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Chapter 5

Majority and Minority Influence: A Dual Role Interpretation

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ABSTRACT

This chapter offers an analysis of majority vs. minority influence using the Heuristic-Systematic Model of persuasion (HSM). We evaluate evidence for and against leading perspectives such as Conversion Theory. Next, research and theory is reviewed suggesting that majority vs. minority influence differentially affect the processing of persuasive arguments. A dual-role interpretation of majority and minority influence is presented. First, numerical support for discrepant messages affects the decision to engage in systematic processing. Majority support is motivating in itself, whereas minority messages are processed systematically only when neglecting the message is difficult. Second, we propose that majority-supported arguments most probably elicit convergent processing, while minority-supported arguments may elicit divergent processing. Convergent processing may lead to focal change accompanied by change on related issues, whereas divergent processing at best elicits related change.

If we think about social psychology as the study of the effects of the explicit, implicit or implied presence of others on the individual's motivations, cognitions, and behavioral acts, then social influence research is at the very heart of today's social psychology. Social influence research may be broadly classified

into research and theory dealing with social influence in small groups (e.g., French & Raven, 1959; Levine & Moreland, 1985), and research and theory dealing with information processing and persuasion (Chaiken, 1987; Petty & Cacioppo, 1986). Within each of these classes, considerable attention has been devoted to understanding the emergence and maintenance of group norms and conformity (e.g., Asch, 1955; Deutsch & Gerard, 1955; Kruglanski & Webster, 1991), and to innovation and minority dissent (Moscovici, 1976; Nemeth, 1986). There may be a functionalistic principle guiding this interest, in that compliance to group norms often stimulates effective functioning, while dissent and innovation is needed to advance the group and to compete with other groups or social systems in an even more effective way.

Despite the topic's relevance, contemporary understanding of the fundamental processes underlying majority and minority influence is relatively weak. In part, this may be due to confusion of theoretical levels of analysis. Thus, whereas research on mock juror decision-making (e.g., Laughlin & Ellis, 1986) focuses on social influence in small decision-making groups, Moscovici's (1980) Conversion Theory tends to deal with broader influence processes in a larger social system, a system which is dynamic and in which participants share a past and a future. In addition, the confusion in the literature may be due to the diversity in both independent and dependent variables investigated. Thus, whereas some researchers are interested in the effect of behavioral styles of minorities on latent attitude change (e.g., Moscovici, 1980; Mugny, 1982), others investigate differences in cognitive activity as a function of faction size (e.g., Nemeth, 1986). Finally, the study of majority and minority influence seems particularly prone to rather idiosyncratic theories often employing different labels for very similar concepts, processes and effects. Thus, thinking about the source's arguments has been labeled "validation" (Moscovici, 1980; Mugny & Pérez, 1991), "systematic processing" (Bohner, Erb, Reinhard, & Frank 1996; De Dreu & De Vries, 1993), or "convergent thinking" (Nemeth, 1986).

This Babel-like confusion of tongues is particularly troublesome since research findings seem to contradict each other repeatedly. While some investigators seem to observe that arguments advanced by a minority elicit more private attitude change than similar arguments forwarded by a majority (e.g., Maass & Clark, 1983), others tend to observe the reverse (e.g., Mackie, 1987). Likewise, some researchers observed minorities categorized as outgroups to exert less private attitude change (e.g., Clark & Maass, 1988), with others finding outgroup minorities to be superior to ingroups (Pérez & Mugny, 1987).

In the current chapter, we attempt to do several things. First, we try to rewrite various research traditions on majority and minority influence into one single framework, denoting similar or identical processes with one single

term. This necessarily reduces the explanatory power regarding particular details, but we feel this loss is exceeded by the gain of conceptual clarity and general understanding of majority and minority influence. Second, we evaluate leading perspectives against their empirical evidence. In doing so, we refer also to a recent meta-analysis by Wood *et al.* (1994). This leads to suggestions about which ideas to keep, and which to drop. Third, our attempt towards integration suggests a theoretical framework which assumes majority or minority influence to have a dual role—that of motivating recipients to pay attention to arguments and attitudinal positions, and that of biasing the processing of these arguments and attitudinal positions. Some of our research surrounding this thesis is discussed in detail. In a final section we summarize conclusions and highlight avenues for further research.

THE HEURISTIC-SYSTEMATIC MODEL OF INFORMATION PROCESSING

Following recent work by Chaiken and colleagues (Chaiken & Stangor, 1986; Eagly & Chaiken, 1993), we adopted the Heuristic-Systematic Model (HSM) of persuasion as the starting point for our analysis of majority and minority influence. Our argument for doing so was fourfold. First, HSM provides a general framework from which the interplay between source characteristics, mediating processes, and outcomes in terms of attitude change can be understood. Second, HSM is a generally well-supported theory of persuasion and attitude change which subscribes to modern wisdom that cognition and motivation are ultimately intertwined and jointly influence individual judgment and social interaction (e.g., Bohner, Moskowitz, & Chaiken, 1995; Fiske, 1993; Kruglanski, 1990). Third, HSM has been successfully applied outside of the persuasion context, as in research on stereotyping (e.g., Bodenhausen, 1990), or bilateral negotiation (e.g., De Dreu *et al.*, 1995). And finally, several investigators have already started to describe majority and minority influence processes in terms of HSM (e.g., Bohner *et al.*, 1996; Chaiken & Stangor, 1986; Mackie, 1987), implying that the current attempt continues a trend rather than being conducted in isolation.¹

HSM postulates two mediational paths to persuasion, namely systematic and heuristic processing (cf. Eagly & Chaiken, 1993, p. 326–7). *Systematic processing* is conceptualized as a comprehensive, analytical orientation to

¹ Closely related to HSM is the Elaboration Likelihood Model (ELM) of Petty and Cacioppo (1986), which has been applied to minority influence by, for example, Maass and Clark (1984) and Baker and Petty (1994). The ELM-approach seems more limited due to its built-in antagonism between different processing routes. In the present context we therefore prefer to base our analysis on HSM.

information processing in which recipients judge the validity of the position advocated in a message by scrutinizing persuasive argumentation and by thinking about this information in relation to other information they may possess about the object or issue discussed in the message. *Heuristic processing* is conceptualized as the more limited mode of information processing in which the recipient uses simple decision rules such as "experts can be trusted" or "consensus implies correctness" to judge the validity of the message. Compared to systematic processing, heuristic processing requires less cognitive effort, fewer cognitive resources, and less time. In addition, attitude change following systematic processing is more enduring, more resistant to counterarguments, and probably spreads to issues related to the focal issue by associative content (related change).

