

## **Persuasive constraint and expert versus non-expert influence in intention to quit smoking**

JUAN MANUEL FALOMIR-PICHASTOR<sup>1\*</sup>,  
FABRIZIO BUTERA<sup>2</sup> AND GABRIEL MUGNY<sup>1</sup>

<sup>1</sup>*University of Geneva, Switzerland*

<sup>2</sup>*University Pierre Mendès France at Grenoble, France*

### *Abstract*

*In a 2 × 2 design, after listing important personal reasons for smoking, 70 smokers were randomly told either that they had sufficient reasons for smoking (low internal constraint to change) or that they did not have sufficient reasons (high internal constraint to change) and were exposed to an anti-smoking message from a source with either expert (high external constraint to change) or non-expert (low external constraint to change) status. The main dependent variable was change in intention to give up smoking. The analyses revealed the predicted interaction between external and internal constraint: High internal constraint increased non-expert influence but not expert influence. Supplementary analysis showed that, when internal constraint was high, non-expert influence was related to the perceived quality of the message whereas when internal constraint was low, expert influence was related to the source's perceived motivation to inform, i.e. rather than to convince. These results were predicted on the basis of the link that targets establish in social influence settings between constraints to change that are internal (i.e. related to their personal beliefs, feelings or attitudes) and those that are external (i.e. related to the characteristics of the persuasive communication such as the status of the source). Copyright © 2002 John Wiley & Sons, Ltd.*

The present study has its roots in some of the effects of the anti-smoking campaigns that have been implemented since the 1950s. One consequence of these campaigns is that smoking has emerged as a behaviour that has little justification, since many smokers today have few if any good reasons for smoking. For instance, smokers are well aware of the negative consequences of cigarette smoking (cf. Brownson *et al.*, 1992; USDHHS, 1989; MIPNSD-EDIS, 1995), they generate more arguments against than for tobacco use, and they attribute greater overall importance to considerations against tobacco consumption, i.e. health and dependence, than in its favour, i.e. pleasure and relaxation (cf. Falomir, Mugny, & Pérez, 2000). A further consequence of these campaigns is that smokers constitute a stigmatised social group, since most of them share with non-smokers a dominant representation of smoking which includes a rather negative image of smokers (i.e. as people who are psychologically

\*Correspondence to: Juan M. Falomir-Pichastor, Université de Genève, FPSE, Psychologie Sociale, 40 bd du Pont d'Arve, CH-1205 Geneva, Switzerland. E-mail: [juan.falomir@pse.unige.ch](mailto:juan.falomir@pse.unige.ch)

disturbed; Echebarría, Fernández, & González, 1994). In addition, several restrictive measures on behaviour (cf. Roemer, 1993) have weakened smokers' social normativity and legitimacy (cf. Falomir *et al.*, 2000). In short, many smokers have today already made a first step towards accepting in some degree the various convergent elements that challenge their behaviour and identity; e.g. they acknowledge the absence of good reasons for smoking (see the concept of 'dissonant smoker', Festinger, 1957). A problem now faced by research and action on smoking cessation is how to lead these smokers to decide to quit smoking.

While it could be suggested that people who have already moved toward a counter-attitudinal position should be more easily persuaded to shift further in this direction, we consider this effect to be moderated by factors associated with the persuasive communication. The present study analyses this issue by proposing the notion of persuasive constraint in social influence settings. Constraint to change is defined as any factor that introduces a pressure upon the individual (e.g. a reason or motive) to yield to an opposite position. Two kinds of persuasive constraint will be considered, recipients' own internal constraint, associated with the questioning of their position (i.e. smokers' acknowledgement of their own lack of sufficient reasons for smoking), and external constraint associated with a persuasive argument (i.e. the status of the source).

### THE INTERPLAY BETWEEN INTERNAL AND EXTERNAL CONSTRAINTS TO CHANGE

Individuals who acknowledge one or more factors challenging their behaviour and identity find themselves experiencing what can be regarded as a high *internal constraint* to change. For instance, attitudes and behaviours that are sustained without sufficient reasons can be considered as 'weak' (see Petty & Krosnick, 1995), and individuals who accept a negative social image could feel dissatisfied with their social identity. These aspects could be expected to push recipients to adopt a more justifiable and positive social position, i.e. to decide to change. Since high internal constraint to change also means that recipients may have limited resources to defend their position, one can anticipate that their resistance to change will be weakened (see Eagly & Chaiken, 1993). Therefore, conditions for change should be met when recipients with high internal constraint to change are confronted with a persuasive message. However, the internal constraint to change does not operate in a social vacuum but needs to be understood in terms of the persuasive setting that makes it salient and that gives it a meaning, i.e. in relation to external factors of constraint.

