	persecuted	1.50	1.6	0.70
wedded to arab	-1.03	1.1	0.58	well-dressed	1.19	1.3	0.87
badly spoken of	-1.24	1.1	0.58	approachable	1.19	1.3	0.87
courageous	-0.75	0.8	0.53	distant	0.79	1.0	0.77
integrated	-0.41	0.7	0.79	serious-minded	0.67	0.9	0.95
phallocrat	-0.87	0.7	0.59	depressed	0.87	0.7	0.75
grant holder	-0.75	0.4	0.53	bad french	0.81	0.6	0.41
stay in family	-0.75	0.4	0.53	elite	0.81	0.6	0.41
generous	-0.75	0.4	0.53	lazy	0.88	0.5	0.57
nationalist	-0.75	0.4	0.53	interesting	0.88	0.5	0.57
irrespectful	-0.65	0.4	0.98	cheerful	0.22	0.5	0.97
pessimistic	-0.47	0.3	0.59	sincere	0.88	0.5	0.57
				resourceful	0.53	0.4	0.72

TABLE 7 - Associations with strongest Contributions to the Variances of the Second (a) and the Third (b) Factors of the Factor Correspondence Analysis. The second factor corresponds to the differentiation of the Belgian categories, and the third corresponds to the differentiation of the North African categories as a function of the Brussels versus Louvain manipulation.

7.2.2.3 Value Similarity Between Categories

The 48 items depicted in Table 7 were presented to a group of judges in order to obtain a value-connotation score for each of them. The value-connotation scores of attributes assigned to the same category were summed and averaged, in order to obtain mean value-connotation scores for each category (Table 8).

BELGIAN STUDENTS					
BRUSSELS	Mean	SD	LOUVAIN	Mean	SD
fashionable	4.86	1.03	unappreciative	2.64	1.60
conservative	4.36	1.55	ambitious	5.57	1.02
goes to lectures	4.64	1.01	easy mannered	4.64	1.22
conscientious	5.07	1.27	anti-establishment	3.79	1.48
school achiever	4.93	1.00	close-minded	2.36	1.15
active	6.50	0.76	discrete	4.79	1.53
different	5.07	1.44	happy	6.21	0.80
honest	6.29	0.99	clean	5.43	1.22
open-minded	6.43	0.76	sectarian	2.29	1.20
communicative	6.21	0.80	difficult person	4.07	1.21
self-willed	6.00	0.04			
Grand Mean=	5.49	0.73	Grand Mean=	4.18	0.47

NORTH AFRICAN STUDENTS					
BRUSSELS	Mean	SD	LOUVAIN	Mean	SD
			athletic	5.86	0.77
motivated	5.71	0.99	welcoming	6.43	0.65
persecuted	3.36	1.82	wed to mother tongue	4.50	1.74
well-dressed	5.36	1.01	badly spoken of	4.07	1.21
approachable	5.86	1.23	courageous	5.86	0.77
distant	3.07	1.38	integrated	5.71	0.83
serious-minded	4.64	1.28	phallocrat	2.93	1.86
depressed	3.07	1.44	grant holder	4.36	1.50
bad french	4.64	1.28	stay in family	4.93	0.92
elite	4.71	1.68	generous	5.93	1.00
lazy	3.21	1.53	nationalist	4.93	1.54
interesting	5.93	1.21	irrespectful	1.93	1.49
cheerful	6.36	1.01	pessimistic	2.86	1.66
sincere	6.36	1.01			
resourceful	6.14	0.86			
Grand Mean=	4.89	0.54	Grand Mean=	4.64	0.50

TABLE 8 - Means and Standard-Deviations of Attributes which best discriminate the 4 Categories described in Table 7. Grand Means correspond to the Average Likability Scores of the categories as a function of the value connotations of the attributes.

In order to check for differences in value-connotations as a function of University (Brussels vs Louvain) and Category-Label (Belgian vs North African), judges were splited into two groups. This was aimed at simulating a between-subjects factor allowing to compute an analysis of variance on the value-connotation scores. Next, a 2(first half vs second half) x 2(Brussels vs Louvain) x 2(Belgian vs North African) ANOVA was computed on these scores. University and Category-Label were within-subjects factors.

No significant main effect was found for the between-subjects factor ($F[1,12]=1.11$, $p=0.31$). Further, no significant interactions were found between this factor and University ($F[1,12]=0.08$, $p=0.78$), Category-Label ($F[1,12]=0.66$, $p=0.43$), and, University and Category-Label ($F[1,12]=0.00$, $p=0.99$).

No significant main effect was found for Category-Label ($F[1,12]=0.59$, $p=0.46$). However, a strong effect arose for University ($F[1,12]=54.00$, $p<.0001$), with subjects in the Brussels condition being significantly more positive (Mean=5.19) than subjects in the Louvain condition (Mean=4.41). More important, the University x Category-Label interaction was significant ($F[1,12]=24.13$, $p<.001$) (cf. Table 8). Therefore, we may conclude that the evaluations of ingroup and outgroup categories changed significantly with the interviewers alleged origin: whereas there is a positive differentiation between ingroup and outgroup categories in the Brussels condition, the differentiation is negative in the Louvain condition. Apparently, the determinant of this change was the awareness of social identity created by the Brussels-Louvain manipulation. When the interviewer was an "insider", it was, probably, irrelevant to attempt to enhance subset social identity. This might explain why subjects in the Louvain condition evaluated the outgroup more positively than the ingroup. However, when the interviewer was an "outsider" ingroup favoritism emerged. Interestingly, in this case a double identification seems to have emerged, because both the ingroup and the outgroup categories were more positively evaluated in the Brussels condition than in the Louvain condition. However, this difference was much stronger for the ingroup than for the outgroup categories. Indeed, there is a significant enhancement of ingroup positivity in the Brussels condition as compared to the

Louvain condition, and a significant enhancement of outgroup positivity in the same comparison (cf. Figure 7). This seems supportive of our hypotheses.

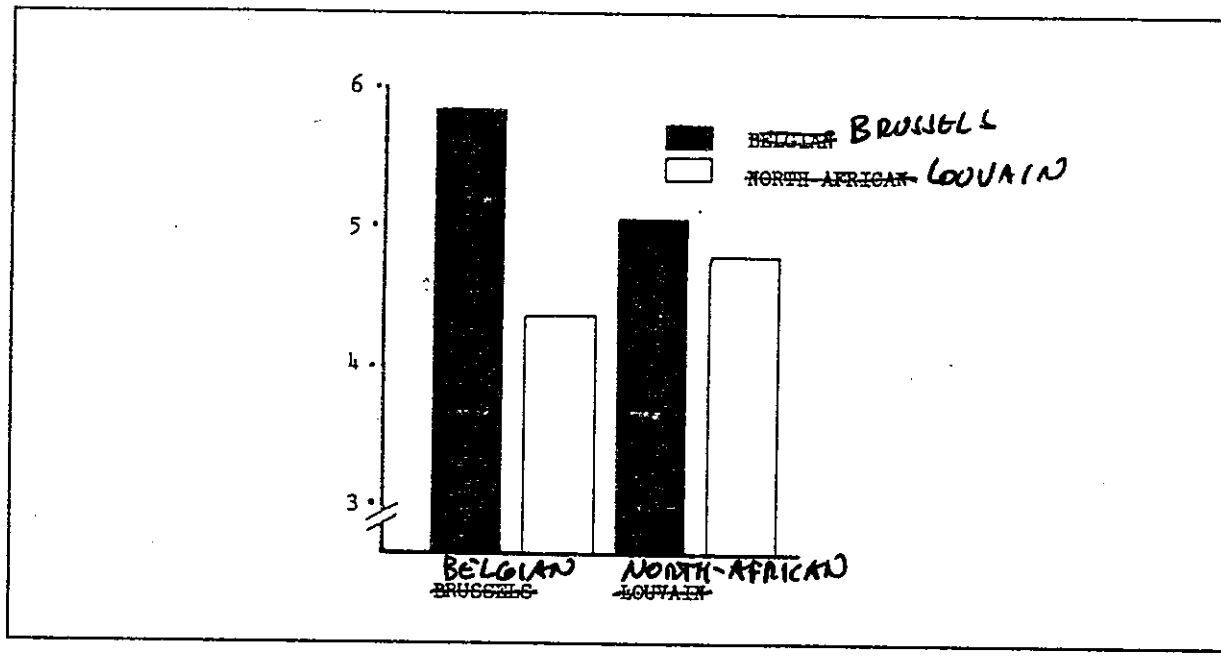

FIGURE 7 - Value-Connotations as a Function of Interviewer's University and Category-Label.

7.3 STUDY 3: THE NORMATIVE STANDARDS OF GROUP IDENTITY AND THE BLACK SHEEP EFFECT

Study 3 was aimed at testing the hypothesis according to which the black sheep effect will emerge only for standards which generate a positive differentiation between the ingroup and a contrasting outgroup. Target's Group Membership was varied by presenting subjects with an ingroup (Belgian Students) or with an outgroup target (North African Students). Likability was varied by describing these targets' behaviors either as desirable (compliance with norm standards) or as undesirable (non-compliance with norm standards). Norm Standards were also varied, so that whereas in one condition subjects read a description of a superset normative behavior ("students who never [always] lend their lecture-notes to colleagues" - an intuitively strong normative proposition in the students' group), in another, they were presented with a subset normative behavior ("students who put studying behind amusement

[amusement behind studying]"- a widespread commonplace in the subjects' social setting). That is, we assumed that the normative proposition "lending lecture-notes to colleagues" applied undiscriminately to all the members of the student category, or superset, whereas the proposition "putting study behind amusement" was relevant only for the subset of Belgian student category (a subset of the former). This observation was based on anecdotical, albeit apparently consistent, evidence. It was predicted that superset normative standards would induce no ingroup polarization, i.e., ingroup and outgroup targets would be judged equally positively or negatively. However, in the subset normative standard condition ingroup targets would be evaluated either more positively or more negatively than outgroup targets.[27] Complementarily, we attempted to check for the relationship between contact with outgroup members and the complexity of outgroup representations. This was based on Linville's (1982b) assumptions that increased contact would lead to weaker inter-trait correlations (cf Chapter 6). The idea underlying this analysis was that cognitive complexity - operationalized in terms of the strength of inter-trait correlations - should be weaker for Low Contact subjects - therefore yielding stronger inter-trait correlations than for High Contact subjects - whose judgments should yield weaker inter-trait correlations.

7.3.1 Method

7.3.1.1 Subjects

91 male and female undergraduates of Belgian nationality, aged between 18 and 23, volunteered to participate in a study about "certain aspects of the students' life on the campus". Males and females were approximately equal in number in all conditions. The number of subjects in each condition varied between 8 and 14. Subjects were run in a single session.

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[27] A pretest sample issued from the subjects' ingroup category was asked to rate the subset and superset normative behaviors in terms of value-connotation. These behaviors were judged independently of assumptions about group memberships. Results showed the differences between positive and negative superset normative behaviors ($t[17,08]=20.18$, $p<.001$, one-tailed), and, between positive and negative subset normative behaviors ($t[19,50]=1.71$, $p<.10$, one-tailed), to be significant and in the predicted direction.

7.3.1.2 Material

The study was conducted by means of a questionnaire (see Appendix C). Four questions were presented prior to the experimental manipulation. The four questions were the following: (1) Choice:

> "Suppose that you had to chose 5 co-dwellers for your communitary appartment for the rest of the academic year. Imagine that 5 people applied, each one belonging to an ethnic community other than yours. Considering that you had no information about the personal characteristics of those persons other than their ethnic origin, and thus that you would be forced to choose on an ethnicity basis, rank your choices from 1 to 5."

Scores varied between 5(=first one to be chosen) and 1(=last one to be chosen); (2) Similarity:

> "In your opinion, how similar to each other are Belgian students and students coming from each of the following regions in the world?".

Subjects answered by means of a 7-point scale ranging from 1(=different) to 7(=similar); Two questions aimed at measuring the degree and the frequency of contacts with outgroup members: (3) Friends: "Do you have friends among students of each of the following nationalities?"; (4) Interactions: "Do you usually discuss with students of each of the following nationalities?". Both questions were answered by means of 7-point scales ranging from 7(=many or often, respectively) to 1(=none or seldom, respectively). Five ethnic labels were presented following each question, always in the same order. These were "non-Belgian Central Europeans", "South Americans", "North Africans", "North Americans" and "Southern Europeans". Only data concerning the North African category were taken into consideration. The experimental manipulation was followed by a set of questions aimed at controlling the perceived typicality of the described class of behaviors in the target's category, and subjects' sex, age and nationality. The typicality question read "In your opinion, to what extent do cases like this occur?" and subjects answered by means of a 7-point scale ranging from 7(=quite frequent) to 1(=quite unfrequent).

7.3.1.3 Experimental Conditions

Subjects were presented either with an ingroup (Belgian) or an outgroup (North African) target. The information provided about the targets varied according to Norm Standards (Subset vs. Superset) and Likability (Likable vs. Unlikable), in a 2x2x2 factorial design. In the Likable-Superset condition, subjects were asked to judge "Belgian(North African) students who always lend their lecture-notes to colleagues". In the Unlikable-Superset condition subjects were asked to judge "Belgian(North African) students who never lend their lecture-notes to colleagues". In the Likable-Subset condition subjects were asked to judge "Belgian(North African) students who put studying behind amusement". Finally, in the Unlikable-Subset condition, subjects were asked to judge "Belgian (North African) students who put amusement behind studying".

7.3.1.4 Dependent Measures

Judgments were obtained through 6 positive and 6 negative trait-descriptors issued from Study 2. Answers were given by means of a 7-point scale ranging from 1(=doesn't apply) to 7(=applies). The judgments on trait-descriptors were averaged for traits presenting significant global F scores across conditions. This was done in order to insure that the traits susceptible to discriminate between categories were the only to be taken into account. The direction of the discrimination was ignored in this selection. The average scores of each subject on positive trait-descriptors yielded a measure of "positive ratings", which was used to test the dependent variable of intergroup evaluations.

7.3.2 Results and Discussion

7.3.2.1 Controls for Intergroup Contact

Above, we assumed that the emergence of the black sheep effect implies that the categories that subjects are asked to judge ought to be effectively perceived as being referred to an ingroup and to an outgroup. We took for granted the fact that subjects in the Ingroup condition actually considered Belgian students as an ingroup category. But, although the outgroup status of North African students showed itself to be a replicable result, we re-checked

for this fact by analysing Choices and Similarity ratings. Specifically, we wanted to check for the fact that subjects in the 8 conditions were equivalent with respect to their rejection of the North African outgroup.

The grand mean of Choice was 1.67 (SD=1.10). Table 9 shows means and standard deviations of this variable across conditions.

	Ingroup		Outgroup	
	Likable	Unlikable	Likable	Unlikable
Subset M	1.63	2.20	1.33	1.54
SD	0.92	1.14	0.50	0.97
Superset M	1.45	1.77	1.38	2.00
SD	1.04	1.36	1.12	1.30

TABLE 9 - Distribution of Choices of North African Students as Co-Dwellers in the Experimental Conditions.

Given that choices were alternative - that is, subjects could not assign the same score to different categories-, that a maximally chosen category would present a score of 5 and that a minimally chosen category would present a score of 1, it seems clear that the category of North African students was among the most rejected. Also, it seemed important to check for the equivalence of the 4 Outgroup conditions on the variables Choice, Similarity, Friends and Interactions (cf Table 10). Therefore, separate 2x2 (Likability x Norm Standards) ANOVAs were computed on the scores of each of those variables for the Outgroup sample, exclusively. The analyses yielded no significant effects except when Interactions was taken as the dependent variable. In this case, a sligh main effect emerged for Norm Standards ($F[1,45]=2.79$, $p=0.10$). Table 11 shows correlations between Choice, Similarity, Friends, and Interactions for the Outgroup sample.

7.3.2.2 The Analysis of Value Judgments

Table 12 presents means, standard deviations and overall F scores of the 6 positive and the 6 negative trait-descriptors. The trait-descriptors with larger overall F scores across all the conditions were chosen for subsequent

		Likable Subset	Likable Superset	Unlikable Subset	Unlikable Superset
Choice	M	1.54	1.38	1.33	2.00
	SD	0.97	1.12	0.50	1.30
Similarity	M	2.33	2.54	2.08	2.57
	SD	1.58	2.33	0.95	1.79
Friends	M	3.33	2.46	2.62	2.00
	SD	1.64	1.71	1.89	1.45
Interactions	M	4.00	2.38	2.92	2.57
	SD	2.50	1.66	2.10	1.95

TABLE 10 - Means and Standard-Deviations of Choice of North Africans as Co-Dwellers, Judged Similarity between Belgian Students and North African Students, Number of North African Friends, and Frequency of Interactions with North African Students. Outgroup condition (N=49).

	Choice	Similarity	Friends
Similarity	0.03 p=0.83		
Friends	0.17 p=0.25	0.20 p=0.17	
Interactions	0.24 p=0.10	0.04 p=0.77	0.67 p=0.000

TABLE 11 - Pearson's Product-Moment Correlation Coefficients and Levels of Significance between Choice of North Africans as Co-Dwellers, Judged Similarity between Belgian Students and North African Students, Number of North African Friends and Frequency of Interactions with North African Students for Subjects in the Outgroup Condition (N=49).

analyses. These traits were "pleasant", "sociable", "welcoming", "cheerful" and "communicative". Since only one negative trait-descriptor showed itself to vary significantly across conditions, we decided to carry subsequent analyses only on measures issued from the positive trait-descriptors stated here above.

7.3.2.3 Effects of Norm Standards, Likability and Target's Group Membership on Value Judgments

Positive ratings were submited to a 2 (Ingroup vs. Outgroup) x 2 (Unlikable vs. Unlikable) x 2 (Subset vs. Superset) ANOVA. The means and standard deviations of positive ratings are showed on Table 13.

		INGROUP				OUTGROUP				
RELEVANCE		Superset		Subset		Superset		Subset		
LIKABILITY		Unf.	Fav.	Unf.	Fav.	Unf.	Fav.	Unf.	Fav.	Total F(7,83)
pleasant	M	2.69	5.55	3.21	3.38	3.00	6.25	2.92	6.11	3.93 7.34 p<0.001
	SD	1.89	1.69	2.01	1.80	2.05	0.71	2.18	1.05	2.21
intelligent	M	4.54	5.18	4.64	3.00	4.10	5.25	4.08	3.89	4.30 1.66 p=0.129
	SD	1.33	2.14	2.10	1.91	2.28	1.58	2.06	1.62	1.96
sociable	M	2.54	5.45	3.43	3.38	3.40	5.50	2.92	5.78	3.89 4.40 p<0.001
	SD	1.71	1.51	1.91	1.89	2.76	1.07	2.50	2.11	2.26
welcoming	M	2.85	5.18	4.07	3.62	3.10	5.88	2.77	5.22	3.95 4.29 p<0.001
	SD	1.41	1.25	2.20	1.94	2.23	1.36	2.09	1.92	2.08
cheerful	M	3.08	6.00	3.64	4.00	3.20	4.75	3.15	4.78	3.99 4.17 p<0.001
	SD	1.44	1.00	1.69	1.63	1.99	2.05	2.12	1.20	1.88
communicative	M	2.38	5.45	4.29	4.54	2.50	5.63	3.00	5.56	4.06 5.87 p<0.001
	SD	1.39	1.37	1.98	2.47	1.27	1.30	2.42	1.59	2.17
shallow--minded	M	3.54	3.82	4.00	3.69	3.50	3.25	3.77	3.33	3.65 0.16 p=0.992
	SD	2.14	2.32	2.54	2.32	2.22	1.58	1.59	0.87	2.00
snob	M	3.85	3.09	2.21	2.85	1.90	2.50	3.85	2.67	2.91 1.84 p=0.091
	SD	2.23	1.44	1.85	1.68	0.99	1.41	2.27	1.87	1.87
apathetic	M	3.69	2.55	3.36	3.92	2.90	3.50	4.31	3.00	3.45 1.08 p=0.385
	SD	2.02	1.51	2.06	2.22	1.73	2.07	1.93	1.22	1.90
ill-natured	M	2.69	2.00	2.79	2.85	2.90	1.50	2.62	2.22	2.51 0.78 p=0.608
	SD	1.38	1.18	1.12	2.03	2.13	1.07	1.80	1.48	1.72
irrespectful	M	3.46	2.91	3.36	4.62	3.60	2.38	3.92	2.78	3.46 1.23 p=0.297
	SD	2.07	1.64	2.53	2.14	2.07	1.51	2.29	1.86	2.10
cold	M	4.46	3.09	3.21	3.69	4.90	2.50	4.77	2.33	3.70 2.63 p<0.05
	SD	2.03	1.81	2.36	2.53	1.79	1.41	1.79	1.32	2.11

TABLE 12 - Means, Standard-Deviations and F-scores of Positive and Negative Trait-Descriptors as a Function of Target's Group Membership, Norm Standards and Likability.