For systematic processing to occur, HSM proposes two fundamental conditions which have to be met. First, recipients should exhibit sufficient cognitive ability. Thus, recipients should be able to attend to the message, and possess sufficient cognitive abilities to elaborate upon its content. High time pressure, badly xeroxed paper, or noisy distraction are examples of situational variables reducing the mere capability to engage in systematic processing. In addition to cognitive ability, HSM assumes that recipients need to be motivated to spend considerable cognitive effort in processing a message's content. Only when the level of confidence in a judgment that a person experiences falls short of a level a person considers sufficient, will she be motivated to exert the effort needed for systematic processing. Recent developments of the theory distinguish further between three fundamental sources of motivation. That is, recipients of persuasive messages may be *accuracy-motivated* (they are particularly interested in obtaining an accurate judgment), *defense-motivated* (they are particularly interested in defending a certain attitudinal position), or *impression-motivated* (they are particularly interested in developing socially acceptable attitudinal positions) (e.g., Chaiken, Liberman, & Eagly, 1989; Eagly & Chaiken, 1993; Liberman & Chaiken, 1992).

Consensus Implies Correctness

According to HSM, majority or minority support for a particular attitude position may serve as a heuristic cue. According to the "consensus implies correctness" heuristic, recipients engaging in heuristic processing should attribute greater validity to a message the more people support it (Axson, Yates, & Chaiken, 1987). To the extent that the consensus heuristic is cognitively accessible, majority support should lead to more attitude change than minority support. Under conditions motivating engagement in systematic processing (e.g., high involvement), impact of the consensus-heuristic should attenuate.

DIFFERENTIAL INFLUENCE ON PERCEPTIONS AND ATTITUDES

Since the pioneering work by Sherif (1936) and Asch (1955) on group norms, compliance and conformity, social psychology for a long time emphasized compliance and control, while neglecting innovation and change. Dissatisfied with this bias in research and theory, Moscovici (1976, 1980, 1985) advanced his Conversion Theory. Conversion Theory assumes that when majorities and minorities consistently argue for a particular discrepant point of view, both sources are likely to be influential yet for entirely different reasons. Specifically, Conversion Theory argues that majorities instigate a comparison process by which group members' attention focuses on "what others say, so as to fit in with their opinions and judgments" (Moscovici, 1980, p. 214). Consistent minorities, in contrast, may induce a validation process by which attention focuses on trying to "see what the minority saw, to understand what it understood" (Moscovici, 1980, p. 214). In terms of HSM, Conversion Theory proposes that messages with majority support trigger rather superficial processing with relatively strong emphasis on source characteristics and little attention given to the message content. Messages with minority support, in contrast, should trigger substantive processing of the message content, with relatively little attention devoted to source characteristics. Thus, Conversion Theory makes two related predictions, namely (1) that minority messages *can* have influence, and (2) that this influence exceeds that by majorities, since the minority message is processed systematically and the majority message is not. A final prediction of Conversion Theory is that the influence of minorities will be more indirect than direct (see our later discussion of related vs. focal change) and of a private rather than a public nature. We start by evaluating evidence for the first proposition, and then will consider evidence for the second and third one.

Minority Influence

To demonstrate minority influence, Moscovici and colleagues conducted several experiments using the Asch paradigm. In these studies (Moscovici & Lage, 1976; Moscovici, Lage & Naffrechoux, 1969), a minority of two confederates was placed in groups that totalled six individuals, who had to judge the color of slides projected on a wall. Although the slides were clearly blue, the two confederates publicly announced that they saw a green slide. In the condition in which the confederates deviated consistently (on all 36 trials), they influenced a significant percentage of all answers made by the four naive subjects. When the confederates deviated inconsistently (two-thirds of all trials), their influence dropped to non-significant levels. Thus, these experiments support Conversion Theory's proposition that as long as a minority remains consistent, it may influence judgment and attitudes.

Consistent with these findings are studies emanating from an attributional account which assumes that recipients of persuasive arguments tend to attribute the cause of the influence attempt either to characteristics of the minority (person attribution), in which case private attitude change will be absent, or to characteristics of the message (entity attributions), in which case private attitude change will be possible (see, in particular, Maass & Clark, 1984, or more generally Kelley, 1967). Research indicates that consistency over time increases the perception of the minority as certain and confident, which promotes influence (Moscovici & Faucheux, 1972; Moscovici & Nemeth, 1974). Other studies suggest that when attributions to self-interest become more probable, minorities exert less influence (e.g. Maass, Clark, & Haberkorn, 1982). Thus, as likelihood of (entity) attributions to characteristics of the message increases, minority influence appears to become more likely.

Several experiments studied minority influence from a self-categorization or intergroup perspective. Clark and Maass (1988) did a study in which subjects were exposed to transcripts of a group discussion containing five arguments from one group member (the minority) and five opposing arguments from the other four group members (the opposing majority). In one condition, the minority member was from the same university as the subjects (ingroup minority), while in another condition the minority member came from a different university (outgroup minority). Results showed that private attitudes were more influenced by the ingroup minority than by the outgroup minority. Likewise, Martin (1988a, b) shows that ingroup minorities tend to have more influence than outgroup minorities, at least when the ingroup is evaluated positively (Martin, 1992). Finally, David and Turner (1996) argue that people rely on ingroup others, i.e. persons considered to belong to the same category as the person herself, when forming opinions on an issue about which they are uncertain. Also, ingroup others are expected to agree with the person, implying that disagreement with ingroup others will cause uncertainty. Since uncertainty is unpleasant, people may react to disagreement by either re-categorizing the influence source as outgroup (with whom disagreement is tolerable or desirable), or by changing their opinion toward the position advocated by the influence source. Consequently, David and Turner also expected minority influence only when the minority is categorized as an ingroup rather than an outgroup. In a series of ingenious field experiments, they provided evidence for this basic contention. It should be noted, however, that the meta-analysis by Wood *et al.* (1994) indicated that the ingroup-outgroup distinction has only limited effects.