In general terms, any external factor perceived by the individuals as increasing the evidence for a point of view opposite to their own can be regarded as an *external constraint* to change. For instance, external evidence might be provided both by the high quality of the persuasive arguments and by any heuristic that supports the validity of these arguments (e.g. majority support or source expertise, Chaiken, 1987). Although external evidence might normally be expected to strengthen the influence, this is not always the case (e.g. Petty & Cacioppo, 1986). Moreover, several studies have shown that under some conditions expert sources have less influence on smokers' intentions to give up smoking than do non-expert sources (e.g. Falomir, Mugny & Pérez, 1996; Falomir, Mugny, Maggi & Sanchez-Mazas, 2000; Pérez, Falomir & Mugny, 1995; Pérez, Moscovici & Mugny, 1991). The present study focuses on the point that expert sources do not always have more influence than non-experts, in particular because they introduce an external constraint to change that motivates targets to resist the influence.

Why might targets feel under more pressure to accept the point of view of an expert than that of a non-expert? It has been observed that explicit threats to the freedom of a target are particularly likely

to lead to a reactance effect when the source is expert (Brehm, 1966). However, when the source does not explicitly threaten a target's freedom or has no special power over the target, why should expert sources still be perceived as more constraining than non-experts? First of all, experts are considered as providing more compelling evidence for the position they advocate than are non-experts (Chaiken, 1987). In addition, high-status sources are more likely to be perceived as having an explicit influence function than low status sources (Pérez, Papastamou & Mugny, 1995). Indeed, high-status people such as experts do frequently direct the actions of others (e.g. health authorities and experts are responsible for preventive actions), and hence people consider experts' comments as more directive and compelling, and less as purely informative, than comments from others who have the same status as themselves (Holtgraves, 1994).

An important aspect of this is that targets are more sensitive to the influence relationship (i.e. relational concerns) when confronted with expert sources than when they encounter non-expert sources. This idea has its roots in Moscovici's (1980) notion that high-status sources such as majorities or experts achieve their influence through relational processes (e.g. social comparison) and that low-status sources such as minorities or non-experts exert an influence through information-related processes (i.e. validation). High-status sources induce greater dependence on the part of the targets (Asch, 1951; Deutsch & Gerard, 1955). Opposing them induces greater stress (Nemeth, 1986), and targets focus more attention upon them (Personnaz & Guillon, 1985). These considerations lead to the expectation that experts, as compared to non-experts, should be more salient in the persuasive context, and that information processing will therefore be more closely tied to the relationship with them and to the information they provide (see the notion of convergent thinking, Nemeth, 1986).

This analysis has received support from a study (Falomir *et al.*, 1996) in which smokers read an antismoking message that was attributed either to an expert source (university professors) or a non-expert source (college students). Participants were asked to indicate the first five ideas that came into their minds with respect to the message they had read. For each idea they had to indicate the extent to which they had thought of this before (an idea pre-dating the influence message), to what extent it had been directly suggested by the text (an idea derived from the influence message) and to what extent the idea had come to them at that moment (a self-generated idea). Results showed that thoughts were more closely linked to the influence relation, i.e., derived from the message, when the source was expert than when it was non-expert. Conversely, thoughts were more likely to be evaluated as having an origin prior to reading the message when the source was non-expert (see the effect of 'social cryptomnesia', Mugny & Pérez, 1989). Overall, these findings suggest that, compared to non-expert sources, experts are perceived by targets more explicitly as influencing their thinking, and that they are more likely to be seen as an external constraint to change. For example, expert sources may be perceived as trying to convince the target, while non-experts may be perceived more as sources of information.