		Ingroup		Outgroup	
Likability		Fav.	Unf.	Fav.	Unf.
Superset	M	5.60	3.04	5.49	2.95
	SD	0.94	1.82	1.19	2.09
Subset	M	5.53	2.80	3.78	3.76
	SD	0.93	1.21	1.65	1.54

TABLE 13 - Positive Ratings as a Function of Target's Group Membership, Norm Standards and Likability.

No significant effects were found for Target's Group Membership ($F(1,83)=0.583$, $p=0.447$), for Norm Standards ($F(1,83)=0.889$, $p=0.349$) and for

the Target's Group Membership x Norm Standards interaction ($F(1,83)=0.209$, $p=0.649$). But significant effects were found for Likability ($F(1,83)=37.180$, $p<.001$), for the Likability x Norm Standards interaction ($F(1,83)=3.305$, $p<.10$), for the Target's Group Membership x Likability interaction ($F(1,83)=4.480$, $p<.05$) and for the Target's Group Membership x Norm Standards x Likability interaction ($F(1,83)=4.317$, $p<.05$).

The Likability main effect showed that favorable information about targets yielded positive ratings more strongly than unfavorable information (means are, respectively, 5.10 and 3.14). The Likability x Norm Standards interaction showed that superset information lead positive ratings to be stronger and weaker, respectively, for favorable and unfavorable targets (means are, respectively 5.55 and 3.00) than did subset information (means are, respectively 4.66 and 3.28 for favorable and unfavorable targets).

More important with respect to the black sheep effect was the Target's Group Membership x Likability interaction. Ingroup targets were significantly more positively evaluated in the Likable condition (mean=5.57) and less positively evaluated in the Unlikable condition (mean=2.92) than the corresponding outgroup targets (means are 4.64 and 3.36 for favorable and for unfavorable outgroup targets, respectively). This result may be considered as supportive of the black sheep effect. Further, according to our prediction, the black sheep effect emerged clearly from evaluations of targets in the Subset condition, but no differences were found between ingroup and outgroup judgments in the Superset condition (see Figure 8).

As can be noticed in Figure 8, virtually no difference exists between judgments of favorable and unfavorable ingroup and outgroup superset targets, and, the black sheep effect that was found through the Likability x Target's Group Membership interaction seems to be primarily due to responses in the Subset condition.

These results support our hypotheses. Probably, what happened in the Superset condition was that subjects perceived the targets' behavior as conforming (Likable condition) or not conforming (Unlikable condition) to the normative standard of the Student (rather than Belgian students or North African students) group. If this be the case, then it seems obvious that

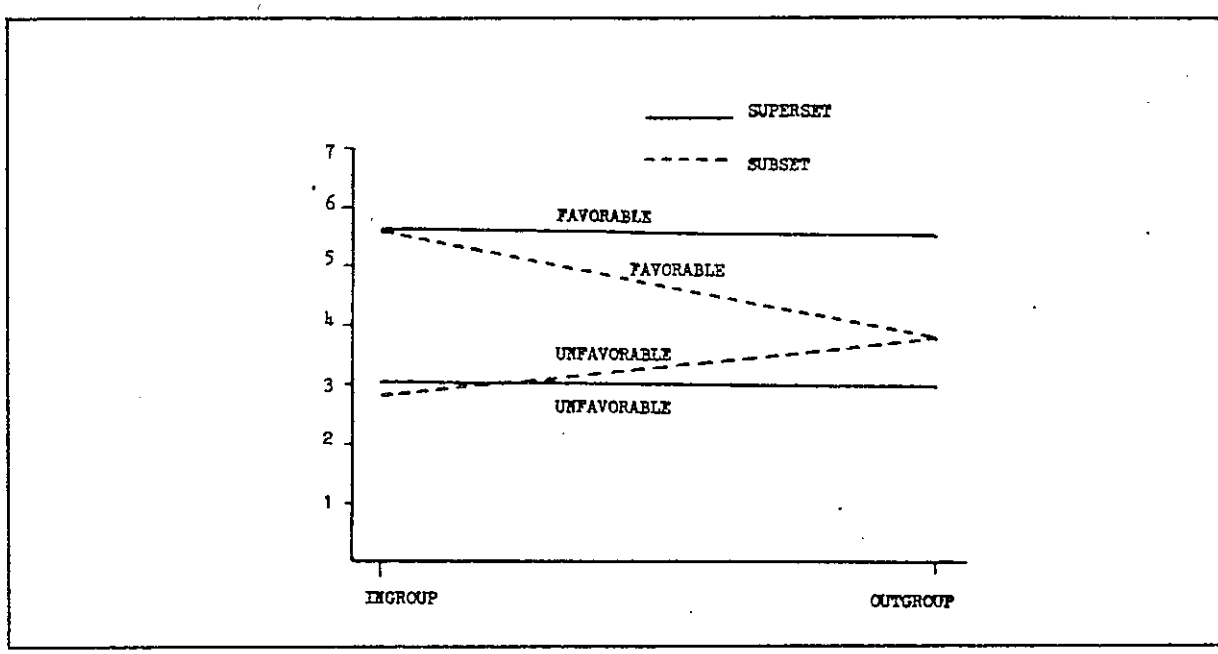

FIGURE 8 - Positive Ratings as a Function of Target's Group Membership, Norm Standards and Likability.

ingroup favoritism would be an irrelevant strategy in the judgmental situation. Conversely, in the Subset condition, where the target's behavior was relevant for the ingroup positive definition, the pattern of responses predicted by The black sheep hypothesis emerged quite clearly.

7.3.2.4 Contact and the Complexity of Outgroup Representations

The above results are at odds with the predictions of the complexity-extremity hypothesis, namely in the Subset conditions. In order to have an indication about the potential positive relationship between intergroup contact and complexity, we compared the correlation matrix of the 5 positive trait-descriptors issued from the judgments made by Low Contact (N=30) to the corresponding matrix issued from responses of High Contact subjects (N=19) in the Outgroup condition. These groups were distinguished according to their Interactions scores (above and below the median-score).[28]

[28] A test of equivalence of medians across the conditions, according to the H0 of equality, yielded a non-significant chi-squared value (1.179, df=3, p=0.752). Therefore, subjects in the Outgroup condition were pooled in High and Low Interaction groups, regardless of their having been run in the Subset or Superset condition.

Unfortunately, results were inconclusive even for descriptive purposes, since the number of stronger coefficients for Low Contact subjects equaled the number of stronger coefficients for High Contact subjects. Further, the only significant difference is unsupportive of the complexity hypothesis, since the correlation is stronger for high- than for low-information subjects (cf Table 14).

		pleasant			
sociable	High	0.72 p<.001			
	Low	0.88 p<.001 n.s.	sociable		
welcoming	High	0.59 p=.001	0.82 p<.001		
	Low	0.78 p<.001 n.s.	0.75 p<.001 n.s.	welcoming	
cheerful	High	0.19 p=.306	0.44 p<.02	0.44 p=.16	
	Low	0.61 p<.01 n.s.	0.67 p<.01 n.s.	0.57 p<.02 n.s.	cheerful
communicative	High	0.62 p<.001	0.86 p<.001	0.82 p<.001	0.61 p<.001
	Low	0.50 p<.05 n.s.	0.41 p<.10 p<.01	0.68 p=.001 n.s.	0.47 p<.05 n.s.

TABLE 14 - Pearson's Product-Moment Correlations for Judgments about Outgroup Members made by Subjects with High Contact and by Subjects with Low Contact. Ns are 19 and 30 respectively for Low Contact and High Contact. Significance-levels at the bottom-line stand for a test of differences between correlation coefficients for two independent samples.

In light of these results, the less we can say is that the familiarity-complexity relationship seems to need further inquiry.

7.4 CONCLUSIONS

The studies we described above were based on a general assumption according to which social categories are determined by social values and by the cognizer's self-reference in making judgments about those categories. In terms of the social categorization - social identity - social comparison theory (cf Chapter 6), this assumption implies that individuals' group memberships lead them to position themselves as group members on a point of a value-dimension which, in their eyes, is occupied by their ingroup. This evaluative categorization process has emotional implications, because it affects the individual's self-image (e.g. Billig, 1976; Rijsman, 1981; Tajfel, 1978a; Turner, 1975, 1978, 1984).

We proposed three additional hypotheses to this assumption. First, the individual's self-positioning on a value-dimension by means of his/her group membership, may vary from situation to situation, according to the contextual implications. Studies 2 and 3 yielded evidence supportive of this hypothesis. Study 2 showed that the awareness of social identity as induced by the presence of an "outsider" may influence the judgments about the ingroup as well as about the outgroup, in the direction of enhancement of the positive image of the ingroup. Study 3 showed that situations which involve norms common to a superordinate group decrease intergroup biases in trait-descriptions.

A second hypothesis was that ingroup favoritism requires that the value-dimensions employed in social comparison be relevant to the ingroup perceived as a contrasting category with the outgroup. This contrast, we added, is determined by normative principles which are specific to the ingroup's identity. The third hypothesis was that, when this is the case, negative ingroup members will be judged more negatively than negative outgroup members, because the former are relevant in terms of the ingroup's social identity.

To conclude, it seems worthwhile to note that the above results are consistent with findings of other studies we described earlier in this work, and namely, those by Mummendey and Schreiber (1984) and by Peabody (1968). Mummendey and Schreiber (1984) found that irrelevant attribute dimensions led to the emergence of outgroup favoritism. We found that when the subjects' social identity was not at stake a similar phenomenon emerged. Peabody (1968) found that the same characteristics were evaluated differently according to their association with an ingroup or an outgroup (cf Chapter 5). We found that the connotations ascribed to ingroups and outgroups seem to depend on situational constraints which operate upon the subjects' identification with their membership group(s). Finally, these results might indicate that the normative dimensions upon which subjects based their judgments varied from one situation (Louvain or Superset Normative Standard) to another (Brussels or Subset Normative Standard), and that so did the attributes, or their values assigned to the categories. This process seems to have been due to a change in normative dimensions as a function of a change in group identifications.

7.4.1 Implications of the Results

7.4.1.1 Real-Life Processes and the Black Sheep Effect

If the results may be applied to real-life settings, they would have two implications. The first one, is classical, although often ignored: when an ingroup and an outgroup are confronted with conflicting goals, increased contact increases hostility, whereas when those groups are confronted with superordinate, common goals, intergroup contact reduces hostility (Sherif & Sherif, 1969). These conflicting or superordinate goals might have a parallel at the level of the representations held by group members. As we argued in Chapter 5 these representations may correspond to normative presuppositions. Therefore, it might be that once shared normative standards are primed, intergroup hostility decreases. Consequently, an effective way to reduce intergroup discrimination would be to put opposing groups in situations which enhance common norms, rather than merely increasing the frequency of contacts.

A second implication is that, although we presented the black sheep effect as a somewhat conformist phenomenon whose aim is preserving a given "status quo", it might be seen as a basis for social innovations, which begin with "black sheep" being rejected from well-grounded and traditional groups.

At a more theoretical level, the above results also have some implications. With respect to cognitive processing, they seem to show the importance of emotional factors on group perception. Further, they seem to show that judgments about groups (and probably, about social categories in general) depend both on normative principles and on situational contexts which affect those emotional factors. Finally, they seem to show that even if social categorizations are based on actual descriptions of real-world cues, the social process involved in these categorizations bears less on those very cues than on the determinants of their choices.

7.4.1.2 The Black Sheep Effect within the Social Categorization - Social Identity - Social Comparison Theory

With respect to the social categorization - social identity - social comparison theory, the above results seem to show that the maintenance or the enhancement of social identities may be reached in ways complementary to social mobility and social change (cf Tajfel, 1978a; Tajfel & Turner, 1979).

Specifically, the black sheep effect seems to occur in situations in which undesirable ingroup members cannot be excluded from the group - which prevents a reverse social mobility. However, it cannot be considered as an example of social change, since it does not imply a direct change in intergroup relations. Rather, the black sheep effect is immediately concerned with intragroup relations. One might argue that this effect corresponds to the generation of two novel contrasting categories within the ingroup, and that, in this case, it would refer to an intergroup process. But, at the immediate moment, this process of category subdivision should be viewed as an intragroup social change. If this speculation is reasonable, then it adds an apparently important feature to the phenomenon of ingroup identification. The fact that, even a "satisfied" group in terms of its positive overall social identity, may be confronted with internal undesirable "dissidents" which put that identity at stake, shows that the strive to achieve a positive social identity may be independent from an immediate intergroup comparison situation. In this case, comparison should be made by reference to the ingroup normative standard, which itself was probably determined by intergroup situations. This seems to yield a more dynamic vision of intergroup relations than the clear-cut, traditionally assumed strategy of intragroup cooperation toward intergroup competition.

7.4.1.3 The Black Sheep Effect and the Outgroup Polarization Hypothesis

Finally, with respect to the complexity-extremity hypothesis, the above results are somewhat problematic, since they are at odds with the predictions of the complexity-extremity hypothesis, and no reasonably well-ground explanation for this discrepancy is available, as far as we know. A possible reason is that, as argued in the preceding chapter, Linville and Jones (1980) and Linville (1982b) analyzed interpersonal rather than intergroup situations. Therefore, their results might have been produced either by a dilution effect, or by a contrast between category expectancies and features of judgmental targets.

VIII

THE INFORMATIONAL CONCOMITANTS OF THE BLACK SHEEP EFFECT

The present chapter is composed of three studies which focus on a set of processes complementary to those we analysed in the preceding one. In that chapter, we attempted to show that the normative standards of group identification change as the intergroup situations in which categorizations are elicited change (Study 2). Also, we attempted to illustrate the complementary phenomenon in which social categorizations change as the normative standards upon which they are based change (Study 3). The studies we present below do not involve changes in judgmental situations other than those implied by the ingroup-outgroup manipulations. Rather, they are aimed at (1) providing an explanation for the pattern of results found under the heading of the complexity-extremity hypothesis (Study 4); (2) replicating the black sheep effect by using a relevant value dimension (Study 5); and (3) comparing alternative hypotheses and alternative explanations for this effect (Study 6).

8.1 STUDY 4: INDIVIDUALIZED INFORMATION AND EXPECTANCY DISCONFIRMATIONS

With Study 4, we attempted to show that results obtained by Linville (1982b, Expt. 2) might have been due to a subjective positioning of subjects nearer the interpersonal than the group pole of the interpersonal-group continuum postulated by Tajfel (1978a). That fact, added to the fact that subjects were provided with individualizing information about the judgmental targets, might have elicited a "dilution effect" (cf Chapter 6). More precisely, targets might have been judged as atypical of the categories to which they were assigned by the experimenter. In this case, subjects' judgments might have been due to the perception of a discrepancy between the information provided about the target and their category-based expectancies, at least in certain experimental conditions. In order to put this speculation on more solid grounds, we carried out a partial replication of the only

experiment reported by Linville (1982b) or by Linville and Jones (1980) in which an attempt was made to check directly for the complexity-extremity relationship. Recall that in her experiment, Linville (1982b, Expt. 2), had male undergraduates read two vignettes which presented favorable and unfavorable information about aged or about young males. One group of subjects was told that the central characters of the two vignettes were young males. The other group was told that the central characters were males in their late 60s. The vignettes read as follows:

> Likable: "The alarm chimed and the once still figure sprang up, wondering why his dream was suddenly interrupted. Looking out the window, he smiled at the beauty of the spring day. Today would be a busy one, but there were many things which he was anxious to accomplish. After a quick egg and a refreshing shower, he would be ready to begin. He frowned at the morning's headlines while eating his breakfast, wondering why the world did not learn from its past mistakes instead of repeating them. The phone rang and he answered, delighted to hear his friend at the other end. They set a date for lunch; he would have to squeeze it in, but he was anxious to talk to his friend. Feeling fresh from his shower, he glanced over his list, deciding which were the priority items. He set his plan of action, and reached into the closet for a light sweater. He opened the front door and stepped out into the day, thinking how wonderful the air smelled during spring."
>
> Unlikable: "The morning sun shone through the window, resting on the lifeless lump curled under the comforter on the bed. The lump stirred, and a head slowly emerged, one eye staring angrily into the streaming rays. After a futile attempt to return to his peaceful slumber, he sat up, resigned to the fact that the new day had begun. He slipped on his faded blue robe and shuffled to the kitchen for his usual bowl of Rice Krispies. Irritated by the merry crackling of his cereal, he reached up, flicking on the TV which sat on top of the refrigerator. Eyes fixated on the screen, he munched his cereal slowly, wondering what the day would bring. He tried to think of people who he wished would drop by to see him but could only think of many who he wished would stay away. The day was definitely beautiful, he decided, but much too hot to spend time outside. He switched to the morning movie and to his pleasant surprise found it was one of his favorites. "Might not be such a bad day after all", he decided, and leaned back, staring at the screen." (in Linville, 1982b, p.201).

Remember that results of this study indicated that a negative correlation seems to exist between cognitive complexity and judgmental extremity (cf. Figure 6 in Chapter 6). There is, however, a striking difficulty with the above vignettes: whereas the favorable vignette reports a set of behaviors which is quite normal for a young actor but quite unexpected from an aged actor, the unfavorable one might be equally typical of young and aged actors. If this is true, then it might be inferred that Linville's (1982b) subjects'

judgments were affected by this discrepancy. Such discrepancy might have led them to judge the favorable aged target more positively than the favorable young target, since the behavioral and personal characteristics depicted by the favorable vignette are more easily shown by a young than by an aged person. If, on the other hand, the unfavorable vignette applied with equal plausibility to young and to aged persons, then an interpersonal-level judgment would yield no differences according to the targets' ages. Interestingly, our argument matches Linville's (1982b, Expt. 2) results as well: outgroup (aged) favorable targets were judged more positively than ingroup (young) favorable targets, but no significant differences were found between unfavorable targets.

Subjects were presented with translations of the two vignettes Linville (1982b) used in her study, and were asked to guess the target's age. Our hypotheses were that, on the one hand, subjects would perceive the favorable target as being significantly younger than the unfavorable one. On the other hand, subjects would show more consensus in the favorable than in the unfavorable condition. If these hypotheses are confirmed, then our above speculations will receive some support.

8.2 METHOD

8.2.1 Subjects

37 male undergraduate students aged from 18 to 24 years old, were asked to guess the age of a person described in a vignette. 18 subjects were presented with a favorable, and 19, with an unfavorable vignette.