Mugny and colleagues (Mugny, 1982; Mugny & Pérez, 1991) studied the various levels at which minority influence may be apparent. Thus, they decomposed private attitude change into change on focal issues (direct influence) and change on related issues (indirect influence). Focal change refers to the private attitude change on the issue explicitly treated in the source's arguments, while related change refers to the private attitude change on issues related to the focal

one by associative content. For example, when a minority advocates a pro-abortion point of view, change in attitudes regarding abortion reflects focal change, while change in attitudes regarding, for instance, contraception, would reflect related change (Pérez & Mugny, 1987). In two decades of research, Mugny repeatedly demonstrated that while minority influence on focal change may be negligible, it may be significant and positive on related issues (Mugny, 1975; Mugny, 1982; Mugny & Pérez, 1991). Lack of focal change paired to substantial related influence occurs all the more when arguments are presented in a rigid rather than flexible manner (e.g., Mugny, 1982; Mugny *et al.*, 1991), when the validity of the minority arguments is explicitly denied (Clark, 1990; Moscovici, 1987; Moscovici, Mugny & Pérez, 1986; Mugny, 1984, 1985), when the arguments are consistent rather than inconsistent over time (Moscovici, 1980), or when the minority arguments intensify a value conflict (Sanchez-Mazas, 1996) (for an extensive meta-analysis, see Wood *et al.*, 1994).

Minority Influence: Prerequisite and Re-interpretation

All research on minority influence together suggests that minority influence is greater on private rather than public measures, and is apparent especially on related rather than focal issues (see Wood *et al.*, 1994). According to various scholars, this general conclusion seems to hold when: (1) person attributions are implausible and entity attributions are likely; (2) minority sources are categorized as ingroup rather than outgroup; (3) arguments are presented in a rigid rather than flexible way; or (4) the arguments' validity is explicitly denied.² These conditions share one common feature, in that they all focus the recipient on the minority point of view, making it difficult if not impossible to further neglect the minority position. In terms of HSM, we would argue that for minority influence to occur, external variables are needed to motivate the recipient to engage in systematic processing. The minority support itself does not seem to elicit such motivation.

This reasoning can be interpreted in terms of the discrepancy between the actual and the desired level of confidence, which HSM considers to be the factor that determines processing motivation. HSM defines a Sufficiency Threshold, which expresses the degree of confidence a person wants to attain about a certain opinion within a certain setting. The Sufficiency Threshold may be affected by involvement of recipients, by the nature of the task and by interpersonal differences (e.g., Need for Cognition and Need for Closure, cf. Kruglanski & Mackie, 1990). Aspects of the persuasive message and the reception situation may influence the perceived level of confidence a person has about his or her own opinion. We think that variations in persuasion

² Some of these conditions do not receive strong support in the meta-analysis by Wood *et al.* (1994). Obviously, however, a meta-analysis is unable to speak to the validity of a particular study or research finding and rather demonstrates general tendencies in terms of overall effect sizes.

attempt induce variations in recipients' actual levels of confidence. Depending on whether the actual level of confidence the person experiences falls short of or exceeds the Sufficiency Threshold, the person will be motivated or not to systematically process a message. The upper part of Figure 5.1 depicts two situations, before and after exposure to a persuasive message, with a constant Sufficiency Threshold. When the actual confidence level exceeds the Sufficiency Threshold (as is often the case before an influence attempt) no processing effort will be spent, but when actual confidence falls below the Sufficiency Threshold (as is perhaps the case after an influence attempt) the motivation to systematically process a message will be high. In the lower part of Figure 5.1, variables that have been shown to enhance minority influence are given. These are interpreted as affecting the confidence level when a recipient is exposed to a persuasive message within a certain situation. They include the factors named above and some factors that will be treated in later sections of this chapter. Levels of these factors that lower confidence and thereby promote systematic processing are given on the left-hand side.

Majority vs. Minority Influence: Evidence from Color Perception Studies

A first test of Conversion Theory's proposition that minority influence causes more change in private attitudes and judgments than majority influence, was

Figure 5.1 Factors influencing the motivation to systematically process discrepant minority messages. * These factors are discussed in the section on "Differential influence on motivation to engage in systematic processing"

conducted by Moscovici and Personnaz (1980). The study relied on the fact that just after seeing a bright colored slide in a dark room we tend to see the complementary color as an after-image. Specifically, a blue slide should evoke an orange/yellow after-image, whereas a green slide should evoke a red/purple after-image. Moscovici and Personnaz (1980) reasoned that majority influence should affect judgments of the color of the slides, but minority influence should affect judgments of the after-image (since this reflects how people "really" judge the slide). To test this idea, they conducted experimental sessions in which one naive subject and one confederate judged the color of blue slides and the after-image when the slide was taken away. In a pre-testing phase, both the subject and the confederate made private judgments of slide and after-image. Then the experimenter announced that either a majority or a minority of previously tested subjects saw this slide to be green (wrong answer), whereupon the confederate announced his response to be green as well (wrong answer). Finally the subject was asked to write down her answers (concerning the color and the after-image) in private. Results revealed no differences in private judgments of the color of the slide between the majority and the minority conditions. But analysis of after-image judgments revealed that in the minority conditions more than in the majority conditions, subjects' judgments of after-images suggested that subjects really saw green (rather than blue) slides. Thus, Moscovici and Personnaz (1980) conclude that private judgments of color may be influenced by minority viewpoints, but not by majority ones.