The question of interest here is in factors that moderate the fact that expert sources can introduce a greater external constraint to change than non-expert sources. The position targets occupy in the influence relationship seems to be crucial to an understanding of the influence that occurs. We have found in two studies (Falomir *et al.*, 1996; Pérez *et al.*, 1995) that an anti-smoking argument has more influence on smokers' intentions to quit when attributed to an expert (i.e. university professors) as opposed to a non-expert source, but only when experimental room conditions allowed participants to smoke during the experiment. Conversely, a non-expert source had more influence than the expert source when smokers were not allowed to smoke. We interpreted these results in the following manner (Falomir *et al.*, 1996). The act of smoking allowed smokers to affirm their pro-smoking position (see Sherman, Nelson, & Steele, 2000; Steele, 1988), which thus countered the constraining influence relationship introduced by the expert source, and opened the way to a paradoxical influence. When smokers were not allowed to smoke, i.e. when smokers could not affirm their pro-smoking position, they found themselves constrained by the anti-smoking persuasive attempt introduced by the expert

source, and this motivated them to resist the influence. That a non-expert source had more influence than the expert source when smokers were not allowed to smoke suggests that non-expert sources do not introduce an external constraint to change. Smokers seem to change here in response to the conflict introduced by the antismoking persuasive message (Pérez *et al.*, 1995).

Overall, these findings suggest an interaction effect between external constraints in the direction of change (e.g. the status of the source) and other factors making targets sensitive to these constraints (e.g. factors weakening targets position). The present study focuses on the hypothesis that internal constraints (e.g. smokers' recognition that they lack good reasons for smoking, discussed earlier) moderate the effect of external constraints such as the status of the source. If expert sources lack influence to the extent that they are seen to be imposing external persuasive constraint, this effect should therefore be intensified when the targets' experience of constraint is high, i.e. when internal constraint is high. Thus, although the internal pressure targets experience to reconsider their position is expected to motivate them to change, their particular sensitivity to the external constraint introduced by an expert source will instead motivate them to resist the persuasion attempt. However, when targets perceive no external constraint, i.e. when the source is non-expert, their internal requirement to change should increase their motivation to use the information provided to reconsider their position.

## OVERVIEW AND HYPOTHESES

The present study is concerned with the impact of an antismoking message on smokers' intentions to quit smoking. We sought to determine whether an internal constraint to change would moderate the effect of an external constraint to change, namely the expertise of the source. Attempts at social influence and persuasion seek to enhance individuals' uncertainty, e.g. by denying the validity of their beliefs or attitude, as a means of leading them to change. Internal constraint was therefore operationalised in this study by manipulating the adequacy or otherwise of the reasons targets held for smoking. Before reading an antismoking message, participants who were all smokers were asked to write down as many arguments as they could in favour of smoking and were then informed that the number of arguments they had generated gave either an adequate demonstration (sufficient reasons) or an inadequate demonstration (insufficient reasons) that they had a clear understanding of the reasons why they smoked.<sup>1</sup> Subjects then read an antismoking message supposedly written either by an expert source or by a non-expert source. The main dependent measure was the change in smokers' intention to give up smoking (measured before and after the influence situation).

The main prediction was that there would be an interaction effect between internal and external constraints to change. Specifically, it was predicted that not having sufficient reasons (high internal constraint) should increase the influence of a non-expert source (ordinary citizens, i.e., low external constraint), but not that of an expert source (university professors, i.e., high external

<sup>1</sup>Several ways of operationalising internal constraint can be considered. For instance, in Falomir, Mugny, Quiamzade & Butera (2000) and Falomir, Pérez, and Mugny (in press) internal constraint was measured (not manipulated) by assessing at the pre-test the participants' initial agreement with arguments extracted from the antismoking message: Smokers with high internal constraint were those with greater agreement with the antismoking reasoning before reading the text. In Falomir, Mugny, Invernizzi, & Muñoz (in press) internal constraint was manipulated by asking smokers to describe themselves either through positive or negative stereotypical traits: smokers with high internal constraint were those who described themselves negatively. Finally, internal constraint was measured (not manipulated) in another study in preparation by asking participants to indicate at the pre-test their (dis)satisfaction with the image they have as smokers: Smokers with high internal constraint were those who acknowledged dissatisfaction with their image.

constraint). Indeed, the non-expert source is likely to be perceived as more concerned to inform than to convince, and the quality of the information provided by the source should predict the amount of change. The predictions are more ambiguous with respect to the low internal constraint conditions. On the one hand, having sufficient reasons for smoking should shield targets from the constraint introduced by the expert source, and thus facilitate its influence. On the other hand, such support for their behaviour may also prevent the occurrence of any influence.