8.2.2 Procedure

Subjects were asked to participate in a study on "social accuracy" (see Appendix D). They were simply asked to read a favorable or an unfavorable vignette and then, to guess the target person's age along a 7-point scale (1=16 to 23, 2=24 to 31, 3=32 to 39, 4=40 to 47, 5=48 to 55, 6=56 to 61, and, 7=62 to 70). The vignettes were French translations of those used by Linville

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[29] The favorable vignette read as follows: "Le réveil a sonné et ce qui n'était encore qu'une forme bondit du lit, tout en se demandant pourquoi

(1982b, Expt. 2).[29]

8.3 RESULTS AND DISCUSSION

Bartlett's test for homogeneity of variances was performed between the Likable and the Unlikable conditions on the ages assigned to the targets. Variances in the two conditions were found to be significantly different ($F=5.10$, $p=0.02$) from each other, with the favorable vignette showing less variance (SD=1.25) than the Unlikable one (SD=2.19). Therefore, a t-test using a separate variance estimate was performed on the means of the two conditions. Results showed that targets were perceived as significantly older in the Unlikable condition (Mean=3.84) than in the Likable condition (Mean=2.44) ($t[28.83]=-2.37$, $p<0.02$, one-tailed). These results support our predictions. The favorable vignette applies with more plausibility to young targets than to aged targets, whereas the unfavorable vignette yields lower consensus and perceptions of the target as being significantly older than does the favorable one (cf Figure 9).

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son rêve était soudainement interrompu. Il sourit à la beauté du matin printanier qui jaillissait par la fenêtre. Une journée bien remplie l'attendait; il y avait beaucoup de choses qu'il voulait faire. Après avoir pris rapidement un oeuf et une douche rafraîchissante il serait prêt pour la journée. Pendant son petit déjeûner il jeta un coup d'oeil aux grands titres du journal du matin en se demandant pourquoi le monde n'apprenait jamais des erreurs du passé au lieu de les répéter. Le téléphone sonna et il répondit ravi d'entendre son ami à l'autre bout du fil. Ils s'arrangèrent pour dîner ensemble; il serait obligé de comprimer son agenda, mais il avait tellement envie de parler avec son ami. Rafraîchi par la douche, il jeta un coup d'oeil sur sa liste d'activités pour établir un ordre de priorités. Son plan d'action établi, il prit un pull léger dans le placard. Il ouvrit la porte de la rue et sortit au grand jour: l'odeur du printemps était merveilleuse."

The unfavorable vignette read as follows: "La lumière du matin jaillit par la fenêtre, et se déposa sur le tas recroquevillé et sans vie qui gisait sous les draps. Le tas remua et une tête apparut lentement, un oeil faché vers les rayons du soleil. Après avoir vainement essayé de se rendormir il s'assit, résigné à l'idée qu'un nouveau jour commençait. Il enfila sa robe de chambre bleue décolorée et se traîna vers la cuisine pour prendre son habituel bol de flocons d'avoine. Irrité par les craquements joyeux des céréales, il tendit le bras vers la télé qui se trouvait sur le frigo et l'alluma d'un coup sec. Les yeux fixés sur l'écran il machônna lentement ses céréales en se demandant ce que la journée lui apporterait. Il s'efforça de penser à des personnes qu'il aimerait voir, mais ne se souvint que de toutes celles dont il préférait rester éloigné. Il trouva que le jour était beau, mais trop chaud pour sortir. Il changea le programme de T.V. pour voir le film du matin. Heureusement surpris il vit qu'il s'agissait d'un de ses films favoris. "Tout compte fait, ce ne serait peut-être pas une si mauvaise journée que ça", pensa-t-il en se renversant dans sa chaise, les yeux fixés sur l'écran."

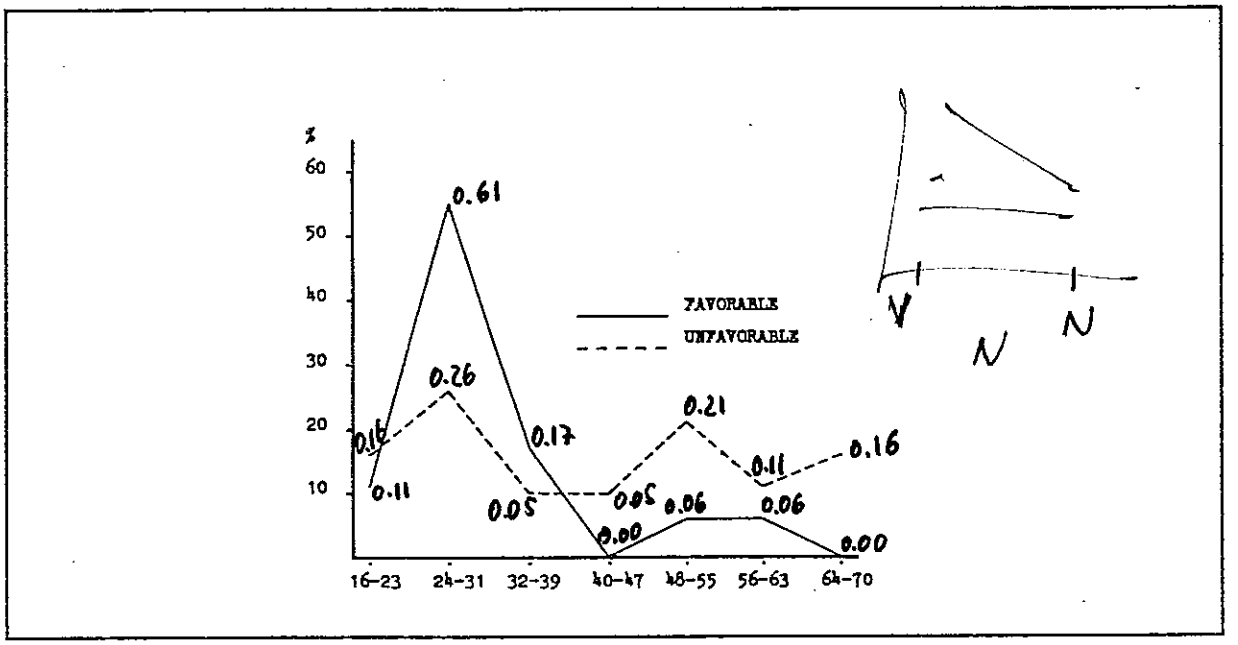

FIGURE 9 - Ages assigned to the Target as a Function of Information Likability. Distributions of weighted frequencies.

The results allow one to speculate that the experimental manipulation that was used by Linville (1982b, Expt. 2) might have been subjected to an important confounding effect. This effect bears on an apparent discrepancy between category-based expectancies and target's information. This discrepancy seems to be induced by the favorable, but not by the unfavorable, vignette. This fact, added to our speculations above might well explain the reason why Linville (1982b, Expt. 2) obtained an outgroup polarization effect for favorable vignettes but not for unfavorable ones. To conclude, it seems that the kind of information subjects are provided with in experimental situations where they must judge individual targets whose theoretical status is that of being instances of social categories, should be carefully analysed prior to being used as informational manipulations.

8.4 STUDY 5: THE NORTH AFRICAN STUDY: A TEST OF THE TYPICALITY EFFECTS ON THE BLACK SHEEP EFFECT

Study 5 attempted to show that the black sheep effect arises in value dimensions other than the one we used in the Subset conditions in Study 3. Also, Study 5 attempted a check of Linville's (1982b) assumptions about cognitive complexity (cf Chapter 6), more conclusive than the one reported in Study 3. However, in contradiction to that study, it was now predicted that inter-trait correlations would be stronger for ingroup judgments than for outgroup judgments. This prediction is at odds with the complexity-extremity hypothesis, and, we drew on assumptions quite different from Linville's. Our idea was that if the emergence of the black sheep effect was due to subjects' recurrence to a "manicheist" judgmental strategy for ingroup targets, this strategy should yield a clear-cut distinction between positive and negative elements. Conversely, subjects should have applied for a "lenient" judgmental strategy for outgroup targets, therefore reducing the strength of inter-trait correlations. Thus, strength of inter-trait correlations should be associated with the subjects' emotional investment in the ingroup social identity, rather than on the differential complexity of ingroup and outgroup representations.

In this study, subjects were presented with 8 categories: categories which defined a relevant value dimension ("Likable vs. Unlikable students"); group superset categories (Belgian vs. North African students); favorable subsets (Likable Belgian students vs. Likable North African students); and unfavorable subsets (Unlikable Belgian students vs. Unlikable North African students). The study was basically an attempt to validate the black sheep effect. Two predictions were made: (1) the ingroup likable subset target will be judged more positively than the outgroup likable subset target, and, the ingroup unlikable subset target will be judged more negatively than the outgroup unlikable subset target. This corresponds to the black sheep effect; (2) inter-trait correlations will be stronger for ingroup judgments than for outgroup judgments. This hypothesis draws upon the idea that, given the emotional relevance of ingroup judgments as compared to outgroup judgments, subjects will apply to more clear-cut criteria about positive and negative distinctions in the former case than in the latter.

8.4.1 Pretest

The pretest was aimed at determining a set of trait descriptors susceptible of defining a value dimension relevant in light of the ingroup's normative standards.

8.4.1.1 Method

Subjects. Forty-one male and female Belgian students were asked to judge one of 4 categories by means of a number of 7-point scales. The number of subjects responding to each stimulus-category varied from 9 to 12.

Procedure. Data were gathered by means of a questionnaire which was presented as part of a study about student life in LLN. The questionnaire presented one of the following stimulus-categories: "Belgian students", "North African students", "Unlikable students" and "Likable students". A set of trait descriptors was presented following the stimulus-category and subjects were invited to rate the stimulus-category by means of 7-point scales ranging from 7(=applies) to 1(=doesn't apply). 85 trait descriptors were presented to subjects. The traits were the 67 characteristics the most frequently attributed to Belgian and to North African students in Study 2 (cf Chapter 7) plus 18 Semantic Differential items issued from 3 scales from each Semantic Differential factor.[30]

8.4.1.2 Results and Discussion

In order to determine the relative positions of the Belgian, North African, likable and unlikable categories, we submitted the means of the trait-descriptors on each category to a Factor Correspondence Analysis. Because cells were mean values, the variance of the Stimulus Category x Trait-Descriptor input matrix was very small (0.063). Thus we disregarded the relative contributions of both variables to the overall variance of the matrix (CTR) and we only considered squared cosinus (CO2) and factor scores (F) for the interpretation (cf Tables 15 and 16). The first two factors accounted for

[30] These 18 items were aimed at facilitating the interpretation of semantic spaces obtained from multidimensional analysis. The scales were: "pleasant-unpleasant", "good-bad", "kind-unkind" (evaluation), "big-small", "strong-weak", "huge-tiny" (potency), "alert-slothful", "fast-slow" and "alive-dead" (activity).

FACTOR	F I	F II	CTR I	CTR II	CO2 I	CO2 II	CO2(I) CO2(II)
alone	-0.10	-0.01	0.2	0.0	0.32	0.01	0.33
lives it up	-0.01	-0.18	0.0	6.0	0.00	0.89	0.89
ambitious	0.02	-0.03	0.0	0.3	0.17	0.37	0.50
noisy	-0.14	-0.06	0.4	0.7	0.19	0.04	0.23
jovial	0.32	0.02	2.6	0.1	0.97	0.00	0.97
leftist	-0.05	0.13	0.0	2.4	0.10	0.66	0.76
cold	-0.38	-0.10	2.7	1.5	0.89	0.06	0.95
depressed	-0.20	0.04	0.7	0.3	0.70	0.03	0.73
weak	-0.07	0.02	0.1	0.1	0.93	0.06	0.99
welcoming	0.39	0.06	4.1	0.8	0.97	0.02	0.99
cheerful	0.27	0.02	2.0	0.1	0.97	0.01	0.98
fashionable	-0.02	-0.12	0.0	2.6	0.04	0.93	0.97
hurried	-0.06	-0.22	0.1	8.1	0.06	0.88	0.94
strange	-0.13	0.08	0.3	1.1	0.70	0.27	0.97
xenophobic	-0.05	-0.11	0.1	2.0	0.08	0.38	0.46
snob	-0.27	-0.13	1.7	3.2	0.71	0.17	0.88
profiteer	-0.39	-0.00	3.5	0.0	1.00	0.00	1.00
dead	-0.24	0.02	0.9	0.1	0.96	0.01	0.97
communicative	0.27	0.06	2.0	0.8	0.95	0.05	1.00
anti-establishment	-0.03	-0.08	0.0	1.1	0.11	0.61	0.72
studious	0.13	-0.04	0.4	0.3	0.73	0.07	0.80
cultured	0.20	0.01	1.0	0.0	0.74	0.00	0.74
sectarian	-0.22	0.03	1.2	0.2	0.97	0.02	0.99
distrustful	-0.19	-0.03	0.8	0.1	0.97	0.02	0.99
thriftless	0.08	-0.18	0.1	5.8	0.17	0.83	1.00
shy	-0.01	0.03	0.0	0.1	0.11	0.51	0.62
bad	-0.49	0.17	4.3	4.1	0.89	0.11	1.00
drinker	-0.16	-0.20	0.6	6.8	0.40	0.60	1.00
serious-minded	0.02	-0.01	0.0	0.0	0.30	0.02	0.32
violent	-0.45	0.18	3.6	4.5	0.86	0.14	1.00
kind	0.27	0.06	2.0	0.7	0.96	0.04	1.00
ill-natured	-0.47	0.11	3.7	1.6	0.93	0.05	0.98
self-willed	0.23	0.03	1.4	0.2	0.98	0.02	1.00
motivated	0.15	0.03	0.6	0.2	0.96	0.03	0.99
indolent	-0.18	0.08	0.8	1.3	0.82	0.17	0.99
polite	0.30	0.03	2.3	0.2	0.92	0.01	0.93
cool	0.23	0.04	1.6	0.5	0.95	0.03	0.98
hung-up	-0.14	0.02	0.4	0.1	0.89	0.02	0.91
helpful	0.29	0.06	2.2	0.7	0.96	0.04	1.00
calm	0.20	0.03	1.0	0.2	0.65	0.01	0.66
clean	0.24	0.09	1.4	1.7	0.83	0.12	0.95
stay-at-home	-0.01	0.02	0.0	0.1	0.01	0.12	0.13
apathetic	-0.27	-0.03	1.3	0.1	0.91	0.01	0.92
alive	0.13	0.04	0.5	0.3	0.86	0.08	0.94
non-active	-0.15	0.10	0.5	1.9	0.69	0.31	1.00
irrespectful	-0.34	0.13	2.5	3.0	0.87	0.13	1.00
non-approachable	-0.37	0.09	2.4	1.2	0.93	0.06	0.99
solidary	0.24	0.03	1.5	0.2	0.97	0.02	0.99
good	0.32	0.01	2.5	0.0	0.99	0.00	0.99
pleasant	0.36	-0.04	3.3	0.3	0.96	0.01	0.97
unpleasant	-0.45	0.13	3.7	2.6	0.92	0.08	1.00
intelligent	0.19	0.00	0.9	0.0	0.94	0.00	0.94
honest	0.36	-0.11	3.3	2.5	0.91	0.09	1.00
pessimist	-0.16	-0.09	0.5	1.4	0.66	0.22	0.88

(continued on the next page)

non-athletic	-0.05	0.09	0.1	1.2	0.12	0.31	0.42
phallocrat	-0.17	0.03	0.7	0.2	0.54	0.02	0.56
athletic	0.13	-0.01	0.5	0.0	0.75	0.01	0.76
enthusiastic	0.19	-0.00	0.9	0.0	0.92	0.00	0.92
reasonable	0.09	-0.06	0.2	0.7	0.68	0.30	0.98
sociable	0.34	0.02	3.1	0.1	0.94	0.01	0.95
conceited	-0.30	-0.11	2.2	2.2	0.88	0.11	0.99
shallow-minded ...	-0.30	-0.04	2.1	0.3	0.98	0.02	1.00

TABLE 16 - Factor Structure of the 62 best Represented Trait-Descriptors as a Function of the Categories "Likable Students", "Unlikable Students", "Belgian Students" and "North African Students".

8.4.2 Effects of Likability and Target's Group Membership on the Polarization of Ingroup Judgments

8.4.3 Method

8.4.3.1 Subjects

184 male and female Belgian students aged from 18 to 24 volunteered to answer a questionnaire. Each stimulus-category was responded to by 23 subjects.

8.4.3.2 Procedure

One of five "blind" interviewers of Belgian nationality approached alone subjects at random in public and semipublic places in LLN, asking them whether they were students in UCL and, if the answer was affirmative, whether they would agree to fill in a questionnaire (see Appendix E). Subjects were asked to judge one out of 8 categories: "Belgian students", "North African students", "Unlikable students", "Likable students", "Unlikable Belgian students", "Unlikable North African students", "Likable Belgian students" and "Likable North African students". Each interviewer gathered about the same number of questionnaire-responses by stimulus-condition.

8.4.3.3 Dependent Measures

The stimulus-category was followed by the 62 trait-descriptors determined in the pretest. Subjects rated each trait on a 7-point scale ranging from 7(= applies) to 1(= doesn't apply). Three further questions concerned subject's sex, age and nationality (see Appendix F).

8.4.4 Results and Discussion

8.4.4.1 The Selection of the Most Adequate Trait-Descriptors

A one-way ANOVA was computed for each trait across the 8 categories, and, traits presenting low variances were discarded. Next, items which did not differ significantly between the two likable and unlikable students categories were eliminated. This was done as a way to insure that the trait-descriptors could actually be considered as negative or positive. We were thus left with 20 positive 18 negative trait-descriptors whose means, standard-deviations and one-way F scores are depicted in Table 17.

positive items	M	SD	F(7,176)	negative items	M	SD	F(7,176)
pleasant	4.11	2.02	36.65**	unpleasant	3.75	2.16	35.51**
sociable	4.22	2.09	31.16**	conceited	4.01	2.12	17.20**
communicative .	3.91	2.12	25.57**	snob	3.65	2.17	16.65**
cheerful	4.26	2.03	24.75**	violent	3.41	2.07	13.56**
welcoming	4.07	2.20	23.11**	ill-natured	2.95	1.91	13.32**
kind	4.38	1.94	22.43**	irrespectful ...	3.53	2.00	10.83**
good	4.31	1.78	19.69**	profiteer	3.90	2.13	10.11**
helpful	4.10	2.00	19.23**	cold	3.42	2.13	10.00**
jovial	4.25	1.96	15.85**	shallow-minded .	4.05	1.98	10.00**
cool	4.49	1.99	13.75**	phallocrat	4.04	2.03	9.63**
stand-together	4.11	2.13	11.40**	sectarian	4.18	1.90	8.49**
honest	4.32	1.76	11.36**	apathetic	3.53	1.70	6.27*
enthusiastic ..	4.18	1.68	9.32**	xenophob	3.81	2.04	5.79*
self-willed ...	4.24	1.79	7.14*	non-approachable	4.21	2.03	5.77*
motivated	4.49	1.79	6.62*	hung-up	3.80	1.95	5.56*
alive	4.16	1.73	6.54*	depressed	3.20	1.76	5.31*
intelligent ...	4.47	1.45	6.53*	non-active	3.27	1.70	4.42*
polite	4.30	1.89	6.52*	pessimist	3.58	1.73	4.20*
cultured	4.32	1.61	6.10*				
athletic	4.08	1.60	5.69*				

TABLE 17 - One-way ANOVA on the Scores of the 38 Trait-Descriptors (**=p< 001; *=p<.01).

8.4.5 Cognitive Complexity of Ingroup and Outgroup Categories

In order to verify hypothesis 2, the raw scores of the 38 items listed in Table 17 were submitted to a Principal Components Analysis which extracted 8 factors for the total amount of variance. The centroid of each stimulus-category was computed as the arithmetical average of factor scores of subjects who responded to that stimulus (cf Table 18). Although centroids

were calculated for all components, the small amount of variance extracted by the last 6 justifies that according attention only to the first two, which account for 75,10% of the variance.