Although intriguing and apparently supporting Conversion Theory, there are several problems with this experiment. Independent replications of the Moscovici and Personnaz (1980) experiments failed either to find differences between majority and minority conditions (Doms & Van Avermaet, 1980; Martin, 1995), or to find changes in judgments of after-images (Sorrentino, King, & Leo, 1980). In addition to this, it is unclear in these studies whether it is minority influence which caused the results. Recall that it was always the confederate responding first, thus either complying to the majority, or to the minority. Only then the subject responded. Thus, it might be that the subject responded to the fact that a minority rather than majority saw green rather than blue. Equally plausible, however, is that subjects responded to a confederate who complied to the majority (not surprising), or who complied to a minority (very surprising). Thus, may be it was surprise rather than minority influence which caused people to adapt their judgments (for some relevant data regarding this issue, see Levine and Ranelli (1978)).

Majority vs. Minority Influence: Evidence from Attitude Research

Maass and Clark tested Conversion Theory in the realm of attitude change (Maass & Clark, 1983, 1986; Clark & Maass, 1988). In their typical study, they

provided subjects with written transcripts of group discussions on gay rights. In these group discussions, a minority of one group member gave a total of eight arguments favoring gay rights, while the majority of four also gave a total of eight arguments which opposed gay rights (or vice versa). Thus, subjects read eight minority-supported arguments for one position, and eight majority-supported arguments for the opposing position. Subsequently, subjects were asked to give their opinions about gay rights. In one condition, these opinions would be publicly disclosed in anticipation of group discussion, whereas in another condition these opinions would remain private and anonymous. Results repeatedly revealed that in the public disclosure conditions, attitudes agreed more with the majority rather than minority viewpoint, whereas in the private attitude conditions, the reverse pattern was found. Moreover, especially in the private opinion conditions, attitude change could be successfully predicted from thought listings subjects provided afterwards, indicating systematic rather than heuristic processing (Maass & Clark, 1983).

Although the Maass and Clark experiments are generally consistent with the basic tenet of Conversion Theory that minority arguments are processed systematically and majority arguments are not, some issues regarding their experimental design warrant caution in treating these data as proof. Because thoughts were always measured in private, the enhanced correlation between the private thoughts and private attitudes over public ones could have resulted from the similarity in measurement conditions (Baker & Petty, 1994). More importantly, the experiments of Maass and Clark (1983, 1986; Clark & Maass, 1988) contained a negative correlation between faction size (minority of 1 vs. majority of 4) and number of arguments given (8 arguments for each position). Thus, in the private measurement condition where minority influence should prevail over majority influence, the source presenting relatively most arguments may have been perceived as most knowledgeable and committed to the topic, and therefore became more influential (cf. Eagly & Chaiken, 1993). Put in another way, it may be that not the minority status, but rather the relative number of arguments presented accounted for the effects. Note that this alternative explanation is consistent with the "length of message implies message validity" heuristic, and the general finding that more persuasive information leads to more attitude change (Eagly & Chaiken, 1993).

DIFFERENTIAL INFLUENCE ON MOTIVATION TO ENGAGE IN SYSTEMATIC PROCESSING

The previous section shows that older research contrasting majority with minority influence did not yield convincing evidence for Moscovici's idea that majority arguments are at best processed heuristically, while minority arguments are systematically processed leading to substantial change in private

attitudes. In this section, we will review more recent research from an information-processing perspective which quite convincingly supports the reverse conclusion.

Violating Expectations

Research on false consensus bias suggests that people tend to assume that their attitudes and opinions are shared widely within their group (Ross, Greene, & House, 1977; see also David & Turner, 1996), and that violations of these beliefs elicit considerable cognitive effort (Hastie, 1984). Thus, the initial beliefs of recipients confronted with discrepant messages with majority support will be violated more than those of recipients confronted with discrepant messages supported by a minority. Consequently, majority support for a persuasive message will elicit greater systematic processing of its attitudinal position than minority support.

Mackie (1987) contrasted this idea with the prediction of Conversion Theory that it is the minority message which receives most systematic processing. In a series of experiments, subjects were presented with discrepant attitudinal positions with supporting persuasive arguments favored by a majority, or by a minority. She assessed private attitude change, thought listings and argument recall. Consistent with her false-consensus argument and contrary to Conversion Theory, results repeatedly demonstrated (a) more attitude change following persuasive arguments with majority rather than minority support, and (b) mediation of attitude change by thought listings and argument recall in the majority conditions, but not in the minority conditions.

Baker and Petty (1994) recently continued this work. In a first experiment, they observed that majority-supported arguments elicited more private attitude change than did minority-supported arguments, but only when strong rather than weak arguments were presented. Argument quality influenced attitude change in case of majority support, but not in case of minority support, indicating more systematic processing of the majority rather than minority message. In a second experiment, Baker and Petty conducted a critical test of the idea that it is because expectations are violated that majority messages receive better scrutinizing. They provided half of their subjects with a pro-attitudinal majority message or a counter-attitudinal minority message (confirmed expectation condition), and half of their subjects with either a counter-attitudinal majority message or a pro-attitudinal minority message (violated expectation condition). Results showed that argument quality did not influence attitude change when subjects received either a pro-attitudinal majority message or a counter-attitudinal minority message. But when subjects received either a counter-attitudinal majority message or a pro-attitudinal minority message, that is, in the violated expectations condition, strong arguments produced more private attitude change than weak

arguments. Within the context of our current focus on discrepant messages, the results of Baker and Petty suggest that discrepant majority messages elicit more systematic processing than discrepant minority messages because the former violate expectations to a greater extent than the latter.

Reducing Cognitive Resources

The Mackie (1987) and the Baker and Petty (1994) experiments provided evidence for the contention that majority support for discrepant messages motivates the perceiver to engage in systematic processing to a greater extent than minority support. Continuing this line of inquiry, Schuurman, Siero, De Dreu, & Buunk (1995) conducted an experiment to demonstrate that persuasive arguments produce more attitude change in case of majority rather than minority support only when recipients possess sufficient cognitive resources to engage in systematic processing. Schuurman *et al.* accepted the idea that majority support for discrepant arguments motivates greater engagement in systematic processing, and argued—consistent with HSM—that differences in attitude change as a function of numerical support should attenuate when recipients are distracted.