## METHOD

### Participants and Procedure

The participants were volunteers for a research presented as a 'study of tobacco use'. The study consisted in completing an anonymous questionnaire comprising two booklets. Except where otherwise indicated, all the answers to the questions were to be given on 7-point scales (1 = not at all and 7 = yes absolutely; use of the scales was explained orally to the participants). Of the eighty-three subjects who participated in the study, data analysis was based on the 70 participants who had followed all the experimental instructions (see experimental induction). They all met the following criteria ensuring a sample of regular smokers: they had been smoking for at least one year, they smoked at least five cigarettes a day, and they did not express the maximum intention to quit smoking at the outset of the experiment.

These 70 participants included 45 women and 25 men, and their ages ranged from 16 to 30 ( $M = 23.03$ ,  $SD = 5.51$ ). They had been smoking on average for six and a half years ( $SD = 5.12$ ) and they smoked on average 14.88 cigarettes per day ( $SD = 7.14$ ). They had a strong positive attitude toward smoking ('do you like to smoke?';  $M = 6.20$ ,  $SD = 1.04$ ; 7 = yes), and when asked 'do you think you are a real smoker?' they generally said that they did ( $M = 5.30$ ,  $SD = 1.92$ ; 7 = yes). However, they were not very proud of this ('are you proud to be a smoker?',  $M = 2.06$ ,  $SD = 1.57$ ; 7 = yes), they recognised the health dangers ('in general, do you think tobacco can damage one's health?',  $M = 6.43$ ,  $SD = 1.17$ ; 7 = yes), and they were ambivalent about antismoking campaigns ('are you in favour of or against developing laws to limit tobacco consumption?',  $M = 4.20$ ,  $SD = 2.31$ ; 1 = in favour and 7 = against). Half of them had tried to quit smoking at least once. When pre-tested on their intention to quit smoking they did not express a strong intention to do so ('do you intend to quit smoking soon?';  $M = 3.73$ ,  $SD = 1.90$ ; 7 = yes).

#### *Pretest*

Participants answered questions about age and sex, their own smoking habits, and their initial intention to quit smoking soon. They were then asked to write down on a blank page all the good reasons they had for smoking. The first booklet was then collected and the second distributed.

#### *Internal Constraint to Change: (In)Sufficient Reasons for Smoking*

The list of good reasons participants produced at the end of the first booklet was used to introduce the internal constraint factor. Half of the participants were told that several studies conducted in

various countries had concluded that 'if a smoker can give at least two reasons for smoking, s/he has a very precise idea of the reason why s/he smokes' (low internal constraint). The 13 participants who gave less than two arguments were dropped from the study. The other half of the participants were told that several studies conducted in various countries had concluded that 'if a smoker cannot give at least eight reasons for smoking, s/he has no very precise idea of the reasons why s/he smokes' (high internal constraint). All participants gave less than eight arguments.

#### *External Constraint to Change: Expertise of the Source*

Participants were then asked to read an 'analysis of the socio-economic reasons why people smoke'. This introduced the second independent variable, namely the status of the source. They were told that we had asked 'some experts' (professors of political economy), and also 'some non-experts' (ordinary citizens) 'to write a text on this issue'. Half of the subjects were told they would be given the text written by the group of experts, and the other half were told they would be given the text written by the group of non-experts.

#### *Anti-smoking Message*

A one-page message followed (the same for all participants), describing smokers as toys manipulated by the tobacco industry, victims of the over-production society that creates in them an artificial need to smoke (see also Falomir *et al.*, 1996; Pérez *et al.*, 1995). Following the arguments, the message concluded with proposed actions such as increasing tax on the tobacco industry, forbidding pro-tobacco advertising, or forbidding tobacco sales to people younger than 18 years old.

#### *Post-test*

After reading the message, questions were asked either as manipulation checks or to help to clarify the nature of the processes accounting for the effects. First, the induction of internal constraint to change was assessed by two questions: 'Do you think you personally have enough reasons to smoke?' and 'Do you think you personally have good reasons to smoke?' Second, a semantic differential assessed the perception of the text's authors (on 7-point scales): 'unintelligent'–'very intelligent', 'non-expert'–'expert', 'have a low professional status'–'have a high professional status', 'close to you'–'far from you', 'similar to you'–'different from you', 'young'–'old', 'belong to a minority'–'belong to a majority', 'not likeable'–'likeable', and 'anti-tobacco'–'pro-tobacco'. Two questions assessed the perceived quality of the message ('To what extent do you think that the arguments reported in the antismoking message are true?', 'absolutely untrue'–'absolutely true', and 'Do you personally smoke for the reasons given in the text?', 'not at all'–'yes absolutely';  $\alpha = 0.86$ ). One item measured the perceived motivation of the source ('What was, in your opinion, the aim of the authors?', 'to inform'–'to convince') and another measured the participants' preferred reaction of smokers ('Do you think smokers should resist or yield to antismoking pressure?', 'resist'–'yield'). Finally, participants again indicated their intention to quit smoking (post-test of intention). After the second booklet was collected, participants were thanked and thoroughly debriefed.