Variance (%)	I 64.60	II 10.50	III 7.70	IV 5.30	V 3.90	VI 3.20	VII 2.10	VIII 2.30
Likable	0.690	0.593	-0.698	-0.658	0.135	0.345	-0.161	-0.293
Unlikable	-1.071	-0.424	0.290	0.133	-0.103	-0.347	0.441	0.145
Belgian	0.146	0.071	0.230	0.003	1.049	-0.145	-0.461	0.113
North African	0.356	-0.252	-0.126	0.053	-0.446	0.020	-0.047	-0.103
Lik. Belgian	0.384	0.396	-0.303	-0.351	0.608	0.116	-0.204	-0.182
Lik. N. African	0.596	-0.113	0.031	0.377	-0.944	-0.068	0.151	0.030
Unl. Belgian	-1.099	0.071	0.503	0.101	0.190	-0.231	-0.021	0.026
Unl.N. African	-0.001	-0.343	0.074	0.341	-0.490	0.310	0.302	0.265

TABLE 18 - Groups' Centroids on the 8 Principal Components and Percentage of Variance extracted by each Principal Component.

Figure 10 is the graphic representation of groups' centroids for the first two principal components. It shows that outgroup categories are considerably more homogeneous than ingroup categories.

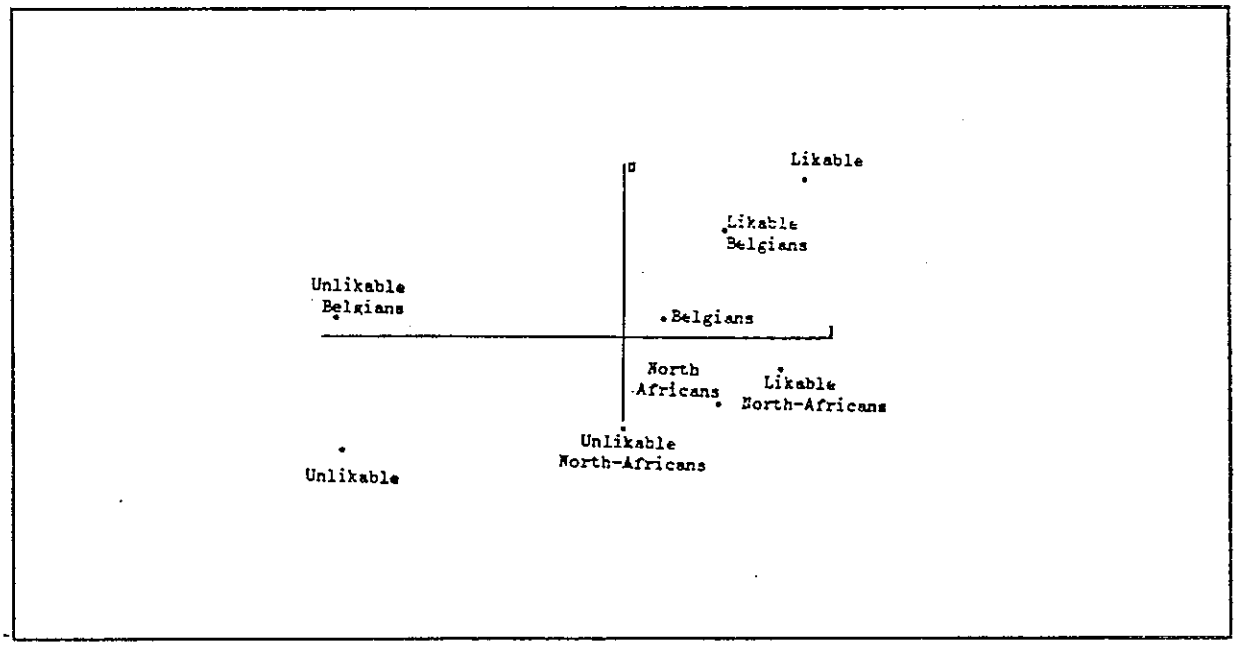

FIGURE 10 - Group Centroids plotted on the first two Principal Components.

Furthermore, the category of likable Belgian students is more similar to that of likable students than to that of likable North African students and, conversely, unlikable Belgian students is more similar to unlikable students than unlikable North African students. Ingroup subsets are nearer the criterial categories (likable students or unlikable students) than the outgroup subsets. More importantly, results support the hypothesis according to which ingroup representations are internally more differentiated than outgroup representations. Since the centroids are derived from inter-trait correlations, results indicate that those correlations were stronger for ingroup judgments than for outgroup judgments. Also important is the fact that the proximity of ingroup subsets from the likable and unlikable categories seems to show that this dimension corresponds to the perception of a normative standard of the ingroup. This seems plausible, namely because different subjects responded to the former and to the latter stimuli.

8.4.6 The Black Sheep Effect

In order to check for hypothesis 1 we averaged the scores of each subject in the "Belgian students", "North African students", "unlikable Belgian students", "unlikable North African students", "likable Belgian students" and "likable North African students" conditions, on the 18 negative traits and on the 20 positive traits. Two 2(Belgian vs. North African) x 3(Likable vs. Neutral [superset] vs. Unlikable) ANOVAs were performed, either on positive ratings or on negative ratings. A significant main effect was found for Likability on positive ratings ($F[2,132]=31.52$, $p<.0001$) and also for negative ratings ($F[2,132]=23.98$, $p<.001$) No main effects were found for Target's Group Membership ($F[2,132]=1.53$, $p=0.219$, and, $F[2,132]=1.36$, $p=0.246$, respectively for positive and for negative ratings). However, both analyses showed highly significant interactions between Likability and Target's Group Membership. This interaction was stronger for positive ratings ($F[2,132]=9.56$, $p<.0001$) than for negative ratings ($F[2,132]=7.37$, $p<.001$). Tukey's multiple range tests performed on the means of positive ratings and on the means of negative ratings (cf Table 19) showed no differences between the superset categories, as well as between the means of judgments in the outgroup condition, but that

significant differences ($p<.05$) existed between the means of ingroup likable and unlikable subsets. As shown in Table 19, these differences run in the predicted direction (cf Figure 11).

Les $\bar{X}$s ne sont pas bonnes ch. Article

[a] positive ratings:

Likability	Superset		Likable		Unlikable	
	M	SD	M	SD	M	SD
Ingroup	4.37(b)	1.00	5.21(c)	0.71	2.95(a)	0.97
Outgroup	4.55(bc)	1.04	4.59(bc)	0.76	3.96(b)	0.84

[b] negative ratings:

Likability	Superset		Likable		Unlikable	
	M	SD	M	SD	M	SD
Ingroup	3.87(b)	0.90	2.84(a)	1.01	4.95(c)	0.83
Outgroup	3.43(ab)	1.13	3.52(ab)	1.06	4.15(bc)	0.81

TABLE 19 - Positive and Negative Ratings as a Function of Likability and Target's Group Membership. Means containing the same letter are not different at a .05 level of significance as given by Tukey's LSD test.

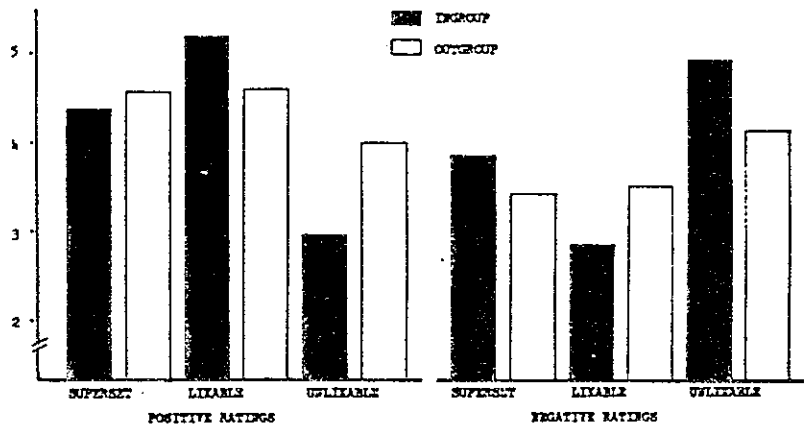

FIGURE 11 - Polarization of Positive and Negative Ratings as a Function of Target's Group Membership and Target's Likability.

Therefore, the black sheep hypothesis received further support. Moreover, its opposition to the complexity-extremity hypothesis was extended to cognitive complexity.

8.5 STUDY 6: THE HEYSEL EXPERIMENT

The results obtained in studies 2-5 seem to suggest that the polarization of ingroup judgments is due to an identification of subjects with their membership groups. The self reference of categorization processes and the fact that group labels are positioned along value dimensions, would lead ingroup judgments to be determined by their emotional relevance. Thus negative ingroup members would be rejected in order to preserve the ingroup's overall positive social identity.

However, it may be that ingroup polarization is due to subjects' heightened familiarity with ingroup members as compared to outgroup members. This possibility, which is contradictory to the complexity-extremity hypothesis, in terms of the predicted pattern of results, draws on the similar background assumption that heightened contact with a stimulus domain affects judgments made about instances of that stimulus domain. However, it is also contradictory with the black sheep hypothesis, to the extent that it assigns ingroup polarization to "pure", rather than emotional-cognitive, processes.

The assumption of ingroup polarization as a function of ingroup familiarity is derived from Tesser and Leone's (1977; Tesser, 1978) studies. For instance, in one experiment, these authors presented a group of males and a group of females with stimulus materials related either to typically masculine or to typically feminine issues ("football" and "women's fashions"). The stimuli were either likable or dislikable, and subjects were asked to evaluate them. Results showed that female subjects evaluated stimuli related to women's fashion more positively or more negatively than males did. Conversely, males judged stimuli related to football more positively or more negatively than females did. In light of these and other findings, Tesser (1978) proposed that contact with a stimulus domain develops cognitive schemas about it, therefore allowing subjects to make more clear-cut judgments than they would, had they have had lower contact with that stimulus domain.

Study 6 was inspired by the incidents at the Heysel Stadium in Brussels, Belgium, in may 1985 when, following a riot between supporters of two soccer teams, 39 people were killed and many others were severely injured. The significant impact of that incident on Belgian public opinion, was exacerbated by its media coverage.

Two days after the events at the Heysel stadium, we asked a group of Belgian students to imagine that German or Belgian supporters, instead of British "hooligans" had triggered those events, and to evaluate those fictive supporters on a series of trait-descriptors. Further, subjects were asked to answer a series of questions aimed at determining their level of information about soccer team supporters. Only one prediction was made: Belgian (ingroup) supporters susceptible of triggering incidents like Heysel would be judged more negatively than German (outgroup) supporters susceptible of producing identical incidents, regardless of the information subjects had about soccer supporters in general.

It seems worthwhile to note that the present study could be viewed as a crucial experiment, because it allows one to compare predictions derived from the ingroup favoritism hypothesis (e.g. Tajfel, 1982a), from the complexity-extremity hypothesis (e.g. Linville, 1982a), from the judgmental polarization hypothesis (e.g. Tesser, 1978), and from the black sheep hypothesis. Indeed, the complexity-extremity hypothesis would predict that subjects with low information in the German condition would be the most extreme, whereas those with high information in the Belgian (ingroup condition) would be the less extreme. Furthermore, subjects with low information in the Belgian condition should be expected to be less extreme than subjects with low information in the German condition, and subjects with high information in the German condition should be less extreme than subjects with low information in the same condition. The judgmental polarization hypothesis of Tesser (1978), on the other hand, would predict the opposite results. Finally, the ingroup favoritism hypothesis would predict more extreme judgments in the German condition than in the Belgian condition regardless of information (unless information was correlated with ingroup identification).

8.5.1 Method

8.5.1.1 Subjects

40 male Belgian undergraduates, aged between 19 and 26 volunteered to answer a questionnaire. 19 subjects were presented with a "German supporters" stimulus-category and 21 were presented with a "Belgian supporters" stimulus-category.

8.5.1.2 Procedure

Subjects were asked to judge two fictive categories of soccer team supporters "susceptible of behaving in the same way English hooligans did". These categories were presented either as Belgian (ingroup) or as German (outgroup). Subjects were further divided into two groups according to the contact they reported to have had with the domain of soccer. Subjects with significantly more contact with that domain were grouped in the "High Information" condition, and the others were grouped in the "Low Information" condition. The study was carried on two days after the Heysel incident.

8.5.1.3 The Questionnaire

The questionnaire was entitled "Soccer and Violence" and the study was presented as follows:

> "You are certainly aware of the events that occurred at the Heysel stadium before the Liverpool-Juventus match. You also know that this was not the first time that this kind of thing has happened. Imagine now that German (Belgian) supporters, instead of English supporters, generate an identical situation during a match between their team and another one. In the following questionnaire we ask you to describe such fictive German (Belgian) supporters by means of a number of traits."

Subjects were presented with a set of 26 personality and attitudinal descriptors, issued from a summary content analysis of the Belgian french speaking newspapers published the morning after the Heysel incident. Each item was judged on a seven-point scale ranging from 7(=applies) to 1(=doesn't apply). A complementary set of questions was asked in order to obtain a compound measure of information about the domain of soccer. These questions were the following: (1) Interest: "To what extent are you interested in

soccer?"; (2) Support: "To what extent would you consider yourself as a soccer team supporter?"; (3) Soccer Experience: "Do you regularly participate as a player in soccer matches?"; (4) Audience: "How many soccer matches do you assist on the average per year?"; (5) Heysel Information: "How close did you follow the Heysel events, on the radio, on the press, on the television, and so on?". All questions but the fourth were answered by means of seven-point scales decreasing from 7 to 1. Subjects answered the fourth question by indicating a number. Subjects were requested to report their age, sex, and nationality.

8.5.2 Results and Discussion

The first step was to classify subjects according to their general information about soccer as it was measured by the "information" questions.

	INFORMATION HIGH		LOW		
item	Mean	S.Dev	Mean	S.Dev	F(1,38)
INTEREST	5.08	1.28	1.38	0.50	120.60 p<0.001
SUPPORT	3.00	1.74	1.06	0.25	19.30 p<0.001
SOCCER EXPERIENCE	3.38	1.71	1.19	0.75	22.95 p<0.001
HEYSEL INFORMATION	6.42	0.58	5.94	1.18	2.91 p<0.10
AUDIENCE	16.92	15.68	2.25	3.24	13.50 p<0.001

TABLE 20 - Means, Standard-Deviations and F-Scores of the A-Posteriori Classification of Subjects in Low vs. High Information Groups.

This was done by means of a stepwise discriminant analysis of those variables followed by a classification of subjects' profiles. Information profiles were analysed regardless of stimulus conditions. The classification of subjects in High versus Low Information groups was made through a significant canonical discriminant function (Wilks' Lambda=0.1652, Chi-squared=63.93, df= 5, p<.00001). Interest, Support and Soccer Experience were the most predictive variables. As showed in Table 20, only the question

	TARGET							
	GERMAN				BELGIAN			
INFORMATION	LOW		HIGH		LOW		HIGH	
item	Mean	S.Dev	Mean	S.Dev	Mean	S.Dev	Mean	S.Dev
mad	3.44	2.19	4.70	2.26	5.00	2.24	5.29	1.94
violent	5.22	1.72	6.00	1.05	6.85	0.38	6.14	1.10
insane	3.44	1.67	4.10	2.28	3.43	2.23	4.43	2.06
burglar	4.44	1.74	5.80	1.62	6.14	0.90	6.00	1.04
hysterical	3.22	1.20	3.50	1.96	4.14	1.68	4.64	1.91
excited	5.56	2.19	5.60	2.27	6.00	1.29	6.29	0.99
irresponsible	3.89	1.83	6.20	1.87	4.29	2.43	5.86	1.29
drunk	5.67	1.58	6.00	1.49	5.86	1.57	6.00	0.96
fascist	3.44	2.01	3.90	2.33	3.43	1.81	4.07	1.94
dangerous	5.22	1.56	5.90	1.29	6.57	0.79	6.00	1.47
delirious	3.22	1.79	4.00	2.26	4.43	1.90	4.29	1.64
rebel	3.67	1.58	3.20	2.04	4.57	1.62	4.29	1.20
unhinged	4.00	1.87	3.40	1.84	4.29	2.14	4.50	1.65
asocial	3.00	1.50	4.30	2.41	4.43	1.90	4.14	1.61
xenophobic	3.67	1.00	3.90	2.42	2.57	1.72	4.29	2.02
unconscious	4.67	2.29	5.60	2.27	5.57	1.62	6.14	1.61
unpleasant	5.00	1.87	5.30	1.34	5.71	1.60	5.07	1.77
savage	3.44	1.94	5.20	1.93	6.14	0.90	6.07	1.78
inhuman	4.00	1.00	2.80	2.20	4.14	1.77	5.36	1.69
ill-natured	4.44	1.59	4.20	1.69	6.14	0.90	5.36	1.82
delinquent	3.67	2.00	4.40	2.12	4.29	1.89	4.43	1.65
foolish	5.00	2.12	4.70	2.26	5.86	1.68	5.43	2.03
bad	4.00	1.41	3.60	1.65	5.43	0.79	5.14	1.66
demented	2.67	1.12	4.10	1.85	3.14	1.46	4.71	1.98
killer	3.67	2.06	3.60	2.37	3.57	1.51	4.86	2.21
lout	4.78	0.97	4.90	1.91	5.43	1.81	5.79	1.25

TABLE 21 - Means and Standard-Deviations of Judgments as a Function of Information and Target's Group Membership.

concerning information about the Heysel events showed a moderate discriminatory power, and the strong means for this question might be interpreted as an indicator of the relevance those events had for all subjects regardless of their overall interest in soccer. Subjects were subdivided into High Information and Low Information groups on the basis of their profiles on information items. For the German stimulus condition, 9 subjects were classified as highly informed and 10 as low informed. For the Belgian stimulus condition, 7 subjects were classified as low informed and 14 as highly informed.

Table 21 shows the means and standard deviations of judgments in each condition for the 26 descriptors. Subjects' average scores on the 26 items were submitted to a two-way ANOVA (regression method) for Target's Group Membership (Belgian vs. German) and Information (High vs. Low). As predicted, a significant main effect emerged for Target's Group Membership ($F(1,36)=6.07$, $p<.02$) but no effect was found for Information ($F(1,36)=1.17$, $p=0.286$), and, the Target's Group Membership x Information interaction was not significant ($F(1,36)=0.211$, $p=0.649$). Table 22 shows means and standard deviations of subjects' average scores in the four groups. Finally, the significant differences found between averaged scores in the Belgian and the German conditions are not due to the influence of some exagerated polarizations for a few descriptors. All items but "xenophobic" present mean differences in the predicted direction (cf Table 21).

			TARGET'S GROUP MEMBERSHIP Target's Group Membership German	 Belgian	
Information	Low	M	4.09	4.99	9.08
		SD	0.70	0.78	1.48
	High	M	4.57	5.18	9.75
		SD	1.23	0.91	2.14
			8.66	10.17	
			1.93	1.69	

TABLE 22 - Unlikability Judgments as a Function of Target's Group Membership and Information.

In brief, results seem to confirm our hypothesis about the major role of group membership on the polarization of ingroup judgments and to disconfirm the causal role of information on that phenomena. Moreover, they show that ingroup favoritism can emerge in the form of an "outgroup bias", whose possible function is to preserve the overall positive image of the ingroup. But, most importantly, the black sheep effect seems to be better explained in terms of a value-driven process than in terms of memory storage.

The overall results seem thus to support the black sheep hypothesis and to disconfirm "pure" cognitive explanations of judgmental polarizations toward ingroups or outgroups.

8.6 CONCLUSIONS

Results of studies 5 and 6 showed a strong polarization of ingroup judgments as compared to outgroup judgments. An interpretation of these results is that, from our subjects' point of view, it was irrelevant that socially undesirable individuals existed inside the outgroup superset, because these individuals obviously did not threaten their social identity.