Subjects in this experiment were freshmen at the University of Groningen who participated for a small fee. Upon arrival in the laboratory each subject was seated in a separate cubicle in front of a personal computer. All introductory materials, persuasive arguments, attitude measurements and post-test questionnaire items were presented on the computer screen. The experiment started by explaining that the investigators were interested in learning the opinions of students about the introduction of more severe study-load (the topic receives more and more attention in Dutch media, is to some extent involving, and although most students are against increasing study-load, they have no clearcut ideas about the dominant attitude in the population). Subsequently, subjects were told that “since this investigation is underway quite some time now, we have a rather reliable impression of the general attitude of students regarding study-load”. Subjects in the distraction-condition were asked to put on headphones and asked to start counting the tones they heard (11–13 tones per minute in random intervals were given; subjects’ tallies were afterwards counted to verify whether subjects took this task seriously). Subjects in the no-distraction condition were not given this task. All subjects received a message stating that either 82% of the students (majority condition) or 18% of the students (minority conditions) strongly favored increasing study-load. In addition to this, subjects were presented with three good arguments (according to pretests) “most often advanced by students in favor of introducing more severe study-load”. This information remained on the computer screen no longer than one minute, and then subjects’

post-experimental attitudes regarding entrance examinations were measured. Pilot testing revealed that in both the distraction and the no-distraction condition one-minute reading time was enough to note the arguments, while only in the no-distraction condition did sufficient time remain to actually process these arguments in a meaningful way.

Results of the Schuurman *et al.* (1995) experiment first of all indicated that the manipulation of numerical support for the persuasive arguments was successful and non-contingent upon the distraction condition. Second, argument recall was better in the no-distraction rather than the distraction-condition, independent of numerical support. More importantly, a significant interaction between the numerical support manipulation and the distraction manipulation on post-experimental attitudes showed that majority support produced more favorable attitudes than minority support, but only in the no-distraction conditions. In the distraction condition, numerical support did not influence attitudes. This effect is displayed in Table 5.1. Schuurman *et al.* (1995) concluded that given that cognitive ability is sufficient, majority support for discrepant messages produces more attitude change than minority support.³ Of course, the experiment leaves open whether distraction interferes with reception rather than with systematic processing.

Research inspired by Conversion Theory shows that minority arguments may influence attitudes, but particularly on related rather than focal issues, and especially when situational variables focus the recipient on the minority point of view, making it difficult (if not impossible) to neglect it any longer (cf. Figure 1). Less convincing is the evidence for Conversion Theory's proposition that this minority influence exceeds the influence exerted by majority

Table 5.1 Post-experimental attitudes as a function of numerical support and distraction

	Distraction	
	Yes	No
Majority support	0.00 ^a	0.68 ^b (1.11)
Minority support	0.28 ^{ab}	0.09 ^a (0.89)

Note: Cell means not sharing equal superscripts differ at $p < 0.05$. Higher cell means reflect greater support for the persuasive message. (Scores range from -3.27 to 3.18, using a PARELLA-method to assess attitudes; see Siero & Doosje, 1993, for further details). Standard deviations are given in parentheses (from Schuurman *et al.*, 1995)

³ Note that, in the distraction condition, numerical support did not influence attitudes. This is inconsistent with the “consensus implies correctness” idea that numerical support serves as a heuristic cue and triggers attitude change under low cognitive processing ability. It is not inconsistent, however, with the notion that numerical support may influence the motivation to engage in systematic processing, which only in case of high quality arguments will lead to attitude change.

arguments in that it elicits more systematic processing. Although some support has been generated, it may be criticized on methodological grounds, or alternative interpretations are at least equally plausible. More importantly, various experiments in the persuasion paradigm provide rather compelling evidence that majority support for discrepant messages produces greater motivation to engage in systematic processing than minority support and that, provided the perceiver has sufficient cognitive resources, this systematic processing results in more attitude change.

All in all, the review thus far showed that *majority vs. minority support for discrepant messages fulfills the role of motivating recipients to engage in systematic processing*. Whereas minority support for discrepant messages in itself does not lead to systematic processing, majority support for discrepant messages suffices to trigger substantial scrutinizing of message content (Baker & Petty, 1994; Mackie, 1987; Schuurman *et al.*, 1995). Only when external variables make it difficult or impossible to further neglect the minority's discrepant message may people engage in more systematic processing of the minority's message, resulting in attitude change on focal, but especially related issues.⁴ Stated otherwise, our contention is that majority support for discrepant messages will lower the receiver's confidence level more than minority support. Therefore, majority messages have a higher probability than minority messages of lowering the actual confidence level below the sufficiency threshold, leading to motivation to process the message systematically.

MAJORITY VS. MINORITY INFLUENCE BIASES SYSTEMATIC PROCESSING

Whereas research discussed so far has been concerned primarily with the question whether, and under what conditions, majority and minority-supported messages are processed in a systematic, cognitively effortful way, little attention has been paid to the nature of this cognitive activity. In this section we will present theory and research evidence to suggest that numerical

⁴ In recent writings, Mugny and colleagues (e.g., Pérez & Mugny, in press) proposed their Conflict Elaboration Theory, which among other things proposes that it is through the enhanced conflict that (minority) influence finds its way. Conflict may have various meanings, all of which may be related to social influence in one way or the other. Conflict may be interpersonal, when the individual feels that his or her goals and those of another person cannot be achieved simultaneously. But conflict may be intrapersonal as well, when two cognitions and/or motivations cannot be satisfied simultaneously (cf. cognitive conflict). In our view, enhancing interpersonal conflict is just one of the many ways to reduce the recipient's possibility of neglecting the source's point of view. Enhanced intrapersonal conflict is closely related to discrepancy between actual and desired confidence, and thus to engagement in systematic processing. For reasons of conceptual clarity (see our Introduction), we prefer the distinction between systematic and heuristic processing.

support biases systematic processing, with majority support inducing more convergent thinking and minority support promoting more divergent processing.