## RESULTS

### Manipulation Checks

#### *Perception of the Source*

When the source consisted of professors in political economy, as opposed to ordinary citizens, it was perceived as more intelligent (respectively,  $M = 5.03$ ,  $M = 4.06$ ,  $F(1, 65) = 11.51$ ,  $p < 0.001$ ), as more expert ( $M = 5.20$ ,  $M = 3.26$ ,  $F(1, 65) = 26.16$ ,  $p < 0.001$ ) and as having a higher professional status ( $M = 5.22$ ,  $M = 4.33$ ,  $F(1, 65) = 6.93$ ,  $p < 0.02$ ; one participant did not complete the semantic differential). Manipulation of the influence source's status was therefore successfully achieved, and did not affect other dimensions such as closeness ( $F(1, 65) = 0.01$ , n.s.), similarity ( $F(1, 65) = 0.71$ , n.s.), age ( $F(1, 65) = 0.76$ , n.s.), numerical support ( $F(1, 65) = 0.12$ , n.s.), likeability ( $F(1, 65) = 0.24$ , n.s.), or pro- versus anti-smoking interests ( $F(1, 65) = 0.04$ , n.s.).

#### *Reasons to Smoke*

Participants produced an average of 2.98 reasons to smoke,<sup>2</sup> similar to the average found in previous studies (cf. Pérez, Mugny, Roux, & Butera, 1991). As expected, when internal constraint to change was low rather than high, participants considered that they had better ( $M_s = 4.50$  versus 3.45,  $F(1, 64) = 4.63$ ,  $p < 0.04$ ) and more sufficient ( $M_s = 4.85$  versus 3.45,  $F(1, 64) = 9.52$ ,  $p < 0.003$ ) reasons for smoking (two participants did not answer these questions). In sum, the internal constraint induction worked as expected. Compared to participants in the low internal constraint condition, those in the high internal constraint condition read the antismoking message feeling that they had weaker justifications for smoking.

### Change in Intention to Quit Smoking

A 2(source's status: expert versus non-expert)  $\times$  2(reasons to smoke: sufficient versus insufficient)  $\times$  2(pretest versus post-test measures) mixed ANOVA was performed with repeated measures on the last factor. The analysis revealed a significant interaction between the two experimental variables and the within-subjects factor ( $F(1, 66) = 7.48$ ,  $p < 0.008$ ). First, *post hoc* analyses were performed to compare the means for change (post-test minus pretest; cf. Table 1) between conditions. These revealed, as expected, that when the reasons to smoke were insufficient the non-expert source had more influence than the expert source ( $F(1, 66) = 6.38$ ,  $p < 0.02$ ). When the reasons to smoke were sufficient, the effect tended to be reversed, but it was not significant ( $F(1, 66) = 1.95$ ,  $p < 0.17$ ). Finally, while the induction of the adequacy/inadequacy of reasons for smoking did not produce significant differences when the source was expert ( $F(1, 66) = 0.87$ ,  $p < 0.36$ ), the non-expert source had more influence when participants believed they had insufficient as compared to sufficient reasons to smoke ( $F(1, 66) = 6.38$ ,  $p < 0.005$ ). Second, analyses performed to test for pretest/post-test differences revealed a marginally significant negative change for the sufficient reasons to smoke and non-expert source condition ( $F(1, 66) = 3.66$ ,  $p < 0.06$ ), and the expected significant positive

<sup>2</sup>The 207 reported reasons for smoking were coded into different categories. The most frequently mentioned reasons were physiological benefits (e.g. stress reduction, relaxation, weight control; 49.61% of reasons) and pleasure (30.43% of reasons). No other category of reasons accounted for more than 10% of the total.