If the above interpretation is correct, then some of its implications for the ingroup favoritism hypothesis should be pointed out. One, is that ingroup biases may be less linear than the way in which they are presented by the classic literature on intergroup relations - the perception of ingroups as more positive and less negative than outgroups. Empirical evidence has clearly supported this assumption (e.g. Brewer, 1979b; Brewer & Kramer, 1985; Tajfel, 1978a) and we do not intend to shed doubts upon it. The black sheep effect should thus be understood as a complementary strategy for the maintenance of positive social differentiation from outgroups.

Finally, the complexity-extremity hypothesis was consistently disconfirmed by our results. The most likely explanation for this fact is that, whereas the complexity-extremity hypothesis led perceivers to judge others on more interpersonal terms, thus creating discrepancies between expectancies and the information associated with the targets, the black sheep hypothesis deals directly with a group level of judgment.

IX

GENERAL CONCLUSIONS

9.1 ON THE NOVELTY OF THE PROBLEMS RAISED AND THE PROPOSED SOLUTIONS

With this work we attempted to present a set of programatic ideas for the analysis of social psychological processes immediately related to social judgment. We have no illusions about the originality of these ideas. Indeed, we never attempted to be original, for we were aware of arguments like those of Allport (1984):

> "Social psychology is an ancient discipline. It is also modern - ultramodern and exciting. So much that we are tempted to disregard the past, and to brush aside the thoughts of our intellectual ancestors(...). [However] It is true that our intellectual forefathers lacked tools of precision for empirical research and that they were sometimes naive in their theories; yet they bequeathed to us an important store of shrewd insights that have stood the test of time. (...). It has been well said that those who do not know history are doomed to repeat its mistakes. And the history of science shows that both the accomplishments and the blunders of one generation of scholars may become building stones in the hands of the next. [But] a study of the history of social psychology can be justified only if it shows the relevance of historical backgrounds to present-day foregrounds." (p.1)

If we have no illusions about our originality, we have no doubts about the justification of our "historical" concerns either. Indeed, we devoted a large part of this work to historical reviews. Such reviews gave us the certitude that the problems we felt were shared and, consequently, that they were not ideosyncratic inventions of our own.

We drew heavily upon our "intellectual forefathers", and, undoubtedly, on reading authors like Asch (1952), Sherif (1966) or Tajfel (1981) we often felt that something was being said about social psychological processes. Therefore, we do not believe it useless to have recovered these "old" ideas. The richness of studies like those of Sherif (1966) on norm formation were, after all, heuristically unavailing. The more recent ideas of Tajfel about social categorization were often purely and simply ignored. Sometimes, his "old" ideas were recovered under a new form... should it be different with a little

"historical" background? No matter. The problem is that little progress has been made in this way.

We did not restrain ourselves from borrowing from our "ancestors". We also drew heavily on our "neighbors'" ideas. Cognitive psychology was able to give us some insight on the capabilities (both those which it studies, and those which it does not focus upon) of cognizers.

With respect to social cognition, the first conclusion we reached is that its problem is not the lack of theoretical or methodological tools, but rather its reductionist scope. It seems obvious that "schematic-processing" may explain no matter what phenomenon being studied by social cognitivists, mainly because social cognitivists do not study processes which cannot be explained by means of schematic processing. It is obvious that no "affect-based" assumptions are needed to explain the processes studied by social cognitivists because those processes have no affect-based implications. It is obvious that such processes may be explained with no need to apply for theoretical constructs like norms and values, much in the same way that research on artifical concept formation does not require such constructs. The theoretical tools of social cognition are marginal for a social approach to cognition. Indeed, they were able to show only that information about persons can be processed in the same way as information about other objects. This was one of the postulates of early New Look psychologists, but should it be taken for granted that social information obeys exclusively the same principles? Social perception psychologists provided us with some relevant clues for a negative answer, and we attempted to explicate those clues.

9.2 ON PSYCHOSOCIAL CORRESPONDENCE

The principles we extracted from social perception and from cognitive psychology allowed us to conclude that "social information" is an empty notion. What is "social" or "nonsocial" is the interaction between the contents and the processes by which information is generated, extended or changed. In light of this idea, we replaced the term "social information" by that of "psychosocial correspondence".

Psychosocial correspondence might be defined as a sort of knowledge which derives both from cognitive processing and social influence processes. The process component of psychosocial correspondence is social computing, and its basic principle is value-validity. Norms and values seem to be stored in semantic memory as propositions. They should function in social interactions as presuppositions. But the generation and encoding or assimilation of such propositions would be impossible in the absence of social interactions.

Now, it is clear that virtually any proposition depends, at least partially, upon social interactions. However, we considered that the analysis of such a problem in this work would have carried us far beyond our scope. Although we consider it a fundamental question, we preferred to postulate the existence of a continuum from psychophysical to psychosocial correspondence and to define our object of analysis as the judgments which are as near as possible to the psychosocial pole. It would be interesting, however, to explore the empirical potentialities of the continuum as a whole, and this would necessitate that this distinction be carefully analysed. Still, some research ideas could be immediately pursued. For instance, would it be easier to change a system of beliefs based on psychophysical correspondence, or, conversely, would it be easier to change one based on psychosocial correspondence? To what extent could social influence change psychophysical beliefs and to what extent could real-world cues change psychosocial beliefs? And in what direction? When do psychophysical beliefs turn into psychosocial beliefs? Etc. As far as we know, these problems have not yet received attention. Still, they seem to be crucial for the definition of our objects of study as social psychologists.

9.3 ON SOCIAL COMPUTING AT THE INDIVIDUAL LEVEL

If it was explicit that social information processing could occur with respect to a green slide or a light point as well as with a person or a group label, it was implicit that it could occur collectively as well as individually. That is, social computing is not related either to the nature of the judgmental target nor necessarily to the quantity of cognizers who are present in the judgmental situation. Rather, once norms and values are

assimilated, it may refer to the nature of the criteria that are used in processing information. This point of view was developed in detail by Di Giacomo (1981, 1985). Building on this idea, we rough out a tentative set of postulates to study the individual correlates of social computing. Our idea was that these postulates can help in distinguishing computing from social computing in terms of judgmental outcomes.

We accepted the postulate that semantic structures, determined by psychosocial correspondence, include features of two types: descriptive and connotative. Descriptive features are directly linked to category-names, and connotative features are assigned to those category-names as a function of both the value-connotations of the category-name and the situational demands, depending on the value-propositions individuals attempt to materialize in a given judgmental situation.

9.4 ON GROUP PERCEPTION

We considered group perception as an optimal domain in which to carry out a preliminary test on this sketchy model, and we focused on the role of situational demands and normative standards on the evaluation of ingroups and outgroups. We proposed a more specific hypothesis under the heading of the black sheep effect.

With respect to group perception, we discussed models of intergroup contact, namely those which relied upon the perceptual and cognitive consequences of familiarity with outgroup members on the reduction of hostility. Those models presented a psychophysical view of intergroup perception. However, we believe we have been able to show that many situations involving intergroup perception are strongly independent from real-world cues. Therefore, we relied basically on the social categorization - social identity - social comparison theory, which seems to provide a quite straightforward account of psychosocial correspondence. Namely, that theory presupposes, first, that category-labels, or groups, are valued according to socially computed criteria and, second, that categorizations are made on a self-reference basis. This self-reference basis generates an emotional involvement on the part of the cognizer, which is related to the socially

computed value criteria upon which categories are positioned. Therefore, we might say that, according to this point of view, social categorization presupposes the use of a value-validity criterion which is socially determined.

9.5 ON SOCIAL COMPUTING AND GROUP PERCEPTION

Assuming this to be true, we attempted to check for the general hypotheses we formulated about the individual correlates of social computing in light of the effects of group memberships. The premises of those hypotheses were as follows:

(1) - groups define themselves by means of normative propositions which function as intragroup presuppositions;

(2) - individuals are able to stereotype ingroups as well as outgroups;

(3) - group memberships may vary from social context to social context, but the normative presuppositions which define them are relatively stable;

(4) - the positive social identity of the ingroup may be ascertained by comparison with a value-normative proposition which is relevant for the definition of the ingroup. This value-dimension, and the resulting evaluations, are only mediately related to intergroup comparisons;

Therefore it was hypothesized that:

(a) individuals will judge ingroupers in a different way from outgroupers even in situations that do not bear immediately on intergroup comparisons;

(b) different social contexts may trigger reliance upon different norms for intergroup judgment, even if the targets of judgment do not objectively change;

(c) the priming of different norms may lead to different social categorizations;

We attempted to test hypotheses (a), (b), and (c) in a series of studies. In one of these studies, we showed that a change in the context of categorization with no immediate effect on the ingroup-outgroup dimension, may

trigger different attribute assignments to ingroup and outgroup categories. This finding seems to support hypotheses (a) and (b). Thus it seems to illustrate the assumption about the plasticity of social categories and their context-dependent contents. Further this study showed that value-connotations also vary with the context, and this seems supportive of our assumption about value-validity as a social categorization criterion.

In another study, we showed that ingroup favoritism emerges for judgmental dimensions which are relevant for the definition of the ingroup, but not for other equally value-laden dimensions which, not withstanding, are not relevant for the ingroup-outgroup differentiation. This seems to support hypothesis (c).

9.6 ON THE BLACK SHEEP EFFECT

A more specific prediction was included in hypothesis (b) and was called the black sheep effect. The idea was that a way to preserve a positive social identity, complementary to social mobility and social change, would be to reject undesirable ingroup members - if they were undesirable in terms of group relevant dimensions - so that they would be more negatively evaluated than equally undesirable (but irrelevant) outgroup members. This hypothesis was confirmed in three studies. Further, it was showed that this phenomenon was due to a process of group identification rather than to "informational" factors.

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Above all, our goal in this work has been to show the interest of viewing social cognitive processes from a standpoint which gives equal importance to individual and to social factors. Many authors seem to believe that social psychology is not yet able to determine its object. We believe that some of the reductionist views described above do not contribute to solving the problem. But, to allot the same importance to individual and social factors is not the same as summing everything up and then averaging to see what happens next. Our best hope in this work is to have been able to contribute toward a definition of what should properly be called "social cognition".

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TABLE INDEX

FIGURE INDEX

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Appendix A

CHOICE OF AN OUTGROUP: THE QUESTIONNAIRE

PAGE 1:

Ce qui suit est le début d'une étude portant sur ce que les étudiants de LLN pensent à propos de certains aspects de leur vie sur le site. Il se compose de deux questions auxquelles nous vous demandons de bien vouloir répondre.

Nous vous remercions d'avance pour votre collaboration.

Votre âge:_____ ans.

Votre sexe: M F (entourez la bonne lettre).

Votre année d'études:_____

Votre Faculté:_____

Votre nationalité:_____

PAGE 2:

Question 1:

A LLN la plupart des appartements communautaires comprennent 5 chambres. Si vous deviez, l'an prochain par exemple, habiter un de ces appartements, les étudiants de quelles nationalités (autres que la vôtre) souhaiteriez-vous avoir et lesquels souhaiteriez-vous ne pas avoir comme co-kotteurs? Rangez-les par ordre décroissant:

Je souhaiterais avoir avec moi les étudiants:

1. En premier lieu: _____
2. Ensuite: _____
3. Puis: _____
4. Enfin: _____

Je n'aimerais pas avoir avec moi les étudiants:

1. En premier lieu: _____
2. Ensuite: _____
3. Puis: _____
4. Enfin: _____

Question 2:

Pourriez-vous comparer sur une échelle allant de "Plutôt différents" jusqu'à "Plutôt semblables", les étudiants belges en géneral avec les étudiants de chacune des régions du monde les mieux représentées à LLN? (cf Table 1).

Appendix B

BRUSSELS-LOUVAIN STUDY: THE QUESTIONNAIRE

a.QUESTIONNAIRE 1

PAGE 1:

Nous sommes un groupe d'étudiants de l'ULB(UCL) qui s'intéresse aux relations existant dans les universités entre nous autres, étudiants belges, et les étudiants issus des pays nord-africains, et ceci particuliérement dans votre(notre) université.

Nous aimerions avoir ton avis à propos de 2 groupes de personnes.

Dans le questionnaire qui suit, nous te proposons de donner les caractéristiques qui sont pour toi les plus importantes, les plus fréquentes, ou encore les plus typiques des personnes appartenant à chacun de ces deux groupes.

Il va de soi que les personnes sont toutes différentes les unes des autres et qu'il n'est souvent pas facile de décrire un groupe de façon générale. Pourtant, il est également vrai qu'il existe certaines caractéristiques plus présentes chez certains groupes de personnes que chez d'autres.

C'est pour ces raisons que nous ne te demandons que d'insister sur les 10 caractéristiques que tu trouves les plus importantes, les plus fréquentes ou les plus frappantes chez les personnes qui appartiennent à chacun de ces deux groupes.

Sur la page suivante, tu verras le nom des deux groupes et, en dessous de chacun d'eux, des phrases que nous te demandons de compléter en indiquant ce que sont pour toi les caractéristiques les plus fréquentes, les plus importantes ou encore les plus typiques des membres de ce groupe.

Nous te remercions d'avance pour ta collaboration.

PAGE 2:

Ce questionnaire est rigoureusement confidentiel. Nous te demandons la plus grande sincérité dans tes réponses. Pourrais-tu nous donner quelques renseignements d'ordre général avant de répondre?

TON AGE:_____ ans.
TON SEXE: Masculin |__|; Féminin |__|.
TON ANNEE D'ETUDES:_____
TON SECTEUR D'ETUDES:_____
TA NATIONALITE:_____

PAGE 3:

Ce que nous te demandons c'est de décrire d'abord le groupe des "étudiants nord-africains (belges)" et ensuite le groupe des "étudiants belges(nord-africains)".

LES ETUDIANTS NORD-AFRICAINS (LES ETUDIANTS BELGES) DE L'UCL	LES ETUDIANTS BELGES (LES ETUDIANTS NORD-AFRICAINS) DE L'UCL
1-Ils sont_____	1-Ils sont_____
.	.
.	.
.	.
10-Ils sont_____	10-Ils sont_____

b.QUESTIONNAIRE 2 (Value-Connotations).

PAGE 1:

Le but de ce questionnaire est de savoir comment les gens jugent une série de caractéristiques de personnes, d'actions, d'états d'esprit, etc. Ce que nous vous demandons est de dire dans quelle mesure ces caractéristiques, ces états d'esprit, ces manières de voir les choses, vous plaisent ou vous déplaisent. Pour qu'on puisse analyser les réponses de toutes les personnes ayant répondu au questionnaire, vous devrez répondre sur des échelles. Voici comment vous devez vous y prendre.

(STANDARD INSTRUCTIONS FOR A 7-POINT SCALE WITH "Sympathique" AND "Antipathique" AS END-POINTS).

PAGE(S) 2:

Questions are presented in the following format:

Une personne qui est (TRAIT-DESCRIPTOR):

Sympathique :__:__:__:__:__:__:__: Antipathique

Appendix C

NORM STANDARDS STUDY: THE QUESTIONNAIRE

PAGE 1:

QUESTIONNAIRE SUR LA VIE ETUDIANTE

Ce qui suit fait partie d'une étude plus large portant sur ce que les étudiants de LLN pensent à propos de certains aspects de leur vie sur le site.

L'année passée nous avons mené une enquête sur ce thème, où nous demandions aux personnes interrogées de nos donner leurs avis sur différentes personnes et événements avec lesqueles on est confronté dans la vie de tous les jours sur le site. Certains aspects se sont montrés pertinents pour la majorité des personnes. Le présent questionnaire essaye d'élargir l'information que nous avons recueilli lors de cette enquête. Il nous aidera à mieux connaître la vie quotidienne à LLN. C'est pour celà que votre opinion personnelle est très importante. Il n'y a donc pas de réponses correctes ou incorrectes ni bonnes ou mauvaises. C'est votre opinion personnelle seule qui compte.

Ce que nous vous demandons est de donner votre impression à propos de certaines choses, soit avec lesquelles vous avez eu un contact direct, soit à propos desquelles vous avez entendu parler, soit encore à propos desquelles vous avez une idée personnelle qui peut être plus ou moins définie mais qui est néanmoins la vôtre.

Etant donné la longueur de notre enquête nous avons décidé de diviser les questions par différents questionnaires. Nous vous demandons ainsi de répondre uniquement à la partie des questions que nous vous présentons dans ce questionnaire-ci. D'autres personnes répondront à d'autres questions. Ceci n'a pour objectif que de vous épargner du temps.

Le plus souvent, il y aura lieu de répondre sur des échelles. Voici comment vous devrez vous y prendre.

(STANDARD INSTRUCTIONS FOR A 7-POINT SCALE)

PAGE 2:

Imaginez que vous cherchiez un co-kotteur pour le reste de cette année académique. Imaginez aussi que 6 personnes se présentent, chacune appartenant à une des 6 regions du monde les mieux représentées à LLN. En considérant que toutes 6 personnes étaient en égalité de circonstances, que vous n'aviez pas d'autres informations à leur propos, et, que vous deviez accepter une de ces personnes le plus vite possible, laquelle, appartenant à une nationalité autre que la vôtre souhaiteriez-vous le plus avoir comme co-kotteur? (biffez votre nationalité et ordonnez votre choix pour les restantes, en écrivant un "1" en face de celle que vous souhaiteriez le plus, un "2" en face de la suivante, puis un "3", un "4" et ainsi de suite jusqu'à celle que vous souhaiteriez comme co-kotteur en cinquième place).

un étudiant belge .....:_:
un étudiant centre-européen (non belge) .....:_:
un étudiant latino-americain .....:_:
un étudiant nord-africain .....:_:
un étudiant nord-americain .....:_:
un étudiant sud-européen .....:_:

Pourriez-vous comparer sur une échelle allant de "Plutôt semblables" jusqu'à "Plutôt différents", les étudiants belges en général avec les étudiants de chacune des regions du monde les mieux représentées à LLN?

PAGE 3:

Avez vous des copains: (Etudiants belges, etudiants centre-africains, etudiants centre-européens[non-belges], étudiants latino-americains, etudiants nord-africains, étudiants nord-americains, étudiants sud-européens)?
7-point scales varying between "Aucun" and "Beaucoup".

Parlez-vous d'habitude avec des (idem).
7-point scales varying between "Fréquemment" and "Rarement".

PAGE 4:

Lors de notre précédente enquête, un certain nombre de cas était assez fréquemment décrit. Voici un cas typique parmi ceux que nous avons recueilli. Essayez d'imaginer les personnes décrites telles qu'elles sont dans la réalité avant de remplir les échelles suivantes.
(Experimental manipulation followed by 7-point scales on the traits listed on Appendix I)

PAGE 5:
Vous voici arrivé à la fin du questionnaire. N'oubliez pas de vérifier si vous n'avez passé aucune question. Pourriez-vous nous fournir encore quelques informations complémentaires?
Votre âge: |__|__| ans.
Votre sexe: (cochez une croix sur la bonne case):
Masculin |__| Feminin |__|
Votre nationalité (en majuscules, svp):

Appendix D

AGE STUDY: THE QUESTIONNAIRE

PAGE 1:

ETUDE SUR LA PERSPICACITE SOCIALE

Avec cette étude nous essaions de connaître la perspicacité sociale des personnes, c'est-à-dire, la capacité qu'elles ont de saisir certaines caractéristiques sociales d'une autre personne, sur base d'une quantité relativement limitée d'informations. C'est votre perspicacité sociale qui nous intéresse avec ce questionnaire.

Vous allez lire un texte que nous vous présentons sur la page suivante. Le personnage y est décrit de façon relativement ambigue. Ce que nous vous demandons très précisement est d'essayer de déterminer l'âge de cette personne.