Nemeth's Convergent-Divergent Perspective

The pioneering work by Charlan Nemeth and her colleagues (Nemeth, 1986; 1995) provides the basis for our argument that numerical support may bias the systematic processing of discrepant messages. Contrary to the theories and research discussed above, Nemeth focuses on the nature of cognitive activity rather than attitude change following exposure to majority or minority influence attempts. She distinguishes between convergent thinking and divergent thinking. Convergent thinking is defined as the thought processes that explicitly take the source's position into account. Recipients actively look at the issue under debate but will view it from the perspective of the source's judgment. Divergent thinking, in contrast, is defined as the thought processes that take multiple perspectives into consideration, one of which is suggested by the influence source. In a series of studies, Nemeth and colleagues observed that majority influence promotes convergent thought processes, while minority influence promotes divergent thinking (Nemeth & Kwan, 1985, 1987; Nemeth *et al.*, 1990; Nemeth, Mosier, & Chiles, 1992; Nemeth & Wachtler, 1983; see also Mucchi-Faina, Maass, & Volpato, 1991; Volpato *et al.*, 1990). The general explanation is that majority influence is stressful, and assumed to reveal the "correct" position, while minority influence is less stressful and disrupts presumed consensus, which is to be avoided.

At first sight, there may appear to be an inconsistency between our earlier conclusion that majority influence motivates systematic processing (while minority influence will be processed only when the minority's position can no longer be neglected) and Nemeth's findings that majority influence causes convergent processing while minority influence causes divergent processing. Thus, our analysis would suggest a qualification to Nemeth's theory that especially when recipients cannot neglect the minority influence attempt, differences in the nature of systematic processing between majority and minority sources will be observed. To test this prediction, De Dreu and De Vries (1993, Experiment 1) adapted the novel-associations paradigm used by Nemeth and Kwan (1985). Subjects were Swiss high-school students who participated during experimental sessions conducted in their classrooms during regular school hours. Subjects were given a questionnaire which explained that the purpose of the study was to survey opinions regarding issues of interest to high school students. They then were informed that the survey had revealed so far that about 82% of high school students (majority condition), or 18% of high school students (minority condition) were positive about the idea of allowing more foreigners to settle in Switzerland (in 1989, when the study was

conducted, this was a hotly debated issue in Swiss media). Seven arguments, "most frequently forwarded by this majority (or minority)" were given to support the attitudinal position advanced.

To manipulate the degree to which subjects were forced to consider the source's position, De Dreu and De Vries (1993) varied the way in which subjects had to evaluate the source's point of view. In the non-comparative evaluation condition, subjects were presented with three of the seven arguments of the influence attempt, and asked to allocate "X out of 100 points of correctness" to this position, and then to allocate "X out of a new 100 points of correctness" to their own attitude in this matter. Thus, allocations to the source's point of view were independent of allocations to one's own point of view, allowing for relative neglect of the source's position. In the comparative evaluation condition, however, subjects were asked for each of the three arguments to "distribute 100 points of correctness between the position advanced in this argument and your own attitude in this matter." Thus, each point of correctness allocated to the source's position implied reduced validity of one's own point of view. De Dreu and De Vries (1993) assumed that relative to non-comparative evaluation, comparative evaluation would lead to more systematic processing of the source's point of view, and thus to greater difference in convergent vs. divergent processing.

De Dreu and De Vries (1993, Experiment 1) measured convergent vs. divergent processing by asking subjects after the evaluation task to write down associations with the word "foreigner" (subjects were given twelve spaces to do so, but it was stressed that they did not have to give as many as 12 associations). The originality of associations was assessed by scoring whether a particular association was unique, that is, not mentioned by any other subject in the sample. Consistent with Nemeth (1986), results revealed a main effect for numerical support, such that majority influence led to fewer original associations than minority influence. More importantly, however, De Dreu and De Vries observed a significant two-way interaction between numerical support and evaluation mode (see Figure 5.2). Especially under comparative evaluation when it was presumably more difficult to neglect the source's point of view, majority influence led to fewer novel associations than minority influence.

Relating Convergent Processing to Attitude Change

Recent research has started to integrate the convergence-divergence perspective with insights on attitude change. Mackie (1987, p. 51) noted that:

The presence of the relations between indexes of message-oriented processing and attitude changes for subjects exposed to majority influence . . . are also consistent with Nemeth's (1986) suggestion that differences in the convergence of processing may importantly distinguish majority and minority influence.

Figure 5.2 Convergent processing of discrepant majority and minority positions under comparative and noncomparative evaluation mode. Lower numbers indicate fewer novel associations with the word "foreigner" (from De Dreu and De Vries, 1993, Experiment 1)

Similarly, Trost, Maass, and Kenrick (1992) observed that minority influence elicits more general issue thoughts while majority influence elicits more message-specific thoughts. Consistent with findings by De Dreu and De Vries (1993, Experiment 1; see above), Trost *et al.* found this pattern to be especially strong under high rather than low outcome-involvement. Outcome-involvement is likely to enhance motivation to engage in systematic processing (Petty & Cacioppo, 1986), and thus should boost the difference between majority and minority influence in their impact on the *nature* of cognitive activity (cf. De Dreu & De Vries, 1996). (Note that in our interpretation, outcome involvement will heighten the Sufficiency Threshold, thereby increasing the probability of effort expenditure.)

De Dreu and De Vries (1993, Experiment 2) explicitly designed a study to integrate Nemeth's convergence-divergence perspective with the general conclusion that majority influence may appear on related issues provided that recipients cannot neglect the minority's point of view. They employed a $2 \times 2 \times 2$ factorial design, involving numerical support (majority vs. minority), argument quality (strong vs. weak) and evaluation mode (comparative vs. non-comparative). The manipulations of numerical support and evaluation mode were identical to those used in their first experiment (see above); General procedures were similar to those employed by Schuurman *et al.* (1995, see above).