Table 1. Change in intention to give up smoking, standard deviations and cell frequencies

Source's status:	Expert		Non-expert		
	Sufficient	Insufficient	Sufficient	Insufficient	
Reasons for smoking:					
	<i>M</i>	0.00 <sup>ab</sup>	-0.42 <sup>a</sup>	-0.67 <sup>a*</sup>	0.68 <sup>b*</sup>
	<i>SD</i>	0.79	1.07	1.35	1.89
	<i>n</i>	17	19	15	19

Note: Means with different subscripts differ significantly at  $p < 0.05$ .

\*Post-test differs from pretest at  $p < 0.06$ .

change for the insufficient reasons to smoke and non-expert source condition ( $F(1, 66) = 4.89$ ,  $p < 0.03$ ). No significant changes occurred in the expert source conditions.

### Perceived Quality of Arguments

As expected, high internal constraint to change benefits non-expert but not expert influence. Additionally, we have argued that non-expert sources may allow a transfer from high internal constraint to an increase in the intention to quit because they facilitate the link between information processing and change. Accordingly, it may be predicted that the change observed when targets are led to believe they have insufficient reasons to smoke will be related to the quality of the argument when the source is non-expert but not when the source is expert.

The mean score for perceived argument quality, where a positive value reflects greater argument strength, are presented in Table 2. A  $2(\text{source's status}) \times 2(\text{reasons to smoke})$  analysis of variance (ANOVA) was performed. This revealed no source status effect ( $F(1, 66) = 0.04$ , n.s.), internal constraint effect ( $F(1, 66) = 0.01$ , n.s.), or interaction effect ( $F(1, 66) = 0.12$ , n.s.). This finding is important as it shows that perceived quality of the arguments is independent of the experimental manipulations and may therefore be used as a moderator to predict influence on intention to quit smoking.

Two sets of hierarchical regression analyses were run, as suggested by Cohen and Cohen (1983), to test whether change in intention to quit is explained by the perceived quality of the arguments and whether this relationship is moderated by experimental variables. The main effects of source status (1 = expert and 2 = non-expert), reasons to smoke (1 = sufficient and 2 = insufficient), and perceived

Table 2. Mean scores and standard deviations of perceived quality of arguments, perceived motivation of the source and smokers' reactions

Source's status:	Expert				Non-expert			
	Sufficient		Insufficient		Sufficient		Insufficient	
Reasons for smoking:	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Quality of arguments	3.47	(1.54)	3.31	(1.50)	3.26	(1.64)	3.36	(1.38)
Motivation of the source <sup>1</sup>	5.35 <sup>a</sup>	(1.80)	5.53 <sup>a</sup>	(1.67)	4.53 <sup>a</sup>	(2.38)	2.82 <sup>b</sup>	(2.06)
Smokers' reactions <sup>2</sup>	4.29 <sup>b</sup>	(2.17)	3.05 <sup>a</sup>	(2.04)	3.20 <sup>ab</sup>	(1.42)	4.37 <sup>b</sup>	(0.83)

Note: Row means with different subscripts differ significantly at  $p < 0.05$ .

<sup>1</sup>1 = 'to inform' and 7 = 'to convince'.

<sup>2</sup>1 = 'to resist' and 7 = 'to yield'.

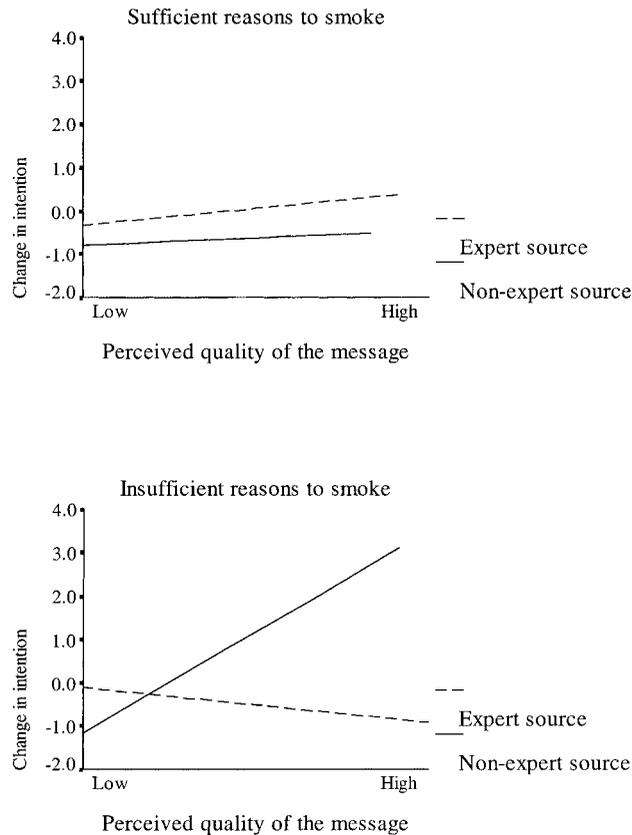


Figure 1. Change in intention to quit smoking (predicted values) as a function of perceived quality of the message and experimental variables