PAGE 2:

(SKETCH; see Study 4)

Vous voici arrivé à la fin du texte. Essayez de vous faire une image de la personne qui y est décrite. A votre avis, le personnage est âgé d'entre (cochez une seule croix sur la case qui convient le mieux à votre impression):

entre 16-23 :__:	entre 48-55 :__:
entre 24-31 :__:	entre 56-63 :__:
entre 32-39 :__:	entre 64-70 :__:
entre 40-47 :__:	

Appendix E

THE NORTH-AFRICAIN STUDY: THE QUESTIONNAIRE

PAGE 1:

(See Choice of an Outgroup: Appendix A).

PAGE 2:

(STANDARD INSTRUCTIONS FOR A 7-POINT SCALE, RANGING FROM "Sympathique" TO "Antipathique").

PAGE(S)3:

Trait-Descriptors (see Appendix K.b).

* The questionnaire employed in the pretest is identical to this one, except for the trait-descriptors (see Appendix K.a).

Appendix F

THE HEYSEL STUDY: THE QUESTIONNAIRE

PAGE 1:

FOOTBALL ET VIOLENCE

Vous êtes certainement au courant des événements qui se sont produits au stade du Heysel avant la rencontre Liverpool-Juventus de Turin. Vous n'êtes également pas sans savoir que ce n'est pas la première fois que ce genre de choses arrive.

Imaginez maintenant que des supporters ALLEMANDS (BELGES) plutôt qu'Anglais, provoquent le même phénomène de panique lors d'un match entre leur club et un autre. Ce qu'on vous demande dans le questionnaire qui suit est de décrire ces supporters ALLEMANDS (BELGES) fictifs à l'aide d'un certain nombre d'adjectifs.

Avant de commencer à répondre au questionnaire proprement dit, pourriez-vous nous donner quelques informations?

Votre sexe: M F (entourez la bonne lettre).

Votre nationalité:_____

Votre âge:_____

PAGE 2:

(STANDARD INSTRUCTIONS FOR A 7-POINT SCALE WITH END-POINTS LABELED "Plutôt oui" AND "Plutôt non").

PAGE(S) 3:

LES SUPPORTERS ALLEMANDS(BELGES) CAPABLES DE SUSCITER -ce:UNE SITUATION DE PANIQUE

(TRAIT-DESCRIPTORS, see Appendix L).

PAGE 4:

Pourriez-vous nous fournir encore quelques informations supplémentaires? Cochez une croix dans la case qui équivaut le mieux à votre réponse:

Dans quelle mesure vous intéressez-vous au football?

Beaucoup :__:__:__:__:__:__:__: Pas-du-Tout

Dans quelle mesure vous considérez-vous comme supporter d'un club de football?

Grand supporter :__:__:__:__:__:__:__: Non-supporter

Jouez-vous régulièrement au football?

Très souvent :__:__:__:__:__:__:__: Jamais

Combien de matches voyez-vous en moyenne (sur le terrain ou à la TV)?

_____

Dans quelle mesure avez-vous suivi les événements du Heysel à la radio, la TV, dans les journaux, etc.?

De très près :__:__:__:__:__:__:__: Pas-du-tout

Selon vous, quelles sont les causes de ce qui s'est produit au Heysel? (FREE ANSWER).