De Dreu and De Vries (1993, Experiment 2) assessed attitude change between a pretest and a post-test on a focal (entrance examinations) and a

related issue (fellowships to study at university), and after the post-test attitude measurement, they assessed the generation of novel arguments which "subjects felt were also relevant". Results revealed, first of all, that especially under non-comparative evaluation, attitude change on focal issues was influenced by argument quality more in the case of majority support than in the case of minority support. This finding is consistent with Baker and Petty's (1994, Experiment 1) results, and confirmed that majority support for discrepant messages motivates greater engagement in systematic processing than does minority support.

Regarding attitude change on related issues, De Dreu and De Vries (1993, Experiment 2) observed that relative to the non-comparative evaluation condition allowing neglect of the source's position, comparative evaluation induced less change in the case of majority support, but somewhat more change in the case of minority support. Cell means are given in Table 5.2, which also shows that under non-comparative evaluation majority influence on related change is greater than under minority influence. This is consistent with Mackie (1987) and our general contention that minority-induced related change only occurs when the minority arguments cannot be neglected. As an index of convergent processing, De Dreu and De Vries calculated the ratio of recipient-generated arguments favoring the source's position with the total number of recipient-generated arguments. Analyses revealed that majority support produced more convergent processing than minority support, especially under comparative evaluation and weak arguments. Most importantly, they observed a significant and positive correlation between their index of convergent processing and attitude change on focal issues (0.20), and a significant and negative correlation (-0.17) between convergent processing and attitude change on related issues.

In a conceptual replication, De Dreu and De Vries (1996) designed a 2 (majority vs. minority influence) $\times$ 2 (high vs. low outcome-involvement) experiment with attitude change on focal and related issues, and reading time as dependent variables. They argued that under high rather than low outcome-involvement, recipients should be relatively strongly motivated to

Table 5.2 Attitude change on the related issue as a function of numerical support and evaluation mode

	Evaluation mode	
	Comparative	Non-comparative
Majority	-0.34	+0.65
Minority	+0.23	-0.57

Note: Higher entries indicate more agreement with the source on related issues (from De Dreu & De Vries, 1993 (Experiment 2))

systematically process persuasive arguments (Petty & Cacioppo, 1986), thus boosting the difference between majority vs. minority influence. The experiment used high-school students from Groningen and employed identical procedures and instructions as in De Dreu and De Vries (1993, Experiment 2; Schuurman *et al.*, 1995). The attitude topic once again was the introduction of entrance exams, and numerical support for persuasive arguments was manipulated as before (e.g., De Dreu & De Vries, 1993, strong argument condition). Outcome-involvement was manipulated by telling subjects that the issue under debate was the introduction of entrance exams for university in Sweden (low outcome-involvement), or in The Netherlands (high outcome-involvement). Contrary to our previous experiments, subjects were given as much time as they needed to read the arguments, and reading time was assessed to indicate cognitive activity during message processing.

Results from De Dreu and De Vries (1996) showed that under high rather than low outcome-involvement majority influence was stronger than minority influence, as was predicted. Unexpectedly, results for attitudes on related issues followed a similar, albeit non-significant pattern, probably because focal and related issues were highly correlated. Very much consistent with earlier research, however, inspection of the correlations between reading time and attitude change on focal and related issues revealed that especially under high outcome-involvement reading time predicted focal change in the majority condition, but related change in the minority condition (see Table 5.3). De Dreu and De Vries (1996) interpreted these findings as consistent with the idea that majority influence promotes convergent processing predictive of focal change while minority influence promotes divergent processing predictive of related change, only when external variables motivate engagement in systematic processing.

The findings indicate support for the contention that majority influence produces convergent thinking which is predictive of attitude change on focal issues while minority influence elicits divergent thinking which may predict

Table 5.3 Correlation between reading time (RT) and focal and related change as a function of numerical support and outcome-involvement

	Outcome-involvement			
	High		Low	
	Majority	Minority	Majority	Minority
RT/focal	+0.47**	+0.23	+0.39*	+0.11
RT/related	-0.21	+0.68**	-0.12	+0.15

Note: Higher correlations indicate longer reading time to associate with greater agreement with the advocated position; * $p < 0.10$, ** $p < 0.01$ (from De Dreu & De Vries, 1996, with permission)

attitude change on related issues. Recall that according to Nemeth, convergent processing occurs because majority influence is stressful and the majority is assumed to be correct, while divergent processing occurs in part because minority influence is disrupting presumed consensus, which is at least initially unpleasant. Thus, a case can be made that discrepant messages with majority support elicit convergent systematic processing partly focused at justifying the majority's position. A discrepant message with minority support that cannot be neglected any longer (cf. Figure 5.1) elicits divergent systematic processing partly focused at falsifying the minority's position and at finding additional support for one's own point of view. Convergent systematic processing should be related to attitude change on focal rather than related issues, since the focal issue provides one way to elicit a favorable impression from the (majority) source (see also Conversion Theory's predictions in this respect). Convergent systematic processing might be related to attitude change on related issues more than on focal issues because it is especially the focal position against which the recipient rebels.

Figure 5.3 provides a schematic summary of this dual-role interpretation of majority vs. minority influence. The Figure reveals our contention that majority support will most probably, albeit not necessarily, lead to convergent systematic processing, due to the initial lowering of the actual confidence level (AC). This results in attitude change on focal and perhaps also on related issues. Of course, when the Sufficiency Threshold (ST) is so low that the actual confidence cannot fall substantially below it, heuristic acceptance of the majority message will lead to focal but not related change. Minority influence in itself is not motivating. Only when neglect is impossible (cf. Figure 5.1) will minority support lead to divergent processing, because only then does actual confidence fall below one's Sufficiency Threshold. This divergent activity at best elicits attitude change on related issues. When neglect is possible, or when the Sufficiency Threshold is very low, heuristic rejection of the minority message will result in no change at all. Focal change will be absent, because it is against this position that the recipient actively rebels. Of course, each of these processing modes is not uniquely tied to either majority or minority support, neither will majority support or minority support always trigger the proposed processing modes. The nature of the relations in Figure 5.3 is probabilistic rather than deterministic. Other variables as specified by HSM may influence the probability of occurrence of each processing mode (see, in particular, Kruglanski & Mackie, 1990).