quality of arguments (from 1 = low to 7 = high) were introduced on the first step, two-way interactions were entered on the second step, and the three-way interaction term was entered on a final step.

None of the main effects explained the variance significantly ( $R^2 = 0.07$ ,  $F(3, 66) = 1.90$ , n.s.), but both the two-way interactions ( $\Delta R^2 = 0.14$ ,  $\Delta F(6, 63) = 4.05$ ,  $p < 0.02$ ), and the three-way interaction did so ( $\Delta R^2 = 0.06$ ,  $\Delta F(7, 62) = 5.78$ ,  $p < 0.02$ ). Figure 1 illustrates this interaction. When the reasons to smoke were sufficient, only the marginal effect of the source's status, previously identified by the ANOVA, was observed ( $\beta = -0.29$ ,  $p < 0.10$ ); the effect of perceived quality of arguments was not significant ( $\beta = 0.13$ , n.s.), nor was the interaction between these two variables ( $\Delta R^2 = 0.002$ ,  $\Delta F(3, 28) = 0.08$ , n.s.). Regression analyses performed within each source's status condition did not show any significant effect (expert source:  $\beta = 0.25$ , n.s.; non-expert source:  $\beta = 0.06$ , n.s.). When the reasons to smoke were insufficient, the main effect of source's status was significant ( $\beta = 0.34$ ,  $p < 0.04$ ), and though the main effect of persuasive strength was not significant ( $\beta = 0.24$ ,  $p < 0.12$ ), the interaction term did account for a significant increase in explained variance ( $\Delta R^2 = 0.16$ ,  $\Delta F(3, 34) = 8.30$ ,  $p < 0.007$ ). Regression analyses performed within each source's status condition showed the perceived persuasive strength of the message to be positively related to change in intention to quit smoking for subjects exposed to a message attributed to a non-expert source ( $\beta = 0.56$ ,  $p < 0.02$ ), but not for subjects exposed to a message from an expert source ( $\beta = -0.18$ , n.s.).

### Perceived Motivation of the Source

One remaining question is whether the lack of influence of the expert source arises from the link between the internal constraint to change and the perception of the source as trying to influence rather than to inform. It was expected that the expert source would be perceived as trying to exert an influence—or as less concerned purely with trying to inform—than the non-expert source, particularly when internal constraint was high. Additionally, it was expected that expert influence would occur only when the source was not perceived as constraining (i.e. was seen as informative rather than as seeking to persuade). In contrast the impact of the non-expert source should not be affected by such a relational concern. The perceived motivation of the source (1 = to inform; 7 = to convince; two subjects did not answer this question; see Table 2) was submitted to a 2(reasons to smoke) × 2(source's status) ANOVA. As expected, the analysis showed a main effect of the source's status ( $F(1, 64) = 13.36, p < 0.001$ ), indicating that the experts were perceived as more concerned to convince ( $M = 5.44$ ) than the non-experts ( $M = 3.63$ ). A marginal interaction effect was also observed ( $F(1, 64) = 3.82, p < 0.06$ ) revealing that the main effect of the source occurred when reasons for smoking were insufficient ( $p < 0.001$ ), but not when they were sufficient ( $p > 0.20$ ).