Appendix G

RAW-DATA FROM THE OUTGROUP CHOICE STUDY

1.Variables:
Line 1: Subject, 1rst choice, 2nd choice, 3rd choice, 4th choice.
Line 2: Subject, 1rst rejection, 2nd rejection, 3rd rejection, 4rth rejection.
Line 3: Subject, similarity ratings: Center-African, South-American, South-European, North-American, Center-European, North-African.
2.Format: (I3, FREE/I3, FREE/I3,6I1)
3.Number of Cases: 35

```
01 Allemand Francais
01
01 755217
02 Americain Asiatique Indien Europeen(CEE)
02 Arabe Africain(Noir)
02 346717
03 Sud-Americain Arabe Africain(Noir)
03
03 252213
04 Arabe Espagnol Asiatique Nord-Americain
04
04 342214
05 Francais Italien Africain Anglais
05 Asiatique Americain
05 243524
06 Nord-Americain Europeen Asiatique
06 Marocain Sud-Americain Moyen-Orient Asiatique
06 442326
07 Africain Sud-Americain Nord-Americain
07
07 662216
08 Bresilien Allemand Chinois Roumain
08 Irakien Bulgare Turc Papou
08 532216
09 Anglais Suisse Italien Allemand
09 Nord-Africain Sud-Americain Centre-Africain Europe (Est)
09 541115
10 Italien Espagnol Suisse Francais
10 Nord-Africain Noir
10 743327
11 Europeen Nord-Americain Asiatique Afrique(Noir)
11 Nord-Africain Afrique(Noir)
11 322226
12 Chinois Sud-Americain Suisse Italien
12 Centre-Africain Nord-Africain
12 622616
13 Oriental Sud-Americain Africain Italien
13
13 554446
14 Americain Hollandais Luxembourgeois Senegalais
14 Francais
14 654325
15 Francais Anglais Neerlandais Allemand
15
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15 522113
16 Europeen Sud-Americain
16 Africain Asiatique
16 722217
17 Sud-Americain Chinois Africain Hollandais
17
17 111117
18 Asiatique Sud-Americain Africain(Noir) Nord-Africain
18
18 541216
19 Allemand Americain Senegalais Grec
19
19 544214
20 Nord-Americain Europeen(Centre) Europeen(Sud) Sud-Americain
20 Nord-Africain Centre-Africain Sud-Americain Europeen(Sud)
20 753216
21 Anglais Libanais Italien Russe
21
21 342214
22 Asiatique Africain(Noir)
22 Arabe Hollandais
22 252116
23 Portugais Africain(Noir) Grec Nord-Africain
23
23 743215
24 Oriental Luxembourgeois
24 Hollandais Italien Francais Arabe
24 776517
25 Europeen Asiatique Americain Africain
25
25 753215
26 Nord-Americain Europeen
26 Africain
26 763313
27 Italien Russe Argentin Canadien
27 Francais Tunisien Americain Suisse
27 473216
28 Americain Francais Suedois Italien
28
28 675436
29 Europeen(Nord) Europeen(Sud) Americain Oceanien
29 Maghrebien Arabe Turc Extreme-Orient
29 553327
30 Americain Allemand Zairois Sud-Americain
30 Nord-Africain
30 662216
31 Anglais Americain Japonais Francais
31 Italien Espagnol Russe
31 544336
32 Luxembourgeois Allemand Anglais Francais
32 Nord-Africain Centre-Africain
32 753217
33 Europeen Asiatique Americain Africain
33
33 755227
34 Anglo-Saxon Sud-Americain
34
34 331112
35 Centre-Africain Francais Italien Grec
35
35 232213

Appendix H

RAW-DATA FROM THE BRUSSELS-LOUVAIN STUDY

ASSOCIATIONS

1.Variables:
Subject, associations: 11=Louvain/Belgian Students
12=Louvain/North-African Students
13=Brussels/Belgian Students
14=Brussels/North-African Students
2.Format: (I5, FREE)
3.Number of Cases: 117

0001 INFLUENCABLE11 PRENDREDECISION-11 SEBORNERSYLLABU11 SEBORNERSOIREE11
0001 CONNAITREVRAISENTIMENT-11
0002 JEUNE11 SANS-GENE11 STUDIEUX11 RICHE11 EGOISTE11
0002 XENOPHOBE11 GUINDAILLEUR11 PASSAGE-LLN11 RAPIDE11
0003 SECTAIRE11 BOURGEOI11 TIMIDE11 COMMUNICATIF-11 ORGANISATEUR11
0003 PRETENTIEUX11
0004 HOMOGENEITE-11 CLAN11 JEUNE11 D'ABORD-FACILE-11
0005 BOURGEOI11 SERIEUX11
0006 PROPRE11 SOCIABLE11 STUDIEUX11 SOLIDAIRE11 BOURGEOI11
0006 PRATIQUE11
0007 POLITISE-11 EGOISTE11 INDIVIDUALISTE11 S'INQUIETER-EMPLOI11
0007 BOURGEOI11 HOMOGENEITE-11 PESSIMISTE11
0008 OUVERT11 CLAN11 EGOISTE11 AIME-S'AMUSER11
0008 SERIEUX-11 XENOPHOBE11
0009 ACCUEILLANT11 TIMIDE11 INTELLIGENT11 UNI11
0009 OUVERT11 GAI11 AIME-S'AMUSER11
0010 GUINDAILLEUR11 OUVERT-11 DIFFERENT-DE-CHEZ-EUX11
0010 COMMUNAUTAIRE-DIFFICILE11 FACILE-A-VIVRE11 BOURGEOI11 AIME-UNIF11
0011 POLITISE-11 INDIVIDUALISTE11 RICHE11
0011 VOULOIR-DIPLOME11 DEPENDANCE-PARENT11
0012 EGOISTE11 OUVERT-11 GUINDAILLEUR11 SNOB11 MESQUIN11 COMPLIQUE11
0013 CLAN11 FIER11 XENOPHOBE11 FIER11
0014 AVANTAGE11 SERIEUX11 MAJORITE1 AIME-S'AMUSER11
0014 CULTIVE-11 A-LA-MODE11 XENOPHOBE11
0015 FAINEANT11 MAJORITE1
0016 AVANTAGE11 CONSCIENCE-11 SUPERFICIEL11 EGOISTE11
0016 STUDIEUX14 DEPENSIER11 BLASE11 ENTHOUSIASTE11 GENEREUX11
0016 XENOPHOBE-11
0017 OUVERT-11 PERSONNEL11 OUVERT-11 DIFFICULTE11
0017 PUDEUR11 AIME-S'AMUSER11
0018 AIME-S'AMUSER11 ENGAGE-11 CLAN11 SUPERFICIEL11
0018 SPORTIF-11
0019 MANGER11 BUVEUR11 DORMIR11 BAISE11 DEPENSIER11 PARLER11 RATIONEL11
0019 STUDIEUX11 AIME-S'AMUSER11
0020 FROID11 AMBITIEUX11 HUMOUR-11 OUVERT-11
0021 PARLER-FRANCAI11 CHEZ-SOI11 A-LA-MODE11
0021 XENOPHOBE11 GUINDAILLEUR11 VOYAGE11
0022 BLANQ1 MAJORITE11 TOU-GENRE11 GUINDAILLEUR11 STUDIEUX11
0023 ANXIEUX11 DEBROUILLARD11 STUDIEUX11 EGOISTE11
0023 XENOPHOBE-11
0024 TOU-GENRE11 GUINDAILLEUR11 BRUYANT11 DEPENSIER11 SENTIMENTAL11
0024 INFORME11
0025 INDIFFERENT11 EGOISTE11 RESSENT-CRISE11 RICHE11
0025 AIME-CONFORT11 COUTUME-DIFFERENT11 XENOPHOBE11

0025 EMMETRE-AVI-SUR-LE-SITE11 ENGAGE11
0026 SOCIABLE11 ACCUEILLANT11 XENOPHOBE11 AIME-DISCUTER11 AIME-S'AMUSER11
0026 POLI-11 GENEREUX-11 FIER11
0027 OUVERT-11 MEFIANT11 FROID11 POLI-11 SNOB11
0028 AVANTAGE11 AIME-S'AMUSER11 DEPENDANCE-PARENT11
0028 ACCUEILLANT11 INDIFFERENT11 RICHE11 AIME-SPORT-D'HIVER11
0028 STUDIEUX11 FAINEANT11 GUINDAILLEUR11
0029 REVENDICATIF-11 INDIVIDUALISTE11 TOLERANT11 RATIONEL11
0029 XENOPHOBE-11 OUVERT-11 SECTAIRE11 PREOCCUPATION-ECONOMIE11
0029 EGOISTE11
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0002 AGE12 GHETTO12 REUSSITE-12 DIFFICULTE-ARGENT12
0002 ACCUEILLANT12 TIMIDE12 CONTESTATAIRE12 REVENDICATIF12 FIDELE12
0003 MINORITE12 COMMUNICATIF12 AVANTAGE-12 ACCUEILLANT12 ENTREPRENANT12
0003 SERVIABLE12 OUVERT12
0004 MAL-VU12 CRAINT12 EGOISTE12 CLAN12 INCONNU12
0004 COUTUME-DIFFERENT12 COUTUME-DIFFERENT12
0005 SEUL12 ACCUEILLANT12
0006 INTEGRE12 GHETTO12 INTERESSANT12
0006 ATTITUDE-CHOQUANTE12 COMMUNICATIF12
0007 POLITISE12 SOLIDAIRE12 GHETTO12 SUSCEPTIBLE12
0007 MENTALITE-DIFF12 BON-COEUR12 INTEGRE-12
0008 GHETTO12 INTEGRE12 CLAN12
0008 CRAINT12 CRAINT12 ENVAHISSANT12
0008 PROFITEUR12 MAL-VU12 SE-SENT-AGRESSE12
0009 UNI12 GHETTO12 SANS-GENE12 ACCUEILLANT12 GAI12
0009 AIME-S'AMUSER12 PROFITEUR12
0010 GHETTO12 OUVERT12 SE-COMPORTENT-COMME-CHEZ-EUX12
0010 POLITISE12 ACCEPTE-12 REUSSITE-12
0010 AIME-DISCUTER12 CASANIER12
0010 ASPIRER-A-VITE-TRAVAILLER12
0011 DEPAYSE12 FUIT-LEUR-PAYS12 TRADITIONALISTE12
0011 GHETTO12 TOURNE-V-AVENIR12
0012 CLAN12 OUVERT-12 GUINDAILLEUR12 SNOB12 MESQUIN12
0012 COMPLIQUE12
0013 STUDIEUX12 COUTUME-DIFFERENT12 MUSULMAN12 GHETTO12
0013 MEFIANT12 VIOLENT12 DANGEREUX12
0014 MAL-AIME12 GHETTO12 SOLIDAIRE12 DEPAYSE12
0014 POLITISE12 DIFFICULTE-ARGENT12 DEPENDANT-LEUR-GOUVERNEMENT12
0014 D'ABORD-FACILE-12 SPORTIF12
0014 EXPANSIF12
0015 REUSSITE-12 INTEGRE-12
0016 COURAGEUX12 FAINEANT12 OUVERT12 OUVERT-12 MERITE12
0016 INTERESSE12 ENVAHISSANT12
0016 AIME-CONTRAINTE12 COMPLIQUE12
0017 GHETTO12 ATTACHE-LEUR-LANGUE12 ACCUEILLANT12 PARLER12
0018 SUSCEPTIBLE12 INTEGRE-12 MAL-VU12 REUSSITE-12
0018 ACCUEILLANT12
0019 SALE12 RONFLENT12 BAISE12 HONNETE-12 VIOLENT12 ABOYENT12
0019 BRUYANT12 SALE12
0020 PROFITEUR12 GHETTO12 COUTUME-DIFFERENT12 COUTUME-DIFFERENT12
0021 GHETTO12 ATTACHE-LEUR-LANGUE12 MAL-HABILLE12
0021 DISTANT-BELGE12 GUINDAILLEUR-12 POLITISE-12 DISTANT-BELGE12
0022 COULEUR(PEAU)12 STUDIEUX12 MINORITE12 STUDIEUX12 OUVERT12
0023 DETENDU12 UNI12 FAINEANT12 AIME-S'AMUSER12
0023 SPORTIF12
0024 INCONNU12 GHETTO12 INCONNU12 VOLONTAIRE12 PERSEVERANT12 AVANTAGE12
0025 GHETTO12 METTRE-TOUT-EN-COMMUN12 STUDIEUX12 D'ABORD-FACILE-12
0027 INTERESSANT12 APATHIQUE-12 SORTENT-FIN-SOIREE12
0027 GHETTO12
0026 GHETTO12 POLI-12 INTELLIGENT-12 GENEREUX12 SANS-GENE12
0026 UNI12
0027 UNI12 OUVERT-12
0027 INTEGRE-12 DIFFERENT-BELGE12 SPORTIF12
0028 JOBISTE12 LIVRE-EUX-MEME12 ACCUEILLANT12
0028 OUVERT12 ECONOMISTE12 ETUDIANT12 ALLER-CINEMA12 GUINDAILLEUR12
0029 GHETTO12 SERVIABLE12 EXPANSIF12 DIFFICULTE-ARGENT12
0029 INCONNU-12 D'ABORD-FACILE-12 DOIVENT-S'ORGANISER-SOIREE12

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0030 INDIFFERENT11
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0031 DU-CENTRE11 POLITISE-11 RICHE11 MENTEUR11
0032 CONSCIENT-11 GUINDAILLEUR11 METRO-BOULOT-DODO11
0032 BRUYANT11 ABIMENT-LLN11 ABIMENT-LLN11 ABIMENT-LLN11 CON11
0033 SUPERFICIEL11 GUINDE11
0033 BOURGEOI11 COMMUNICATIF11 SERIEUX11 INTEGRE-11
0033 RADIN11 MEFIANT11 EGOISTE11
0034 XENOPHOBE-11 CHRETIEN11 PHALLOCRATE11
0034 GUINDAILLEUR11 APPRECIENT-MANIF-CULTURELLE11 STUDIEUX11
0034 RICHE11
0035 XENOPHOBE11 PESSIMISTE11 INDIVIDUALISTE11 EGOISTE11
0036 D'ABORD-FACILE-11 FORMER-CLASSE11 COHESION-11 MEFIANT11
0036 ENGAGE11 FAINEANT11
0037 AIME-S'AMUSER11 SERIEUX-11 EGOISTE11 RESPECTUEUX-11 RICHE11
0037 CLAN11
0038 XENOPHOBE11
0039 BUVEUR11 RICHE11 EN-FAMILLE11
0040 ACCUEILLANT-11 BLANÇ1 CASANIER11 CASANIER11
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0041 EGOISTE11 CLAN11 AIME-S'AMUSER11
0041 POLITISE-11 OPTIMISTE11 INCONNU11
0042 FROID11
0043 VIVRE-ENDEHOR11 BOURSIER-11 D'ABORD-FACILE11 FAINEANT11
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0044 CLAN11 SANS-GENE11 GUINDAILLEUR11 EGOISTE11
0044 UNI-POUR-LE-MEILLEUR11 INDIVIDUALISTE11
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0045 COURAGEUX11 EGOISTE11 BOURGEOI11 CATEGORIQUE11
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0047 OUVERT11 TRANQUILLE11 TRANQUILLE11 EQUILIBRE11 XENOPHOBE11
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0048 RICHE11 GAI11 GAI11
0049 MATURITE-11 CLAN11 OUVERT-11 SUPERFICIEL11
0049 BOURGEOI11 CULTIVE-11 POLITISE-11 GAI11
0049 SERIEUX-11 HYPOCRITE11 NEUTRE11 ACTIF-11 TRANQUILLE11
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0050 ARRIVISTE11
0051 GUINDAILLEUR11 TRADITIONALISTE11 NATIONALISTE11
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0053 CHRETIEN11 PRETENDU-CIVILISE11 BOURSIER11
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0055 SEUL-11
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0057 EGOISTE11 TIMIDE11 TOURNE-V-AVENIR11
0057 PERDRE-TRADITION11 EGOISTE11 CONTACT-11
0057 INTEGRE11 BOURGEOI11 RATIONEL11 CRANEUR-11
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0034 PHALLOCRATE12 SUSCEPTIBLE12 MEFIANT12 ACCUEILLANT12
0034 DIFFICULTE-ARGENT12 GHETTO12
0035 TRADITIONALISTE12 GHETTO12 REUSSITE-12
0035 INTEGRE12 CUISINE-DIFFERENTE12
0036 GHETTO12 SOLIDAIRE12 INTEGRE-12 COURAGEUX12 GHETTO12
0036 MINORITE12
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0039 EN-FAMILLE-12
0040 ACCUEILLANT12 COULEUR(PEAU)12 DEPAYSE12
0040 GHETTO12
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0041 PESSIMISTE12
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0050 ACCUEILLANT12 SOLIDAIRE12
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0052 PROPRE12 SUSCEPTIBLE12 GHETTO12 SOLIDAIRE12 ACCUEILLANT12 IRRITABLE12
0052 VIOLENT12 HONNETE12 DEPAYSE12
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0054 STUDIEUX12
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0055 INTEGRE-12 EN-FAMILLE12 DOCTORANT12 RICHE12
0055 SUBIR-RACISME12 SEUL12
0056 GAUCHISTE12 GAUCHISTE12 GHETTO12 OUVERT-12
0056 LIBERAUX-12 TIMIDE12
0057 GHETTO12 SEUL12 TRADITIONALISTE12 DETENDU12 ACHARNE-12
0057 DETENDU12 EXPANSIF12 INSTABLE12
0058 ACCUEILLANT12 SEUL12 GHETTO12 TOU-GENRE12 DIFFICULTE12
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0061 VIE-SEXUELLE-DESORDONNEE13 TOURNE-V-AVENIR13 GUINDAILLEUR13
0061 EGOISTE13 BESOIN-AUTRUI13

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0063 FAINEANT13 AIME-S'AMUSER13
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0064 TOLERANT13
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0065 TOU-GENRE13 POLITISE-13 DEPENSIER13
0066 SANS-GENE13 MEFIANT13 AVANTAGE13
0066 TOU-GENRE13 INFORME-13 OUVERT-13 BLASE13 LIRE-13
0066 BUVEUR13 VIVOTER13
0067 SAN-VALEUR13 AIME-S'AMUSER13 STUDIEUX13
0067 APATHIQUE13
0068 RIGOLARD13 METHODIQUE13 DEPENDANCE-PARENT13 VOLONTAIRE13 INTELLIGENT13
0069 EN-GROUPE13 CULTIVE13 FAINEANT13 SPORTIF13 GUINDAILLEUR13
0069 IMPERSONNEL13 BOURGEOI13 A-LA-MODE13 MOBILE13
0069 SE-MOQUER-ETRANGER13
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0070 OPTIMISTE13 INTEGRE-13 OUVERT13
0071 DIFFICULTE-ARGENT13 INTEGRE-13
0071 GHETTO13 MAL-VU13
0071 LIBERTE-D'ESPRIT13
0072 OUVERT13 GUINDAILLEUR13 RICHE13 HONNETE13 MEFIANT13
0072 DIPLOMATE13 AIME-PELONNER13 SATISFAIT13
0073 EGOISTE13 OUVERT-13 RATIONNEL13 TOU-GENRE-D-OPINION13
0073 RICHE13 DETENDU13 A-LA-MODE13
0074 RICHE13 IGNORER-AVENIR13 DEROUTE-PAR-MONDE-QUI-CHANGE13
0074 CONSCIENCE-13 CONSERVATEUR13
0074 XENOPHOBE13
0074 PASSAGE-LLN13 CEUX-GAUCHE-PRET-A-AGIR13
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0075 GENEREUX-13 REUSSITE13
0076 CLAN13
0076 CRAIGNENT-DIFFERENCE13
0077 AIME-S'AMUSER13 ORGANISATEUR13
0077 FAINEANT13 SPORTIF-13 SNOB-13
0077 OUVERT13 IDEALISTE13 CLASSIQUE13
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0080 BROSSENT13 XENOPHOBE13 CHERCHER-COMPAGNE(ON)13 FREQUENTENT-CERCLE13
0080 SE-CHERCHENT-EUX-MEME13
0079 SERIEUX13 ANXIEUX13 RICHE-13 SERIEUX13 INTELLIGENT13
0079 STUDIEUX13 SOUCIEUX13 PRESSE13 VOLONTAIRE13
0081 BOURGEOI13 SPORTIF13 A-LA-MODE13 SUPERFICIEL13 ACCUEILLANT13
0082 ENTHOUSIASTE13 ACCUEILLANT13 ACTIF13 SERIEUX13 MATURITE-13
0082 STUDIEUX13
0083 STUDIEUX13 GUINDAILLEUR13 HUMOUR-13 AIME-ETRE-EMMERDE-13
0084 OUVERT-13 CASANIER13 EGOISTE13 BLASE13 ATTITUDE-CHOQUANTE13
0084 SERIEUX-13 CONSCIENT-13 XENOPHOBE-13
0084 DECEVANT13 COMMUNICATIF-13
0085 MOTIVE-13 INTERESSE13 ACCUEILLANT13 OUVERT13 ENGAGE-13 CHRETIEN-13
0085 REVENDICATIF-13 AIME-UNIF13
0086 PRETENTIEUX13 PEINARD13 PRESSE13
0087 GUINDAILLEUR13 LISENT13 ORGANISATEUR13 REVENDICATIF13 CULTIVE13
0088 INDIFFERENT13 INDIVIDUALISTE13 SERIEUX-13
0088 TOU-GENRE13
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0061 TRADITIONALISTE14 UNI14 SUSCEPTIBLE14 ACCUEILLANT14
0061 D'ABORD-FACILE-14 ATTITUDE-CHOQUANTE14
0062 PRESSE14 COMMUNICATIF-14
0063 BRUYANT14 TIMIDE14 SE-SENT-AGRESSE14 HONNETE14
0063 STUDIEUX14 ACCUEILLANT14 GHETTO14 AIME-S'AMUSER14
0063 OUVERT14 INTEGRE-14
0064 D'ABORD-FACILE14 GHETTO14 REUSSITE14 REUSSITE-14
0065 INTEGRE-14 STUDIEUX14 DIFF-TRAV-IMMIGRE14
0065 CULTIVE14 ENGAGE14 DEPRIME14 COULEUR(PEAU)14

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0066 POLITISE14 VOLONTAIRE14 GAI14 ONT-PRINCIPE-STRICT14 SUSCEPTIBLE14
0066 INTERESSANT14
0067 OUVERT-14 ACCUEILLANT14 STUDIEUX14 CONSCIENCE14
0067 TRADITIONALISTE14
0068 DEPRIME14 HONNETE14 MOTIVE14 METHODIQUE-14
0069 CLAN14 CHERCHER-LIEUX-RENCONTRE14 D'ABORD-FACILE-14
0069 TIMIDE14 DIFFICULTE-LANGUE14 INCONNU14 MAL-HABILLE14
0069 GHETTO14 COUTUME-DIFFERENT14 VOYAGE-14 AIME-S'AMUSER14
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0071 BOURGEOI-14 ATTACHE-CONFORT-14
0072 XENOPHOBE14 CLAN14 SEUL14 VIOLENT14 BUVEUR14
0072 GHETTO14 ACCUEILLANT14 COMPLEXE14
0073 UNI14 EXPANSIF14 INTEGRE-14 POLITISE14 PROFITEUR14
0073 DEBROUILLARD14 GAUCHISTE14 D'ABORD-FACILE-14 HYPOCRITE14 IRRITABLE14
0074 INTEGRE14 ATTACHE-LEUR-PAY14
0075 COMMUNICATIF14 SOLIDAIRE14 FAINEANT14 SUSCEPTIBLE14 FAINEANT14
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0077 GHETTO14 MINORITE14 ACTIF14 INTEGRE-14
0077 MAL-A-L'AISE13
0078 DIFFICULTE-LANGUE14 COULEUR(PEAU)14 COUTUME-DIFFERENT14 AGE14
0078 SEXE-MASCULIN14 STUDIEUX14
0079 VOLONTAIRE14 INTELLIGENT14 SERIEUX14 PRESSE14 SERIEUX14 SOUCIEUX14
0079 RICHE-14 STUDIEUX14 ANXIEUX14
0080 MOTIVE14 ALLER-COUR14 GHETTO14 RICHE14 SEXE-MASCULIN14
0080 SE-CHERCHENT-EUX-MEME14
0081 OUVERT-14 VOLONTAIRE14 CARACTERE14 ACCEPTE-14 D'ABORD-FACILE14
0081 DEBROUILLARD14 MISOGINE14 FILIOUX14
0082 ACCUEILLANT-14 GHETTO14 BRUSQUE14 FREQUENTABLE-14 ACCUEILLANT-14
0082 ENNUYEUX14 ENVAHISSANT14 MAJORITE6
0083 SALE14 VIOLENT14 BRUYANT14 ACCUEILLANT14 POLI14 INTEGRE-14 MOTIVE14
0083 AVANTAGE-14
0084 COUTUME-DIFFERENT14 GHETTO14 ACCUEILLANT14
0084 INCONNU14 DIFFICULTE-ARGENT14 DIFFICULTE-LANGUE14
0084 DISTANT-BELGE14
0085 INTERESSANT14 INTELLIGENT14 GHETTO14 AVANTAGE-14 INCONNU14
0085 ACCEPTE-14 PERSECUTE14 PERSECUTE14 DIFF-TRAV-IMMIGRE14
0086 DETENDU14 A-LA-MODE14 MEFIANT14 RICHE14 DEPENSIER14
0086 JOBISTE14
0087 GHETTO14 ORGANISATEUR14 AIME-S'AMUSER14 CULTIVE14 VOYAGE14
0088 ACCUEILLANT14 SUSCEPTIBLE14 ENNUYEUX14 A-L'AISE14 FIER14
0089 CHRETIEN13 BLANC3 MODERE13 RICHE13 CONSERVATEUR13 JEUNE13
0089 MOTIVE-13
0090 MAJORITE7 OUVERT13 SANS-GENE13 STUDIEUX13
0090 SE-CROIENT-TOUT-PERMI13
0091 EGOISTE13 TROP-PRE-LEUR-ETUDE13 PESSIMISTE13 LIBERAUX13
0091 AIME-UNIF13 ACCUEILLANT-13 CREATIF-13 OUVERT-13
0091 SPORTIF-13 CONSERVATEUR13
0092 POLITISE-13 AMBITIEUX13 GUINDAILLEUR13 TOLERANT-13
0092 REFLET-CRISE14 VOIE-EXTRA-PROFESSIONNELE-13
0093 TOU-GENRE13 REPRESENT-LA-NATION13 GUINDAILLEUR13
0094 ACCUEILLANT13 OUVERT13 MAJORITE7
0095 GUINDAILLEUR13 SUPERFICIEL13 CON13 MOTIVE-13 AIME-S'AMUSER13
0095 CREATIF-13 VOULOIR-SE-CASER13
0096 DEBROUILLARD13 BOURGEOI13 METHODIQUE13 CAPITALISTE13
0097 REUSSITE13 SE-MOQUER-ETRANGER13 FROID13
0098 CHEZ-SOI13 RESPECTUEUX-13 INFLUENCABLE13
0099 SOCIABLE13 TIMIDE13 EGOISTE13 INTERESSE13 SOLIDAIRE13 FAINEANT13
0099 CULTIVEL-13 GAI13 AIME-S'AMUSER13
0100 GUINDAILLEUR13 INTERESSANT13 SE-TUTOYENT13 OUVERT13 XENOPHOBE13
0100 ACTIF13 TROP-SERIEUX13 SERIEUX-13 GAI13
0101 OUVERT13 AIME-S'AMUSER13 BUVEUR13 FAINEANT13 DEPENSIER13 SPORTIF13
0102 AVANTAGE13 PERDENT-LEUR-TEMP13 BUVEUR13
0103 BOURGEOI13 EGOISTE13 COMMUNICATIF-13 FIER13
0104 DETENDU13 GUINDAILLEUR13 SECTAIRE13 ABSORBE13
0104 SUPERFICIEL13 EXPANSIF-13 FAINEANT13 FIER13 EGOISTE13
0104 VIVRE-PETIT-GROUPE13
0105 AIME-S'AMUSER13 CLAN13 LIBERTE-D'ESPRIT13 SECTAIRE13

0105 TRANQUILLE13
0106 SNOB13 ACCUEILLANT13 SERIEUX13 BOURGEOI13 APATHIQUE13 CONSERVATEUR13
0106 TROP-STUDIEUX13 OUVERT13
0107 INTEGRE13 INTEGRE13 CHEZ-SOI13 EGOISTE13
0107 SERVIABLE13 AIME-UNIF13
0108 DISTANT-BELGE13 XENOPHOBE-13 CLAN13 BUVEUR13
0108 AIME-S'AMUSER13
0109 ACCUEILLANT13 GUINDAILLEUR13 FREQUENTENT-CAFE13 INTERESSE-BELGE13
0109 FROID13
0110 SAN-VALEUR13 PRETENTIEUX13 MEFIANT13 RICHE13 POLITISE13
0110 CREATIF13
0111 CLAN13 FROID13 COMMUNICATIF-13 CONSERVATEUR13 CRAIGNENT-DIFFERENCE13
0111 XENOPHOBE13 INDIVIDUALISTE13 BOURGEOI13
0112 FAINEANT13 AIME-S'AMUSER13 SATISFAIT-13
0113 ALLER-COUR13 BAISE13 PASSAGE-LLN13 AIME-S'AMUSER13
0113 MENTALITE-BRUXELLOI13 VIOLENT13
0114 MAJORITE7 CLAN13 BRUYANT13
0115 TOU-GENRE13 EGOISTE13 INTEGRE13
0115 CHERCHER-COMPAGNON(NE)13 RICHE13 CASANIER13
0115 ABIMENT-LLN13
0116 GENTIL13 HONNETE13 CURIEUX13
0117 HONNETE13 INTELLIGENT13 INTERESSE13 PONCTUEL13 CHRETIEN13 AVANTAGE13
0117 ACCUEILLANT13 RICHE13 PRESENCE-D'ESPRIT13 CAPACITE13
0089 MUSULMAN14 COULEUR(PEAU)14 GAUCHISTE14 OUVERT-14 ARABE14 POLI-14
0089 CONTESTATAIRE14 DIFFICULTE-ARGENT14 AGE14 INTELLIGENT-MOYEN14
0090 MAJORITE8 GHETTO14 D'ABORD-FACILE-14 RESPECTUEUX14
0090 SERIEUX14 DEPAYSE14
0091 OUVERT-14 POLITISE14 GAUCHISTE14 XENOPHOBE14 AIME-DISCUTER14
0091 UNI14 ACCUEILLANT14 DEBROUILLARD14 TRADITIONALISTE14
0092 POLITISE14 REUSSITE-14 DIFFICULTE-ARGENT14 GHETTO14
0092 COUTUME-DIFFERENT14 REUSSITE-14 D'ABORD-FACILE-14
0092 ELITE14
0093 ELITE14 GUINDAILLEUR14
0094 VIOLENT14 BUVEUR14 VICIEUX14 INTELLIGENT14 FAUX-CUL14 PERSECUTE14
0094 ACCUEILLANT14
0095 D'ABORD-FACILE14 OUVERT14 DISTANT-BELGE14 ORIENTE14
0095 POLI14 SAVENT-CE-QU'IL-SONT14 INTEGRE-14
0096 SUSCEPTIBLE14 OUVERT14 TOU-GENRE14 MENTALITE-DIFF14
0096 SERVIABLE14
0097 ACCENT14 REUSSITE-14 TRADITIONALISTE14 COULEUR(PEAU)14
0097 MENTALITE-DIFF14 SE-FONT-ROUILLER14 CHALEUREUX14
0098 TIMIDE14 UNI14 D'ABORD-FACILE-14 ENNUYEUX-14
0099 SUSCEPTIBLE14 VIOLENT14 XENOPHOBE14 ENVIEUX14
0100 ACCUEILLANT14 CLAN14 HEUREUX-QU'ON-LEUR-PARLE14
0100 DIFFERENT-BELGE14
0101 INSTABLE14 COMPLEXE14 DRAGUEUR14 FIER14 STUDIEUX14 MEFIANT14
0101 PRETENTIEUX14
0102 REUSSITE-14 MOTIVE14 COMPLEXE14 GHETTO14 COULEUR(PEAU)14
0102 CAPACITE14 INTEGRE-14 SERIEUX14
0103 DETENDU14 FAINEANT14 ACCUEILLANT14 COMMUNICATIF14 FAINEANT14
0103 AIME-S'AMUSER14
0104 RESTE-WEEKEND14 GHETTO14 ACCUEILLANT14 SYMPATHIQUE-14 CRAINT14
0104 DEPAYSE14 INCONNU14 MEFIANT14 VIOLENT14 CONTESTATAIRE14
0105 TRANQUILLE14 GHETTO14 FAINEANT14 NEGLIGENT14
0106 DISTANT-BELGE14 XENOPHOBE14 ARRIVISTE14 EXPANSIF14 IMPULSIF14 VIOLENT14
0106 MAJORITE8 ENVAHISSANT14
0107 PERDU14 GHETTO14 INTEGRE-14 ACCUEILLANT14 SERVIABLE14
0107 MOTIVE14 ACCULTURATION-14
0108 GHETTO14 DISTANT-BELGE14 VIOLENT14 INTEGRE-14
0109 VIVANT14 GAI14 GAI14 REUSSITE-14 ATTACHE-LEUR-PAY14
0109 ACCUEILLANT14 INTERESSE-BELGE14 FREQUENTENT-CAFE14
0110 DETENDU14 A-LA-MODE14 INTEGRE14 DEFENDENT-LEUR-DROIT14 INTEGRE-14
0111 OUVERT14 VIVANT14 SUSCEPTIBLE14 ACCUEILLANT14 GAI14 UNI14 FIDELE14
0111 ATTITUDE-CHOQUANTE14 INTEGRE-14 XENOPHOBE14
0112 DIFFERENT-14 DIFFICULTE-ARGENT14 CUISINE-DIFFERENTE14
0112 SALE14 RESTE-WEEKEND14 D'ABORD-FACILE-14
0113 GHETTO14 SERIEUX14 ALLER-COUR14 DISTANT-BELGE14
0114 RECONNAISSABLE14 COULEUR(PEAU)14 GHETTO14 A-LA-MODE14

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0114 ACCENT14
0115 GHETTO14 BRUYANT14 MENTALITE-DIFF14 ELITE14 COUTUME-DIFFERENT14
0115 ENNUYEUX14
0116 GENTIL14 POLI14 STUDIEUX14 HONNETE14 HONNETE14
0117 LENT14 DEBROUILLARD-14 COMMUNICATIF-14 CREATIF14 PROFITEUR14 RICHE14
0117 STUDIEUX14 INTERESSANT14 DIFFERENT-BELGE14
0117 ACCENT14
```

VALUE-CONNOTATIONS BY JUDGES

1.Variables:
  a.Brussels/Belgian: être à la mode, être conservateur, aller aux cours, être consciencieux, réussir dans les cours, être actif, être différent, être honnête, être ouvert, être communicatif, être volontaire.
  b.Louvain/Belgian: être fermé aux étrangers, être ambitieux, être financièrement aisé, être contestataire, être peu ouvert, être discret, être heureux, être propre, être sectaire, être compliqué.
  c.Louvain/North-African: être sportif, être accueillant, être attaché à sa langue, être mal-vu, être courageux, être intégré, être phallocrate, être boursier, être en famille, être généreux, être nationaliste, être non respectueux, être pessimiste.
  d.Brussels/North-African: être motivé, être persecuté, être bien-habillé, être d'abord facile, être distant des belges être sérieux, être déprimé, avoir des difficultés linguistiques, appartenir à une élite, être fainéant, être intéressant, être joyeux, être sincère, être débrouillard.
2.Format:(I2,x,11I,x,10I,x,13I,x,14I)
3.Number of Cases: 14

```
01 52565667755 2546466517 5666661666466 66465666556675
02 66454727776 1744226613 7744661166411 616714441167777
03 64676777776 3433367725 5774761467611 64534517346766
04 55445656664 4554336433 5662553355622 52652536546666
05 52435644665 3655235624 6623544455623 63662244637775
06 33444555555 4534455434 5544551454414 52444534533555
07 46666777777 2544376414 6765551645614 55563444434446
08 66444746666 2662147723 6644665446632 63672334637777
09 46464747667 1663247735 6745665447612 62661514636776
10 43444756777 1445177514 7744662447414 466744443567777
11 44444545555 2544455424 5644554445424 4445444443555 5
12 43465767767 1642156524 6744662446511 724626244177777
13 66777757777 6771247552 6612775767145 716747177677777
14 65556777777 5766167745 7776776667711 767755337177777
```