LIMITATIONS AND AVENUES FOR THE FUTURE

Our dual-role interpretation of majority vs. minority influence by no means implies that the last word about this topic has been said. On the contrary,

Figure 5.3 Dual-role interpretation of majority vs. minority influence in terms of heuristic-systematic model of persuasion

many issues remain to be studied. In this section we will discuss several limitations to the dual-role interpretation and highlight some avenues for further research.

No Direct Evidence for Dual-role Interpretation

Perhaps the most obvious drawback of our analysis is that we do not have any direct evidence for it. Thus, we relied on reviewing and re-interpreting previous findings. Although we think this review lends general support for our interpretation, explicitly designed studies are much needed. For example, it is important to demonstrate that when external variables motivate recipients to systematically process a minority's message, recipients are indeed eager to find and use any counter-evidence available to them. Similarly, under what circumstances may majority influence lead recipients to desire refutation rather than acceptance of the message they received (cf., Kruglanski & Mackie, 1990)?

Another shortcoming of our dual-role interpretation is that although it is clear that divergent processing inhibits focal change, it remains unclear why divergent processing affects related change. One reason might be that related change is just a residual of systematic processing, a residual of suppressed focal change. Another possibility is that related change is the result of mere thought-induced attitude change (cf. Tesser, 1978). Thus, when external variables motivate engagement in systematic processing, the minority message points to the direction in which polarization should occur. Mugny *et al.* (1984) argue that recipients actively resist identification with a minority source. This suppresses focal but not related change. Of course, still other explanations may be possible, and future research is definitely needed to conclude this issue.

Nature of the Task

Recent research suggests more and more that the nature of the task in which majority and minority influence is investigated seriously influences the processes observed and the outcomes obtained. Research on mock juror decision-making distinguishes between "intellective tasks", in which one correct response can be objectively assessed, and "judgmental tasks", in which ethical, political, aesthetical, or attitudinal differences determine the judgment (Laughlin & Ellis, 1986). This research tends to show that in intellective tasks minorities endorsing the correct answer are more influential than in judgmental tasks (for similar conclusions, see recent reviews by Pérez and Mugny, *in press*; Pérez *et al.*, 1994). Within our interpretation, one explanation for this finding may be that people's sufficiency threshold is higher in intellective than in judgmental tasks, leading to a higher probability of systematic processing.

The current dual-role interpretation is predominantly based on what Laughlin would call judgmental tasks. We would argue that the first role identified—that of motivating to engage in systematic processing—is a fairly constant one, one that may operate even more strongly in intellective tasks where the expectation of consensus is obviously stronger. At the same time, however, we would speculate that in intellective tasks the second role identified—that of biasing systematic processing—may be attenuated and replaced by a generally strong accuracy-oriented systematic processing. Thus, in judgmental tasks more than in intellective tasks, one should observe majority influence to be associated with focal change and minority influence to be associated with related change. In intellective tasks, the source endorsing the correct response should in the long run be superior on all levels.

Involvement

Johnson and Eagly (1989, 1990) distinguish three different kinds of involvement in the attitude under debate. First of all, they mention *value-relevant*

involvement, defined as the psychological state that is created by the activation of attitudes that are linked to important values related to the manner in which the individual defines him or herself. Second, Johnson and Eagly mention *impression-relevant involvement*, defined as the psychological state that is created by the individual's concern with the consequences of his or her response or with the instrumental meaning of his or her opinion. Finally, they mention *outcome-involvement*, which is defined as the psychological state that is created by the individual's concern with the relevance of the issue to their currently important goals or outcomes. Within the context of HSM, we interpret higher involvement to heighten the sufficiency threshold rather than to decrease the actual confidence level, both possibilities leading to a higher probability of systematic processing.

There may be an interesting link between the different involvements proposed by Johnson and Eagly (1989) and the different processing modes triggered by majority vs. minority influence. We speculate that high impression-relevant involvement should stimulate convergent processing and thus heighten the impact of majority support, while high value-relevant involvement should stimulate divergent processing and thus the impact of minority messages.

SUMMARY AND CONCLUSIONS

In this chapter, we adopted the Heuristic-Systematic Model of information processing (Chaiken, Liberman, & Eagly, 1989) as a general framework to understand majority vs. minority influence. We reviewed research inspired by Conversion Theory (Moscovici, 1980) and concluded that when the recipient cannot neglect the minority's point of view any longer, minority messages produce private attitude change, especially on related issues (cf. De Dreu & De Vries, 1993). Discrepant majority messages violate expectations and therefore produce substantial systematic processing and concomitant private attitude change (Baker & Petty, 1994; Mackie, 1987). Thus, our first conclusion is that majority influence motivates engagement in systematic processing to a greater extent than minority influence.

In addition, our review revealed that majority influence may affect private attitudes on focal issues primarily, while minority influence predominantly affects private attitudes on related issues (cf. Wood *et al.*, 1994). This led us to examine more closely the nature of systematic processing stimulated by majority and minority influence. Consistent with Nemeth (1986), we argued that majority support may elicit convergent processing focused on confirming the majority's point of view, whereas minority support may elicit divergent processing focused on falsifying the minority's position while supporting one's own opinions. Expanding on HSM, we thus concluded that majority support

for discrepant messages most probably triggers convergent systematic processing promoting focal change, while minority support for discrepant messages may provoke divergent systematic processing promoting related change.

Taken together, it is suggested that numerical support for discrepant messages affects both the decision to engage in systematic processing as well as the manner in which the message is treated. Future research should focus on the nature of the task, and the psychological states associated with the attitude topic under debate, as important moderators of this general process.

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