Appendix I

RAW-DATA FROM THE NORM STANDARDS STUDY

1.Variables:
Target's Group Membership, Likability, Norm Standard, Subject, Positive Ratings, Negative Ratings, Choice, Similarity, Friends, Interactions.
Trait-Descriptors: agréable, intelligent, sociable, accueillant, gai, communicatif, superficiel, snob, méchant, non-respectueux, froid.
2.Format: (3F1.0,F2.0,2(X,6F1.0),X,2(F3.2,X),4(F1.0,X))
3.Number of Cases: 91

```
11101 261211 717217 140 400 1 1 1 1
11102 242222 472446 200 500 1 5 5 7
11103 365243 622247 340 550 1 1 1 1
11104 231221 766475 280 600 4 2 1 2
11105 643443 131114 400 250 5 3 6 6
11106 241142 512122 200 200 1 1 1 1
11107 264423 352445 300 450 1 1 1 1
11108 766655 336333 580 300 2 4 1 7
11109 122251 366111 220 100 1 1 5 5
11110 162222 172122 180 200 1 4 1 2
11111 144455 344455 380 500 1 1 1 1
11112 441222 244444 220 400 3 1 2 4
11113 241421 114477 200 700 1 2 1 2
12101 536566 633363 560 450 1 2 1 1
12102 567767 142222 640 200 1 2 1 1
12103 343444 544144 360 400 1 1 1 1
12105 213677 744141 500 250 1 1 1 1
12106 736677 231111 660 100 1 2 4 1
12107 777777 441443 700 350 1 1 1 1
12108 776564 115121 560 150 4 4 1 5
12109 674564 711214 500 250 1 1 1 3
12110 777374 114117 560 400 3 3 2 3
12111 676455 441444 520 400 1 1 1 1
12112 655555 452234 520 350 1 6 6 7
21101 654433 111433 400 300 1 1 1 2
21102 111747 713771 400 400 2 1 1 1
21103 466666 114222 560 200 3 4 6 4
21104 356667 411241 560 250 1 2 3 3
21105 371245 444414 300 250 4 2 1 1
21107 242164 744171 300 400 1 1 1 1
21108 133342 313111 260 100 2 1 2 7
21109 554424 322223 380 250 1 5 3 4
21111 111111 777777 100 700 1 1 1 1
21112 475425 145126 420 400 3 3 3 5
21113 775746 111116 600 350 5 3 3 4
21114 235545 711471 420 400 1 3 1 1
21115 171111 717117 100 400 1 7 1 1
21116 544644 324222 460 200 2 2 1 1
22101 111117 111777 220 700 1 1 1 1
22103 112242 226222 220 200 1 7 5 2
22104 121141 747477 160 700 1 1 1 1
22105 111111 157777 100 700 1 1 1 1
22106 434355 325242 420 300 1 3 5 6
22107 555354 444255 440 500 5 1 2 2
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22108	474457	551163	480	450	1	1	1	4
22110	333656	712356	460	550	2	5	3	2
22111	555555	324345	500	450	1	1	4	3
22112	414441	111111	260	100	1	3	1	1
22113	627666	246111	620	100	1	1	5	5
22114	542627	754261	520	350	1	1	1	1
22115	445557	513251	520	300	1	7	2	2
11201	451241	111141	240	250	1	1	1	4
11202	415544	323345	440	450	3	5	3	5
11204	657774	524114	620	250	1	3	1	4
11205	167444	746264	400	500	3	3	1	1
11207	111112	315144	120	400	1	1	5	6
11208	111111	111777	100	700	3	6	1	4
11209	452223	223447	260	550	4	4	7	7
11210	261233	433645	220	450	3	5	2	2
11212	677652	222216	520	350	1	1	1	2
11213	142111	711216	120	350	2	4	2	1
12202	676777	211111	660	100	3	5	6	6
12203	635444	444444	460	400	1	1	1	2
12204	744617	117111	500	100	1	1	1	1
12206	555435	334234	440	350	2	6	3	3
12209	645556	442142	540	300	1	1	1	1
12210	777755	444144	620	400	1	4	1	1
12211	655764	211111	560	100	1	3	1	1
12213	777777	625113	700	200	3	6	6	7
21201	667666	412142	620	300	1	2	1	1
21202	151141	444466	160	600	4	1	7	7
21203	757667	224112	660	150	1	1	4	3
21204	251111	625336	120	450	1	1	2	2
21205	362222	424225	220	350	2	3	4	3
21206	111111	477477	100	700	1	2	1	1
21207	224366	642324	420	300	1	2	5	4
21208	667636	435124	560	300	1	2	2	4
21209	111111	477777	100	700	1	1	1	1
21211	463354	564254	380	450	1	3	2	2
21212	151442	444443	240	350	1	2	3	2
21213	342111	111115	160	300	3	3	1	7
21214	111111	177177	100	700	2	4	1	1
22201	444544	422151	420	300	2	3	4	7
22202	647667	441114	640	250	1	1	5	6
22203	621153	464322	320	200	1	2	5	6
22204	667577	312432	640	250	2	6	5	5
22205	767756	312111	640	100	2	2	3	1
22206	747747	244444	640	400	1	3	4	6
22207	545454	444464	460	500	1	2	1	1
22208	717745	214122	600	200	1	1	1	1
22209	747537	414111	580	100	1	1	2	3

Appendix J

RAW-DATA FROM THE AGE STUDY

1.Variables:
Sketch, Subject, Target's Age.
2.Format: (I,X,I2,X,I)
3.Number of Cases: 37

```
1 01 2      2 11 7
1 02 2      2 12 6
1 03 2      2 13 5
1 04 2      2 14 5
1 05 2      2 15 5
1 06 1      1 16 6
1 07 2      2 17 4
1 08 1      2 18 7
1 09 2      2 19 5
1 10 2
1 11 2
1 12 2
1 13 2
1 14 3
1 15 6
1 16 3
1 17 5
1 18 3
2 01 1
2 02 2
2 03 2
2 04 2
2 05 2
2 06 2
2 07 1
2 08 1
2 09 3
2 10 7
```

Appendix K

RAW-DATA FROM THE NORTH-AFRICAN STUDY: PRETEST

1.Variables:
Category-Label, Subject, Traits
Trait-descriptors: aime s'amuser, seul, politise, guindailleur, bruyant, vivant, gauchiste, froid, bourgeois, déprimé, traditionaliste, conservateur, accueillant, gai, peu ouvert, a la mode, minuscule, enorme, presse, bizarre, xenophobe, snob, profiteur, impoli, d'abord facile, mort, communicatif, dragueur, contestataire, faible, lent, rapide, studieux, cultive, sectaire, mefiant, methodique, depensier, timide, mauvais, buveur, serieux, violent, non accueillant, gentil, mechant, volontaire, motive, indolent, grand, poli, detendu, complexé, non motive, serviable, tranquille, propre, casanier, petit, ambitieux, apathique, vif, rigolard, non creatif, peu actif, non politise, non respectueux, d'abord difficile, solidaire, bon, agreable, fort, desagreable, intelligent, honnete, pessimiste, non sportif, phallocrate, non cultive, sportif, courageux, rationnel, sociable, pretentieux, superficiel.
2.Format: (I,I2,64I1/3x,2I1)
3.Number of Cases: 41

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10161116245125561234426311254232662171663425737265433126671166642575612164513
10262242612224465651122322351344424444424211442624434664234621446511224766426622326644222
10347244642443465225432232144644444654242544543546644544265344545533534645434544444536433
10431326442446622225326224424564353446644464464464643346422345444446364422464246446445244
10563446744445435344444425264565444555344544553546644555345644456533443655436542626446233
10666627365263353325112122264676561332313533522526662665277776561526226663345526465665122
10753735463333335634425137652676225126223343265334134372722224355335173231374233365333361
10871477711747777114411174717711711447111112117155745443721447141664714444464127461174333
10961435541336625674426664452665244236645344255531162371621257435542262742644243655546744
11052433241157576244425112371773453227142144441446634174262554225644444444443247245371711
11171777771476677144477447271476244557714144154446544371264714717744171414446111717627473
11262211611724466364121155214251114654335311512611544661265554415333534366424553525535413
20172565724666646261264444554562426553444445614516646662465244646424411746236642616745423
20274175435444455662647532554543344664455417424535537364245441626624633455636545363534553
20365732632225566114462115172563235764146216611622626761165644555364
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212276642672112766635
204534555435555662544645542636463445666464444454466446444446447444444336444444464444446422057136662152226627445356446266622635664722524262432646456262262662256266652665253656664206622543366566555444444555635664444473653453333535534563353334544634564224443543647245566207717776215155571744626727616671175242461171117167772741422217257211316663247116675466620864566656646611666254677525367671436627616637244262366626277272572662533573366376524565209471442144155447411411444111444174417144117144144144244444414144446444444147714476444430142222611124577346652332241611155364462521611716615772277724717432711777616733336666223025223264251227614224153317175511555213421331151565436135542431532335155641551222643722303564116411143752144444211747633445543353133117165246633645446155236116675146245356372130471131721215377234425211171612225663151411511771772477217562452662272177741771411463712305525546423233661344334231517552255645553243325356355633555356367224235553266333355452330656251423233356234425111154315244373317211311515534672455554315544433353541744444444444430761352721414377154422251171763444451146114411716514671365424226733421667414514134427130864331521425577144422311121633544552242511311711442476337662452453561357741365424356123095232161173447733111245116162112266226131151172655177616675161331122166621371222465721310447115433344464444444221446444444664444314511614444741447744415444111477414714111444441401135242354635117444565266441234352355253752461621542224222244423256654214641143241236740215554544671334234423547771444444474447445444745444434344424442646246644246422442444444403244222177466144444447776444422444274444764772644644444424464554255531224741447444417640411421112111141477441117771147636211661116225753227225262211661652466262345224362522276405364241475644117444565576141255664466444546472747444354444446441444562424744544445415440653652213131135522166133314523551566664433635454534433333634535332563435434461127571554076264714645652274446466663723557322665334346635115422672216436246546622147216634222266408522674255666232426226657424622262266244663662262642266252126646766666211211226662222674096322244444422721147277737142311447311177255172264125322234342355463111153132733111664102555532574533116444266366252626246665426655626555436252662456265666654256436552234366

Appendix L

RAW-DATA FROM THE NORTH-AFRICAN STUDY: THE EXPERIMENT

1.Variables:
Category-Label, Subject, Traits.
Trait-Descriptors: seul, guindailleur, ambitieux, bruyant, vivant, gauchiste, froid, deprime, faible, accueillant, gai,. a la mode, presse, bizarre, xenophobe, snob, profiteur,. mort, communicatif,. contestataire, studieux, cultive, sectaire, mefiant, depensier, timide, mauvais, buveur, serieux, violent, gentil, mechant, volontaire, motive, indolent, poli, detendu, complexé, serviable,. tranquille, propre, casanier, apathique, vif, peu actif, non respectueux, d'abord difficile, solidaire, bon, agreable, desagreable, intelligent, honnete pessimiste, non sportif, phallocrate, sportif, courageux, rationnel, sociable, pretentieux, superficiel.
2.Format for traits used on the computing of positive ratings and of negative ratings:
(I3,4X,I,X,2I,X,2I,3X,3I,X,I,2X,2I,6X,5I,X,4I,3X,12I,X,3I,X,3I)
3.Number of Cases: 184

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10146327421176462662336256675265254253626577525527252655737626277
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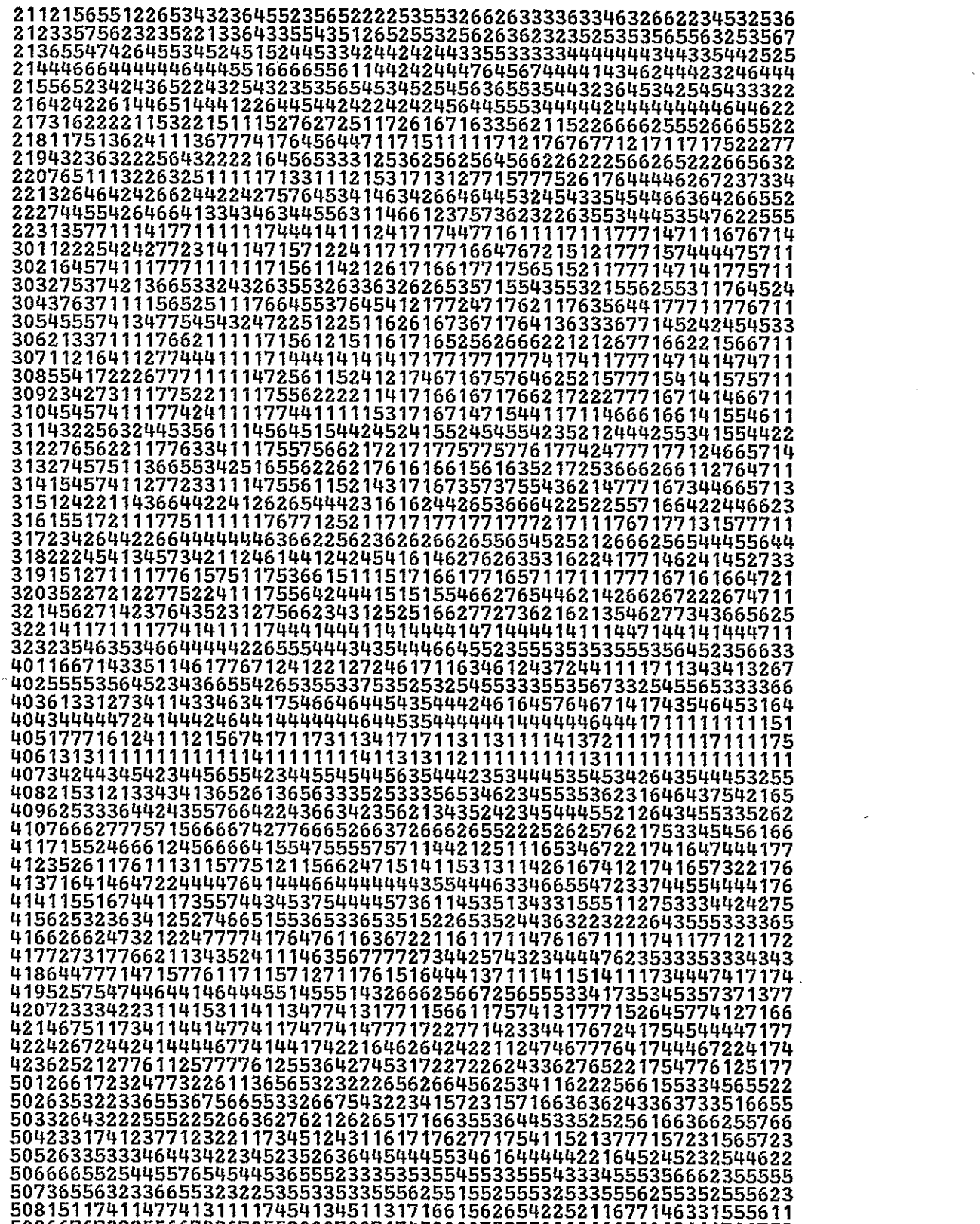

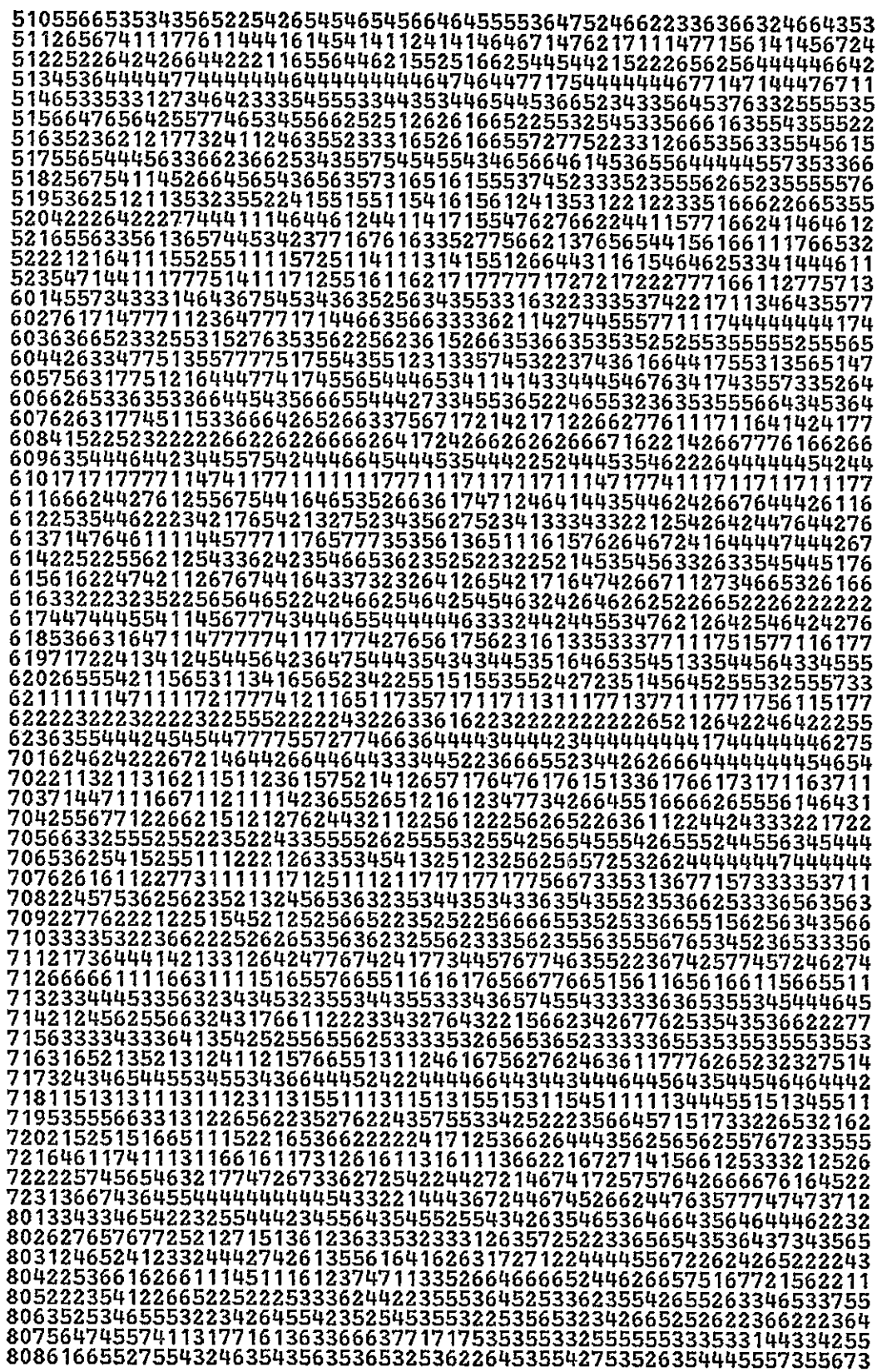

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Appendix M

RAW-DATA FROM THE HEYSEL STUDY

1.Variables:
Target's Group Membership, Information, Information-Questions, Traits, Negative Ratings.
Trait-Descriptors: enrage, violent, fou, casseur, hysterique, excité, irresponsable, ivre, fasciste, dangereux, délirant, rebelle, détraqué, asocial, xénophobe, inconscient, désagréable, sauvage, inhumain, méchant, delinquant, imbécile, mauvais, dément, assassin, voyou.
2.Format: (2F1.0,F2.0,3F1.0,F2.0,F1.0,26F1.0,F3.2)
3.Number of Cases: 40

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