Even though this variable was not independent of the experimental factors, a set of regression analyses was performed as before to test the link between the perceived intentions of the source and the influence observed, moderated by the two experimental variables. None of the three main effects of independent variables significantly explained the variance (overall effect,  $\Delta R^2 = 0.03, \Delta F(3, 64) = 0.80, p < 0.50$ ). The two-way interactions did significantly increase explained variance ( $\Delta R^2 = 0.13, \Delta F(6, 61) = 3.41, p < 0.03$ ), but the three-way interaction did not ( $\Delta R^2 = 0.004, \Delta F(7, 60) = 0.32, p < 0.57$ ). Together with the two-way interaction between experimental variables reported in previous analyses ( $\beta = 1.80, p < 0.003$ ), the interaction between the source's motivation and the reasons to smoke tended towards significance ( $\beta = 0.90, p < 0.06$ ). The effect of the source's perceived motivation on intention to quit smoking occurred only in one experimental condition: when the reasons to smoke were sufficient, the less the expert source was perceived as trying to convince, i.e. the more as trying to inform, the greater the observed influence upon intention to quit ( $\beta = -0.57; p < 0.03$ ). However, this effect was not significant when reasons for smoking were insufficient.

### Smokers' Preferred Reaction to Antismoking Pressures

Since the internal constraint to change pushed smokers more strongly in the direction of deciding to give up smoking when the source was non-expert, their motivation to resist change should therefore have been lower. It was therefore expected that, when the source was non-expert, high internal constraint would lead the participants to express the view that smokers should yield to rather than resist anti-smoking pressures. Again, this effect should not be apparent for an expert source, and even the high internal constraint would here increase the view that smokers should resist rather than yield anti-smoking pressures. The stance recommended for smokers (1 = to resist and 7 = to yield) was submitted to a 2(reasons to smoke) × 2(source's status) ANOVA. This analysis showed an interaction effect ( $F(1, 66) = 8.68, p < 0.004$ ; see Table 2). Confronted with an expert source, participants showed greater preference for the view that the smokers should resist antismoking pressure when the reasons to smoke were insufficient than when they were sufficient ( $p < 0.03$ ). The opposite pattern was observed when participants were faced with a non-expert source; as compared to the sufficient-reasons-to-smoke condition, insufficient reasons to smoke led to a preference for smokers' acquiescence, rather than their resistance, to antismoking pressure ( $p < 0.05$ ). While participants in the insufficient-reasons-to-smoke condition considered that smokers should resist more strongly when the source was expert than when the

source was non-expert ( $p < 0.02$ ), those in the sufficient-reasons-to-smoke condition tended to consider that smokers should yield more when the source was expert ( $p < 0.08$ ). The regression analysis performed as before on intention to give up smoking did not show any significant effects.

## DISCUSSION

The main finding from the present study is that lacking good reasons for smoking (i.e., high internal constraint to change) increased smokers' intention to quit smoking when the antismoking persuasive message was attributed to a non-expert source but not when it was attributed to an expert source. Supplementary analyses showed that the experimental variables had an impact on the perceived motivation of the source (to inform *vs.* to convince) and on smokers' motivation (to resist *versus* to yield), confirming that these factors moderate the way targets interpret the influence relationship.

On the one hand, high internal constraint to change increased the tendency to perceive the non-expert source as informative, i.e. rather than as a source of influence, and increased its influence as a function of the perceived quality of the arguments. These results also give support to the hypothesis that low-status sources achieve their influence because targets are more inclined to focus on, and to validate, the persuasive information (Moscovici, 1980; see also Pérez *et al.*, 1995). More specifically, these findings suggest that the lack of external constraint helps targets to interpret the internal constraint not as a consequence of the influence relationship but as a personal necessity to change. In this case they are motivated to analyse available and useful information, and to modify their intentions according to its quality. The fact that high internal constraint causes participants to take the view that smokers should yield to antismoking pressures provides a further proof that their motivation when confronted with a non-expert source is devoid of defensive concerns.

On the other hand, high internal constraint resulted in less change when the source was expert. Supplementary analyses revealed that the expert source was perceived as trying to influence rather than to inform smokers. These findings give some support to the hypothesis that expert sources are perceived as introducing an external constraint to change, and that high internal constraint is more likely to be interpreted by targets in relation to this external constraint. Whilst no influence was observed when the internal constraint was low, results also showed that in this condition, as compared to that of high internal constraint, participants considered that smokers should yield to rather than resist antismoking pressures. This finding suggests that resistance to expert influence is lower when the internal constraint is low. Furthermore, influence in this condition was greater if the experts were perceived as an informative source rather than as a persuasive source. Therefore, the expert source had greater influence when constraint was low, both as a result of the targets' low internal constraint and to the extent that they perceived the source as not particularly motivated to convince them (i.e. low external constraint). Overall, these results give support to the main hypothesis that the persuasive constraint associated to the expert sources increases targets' motivation to resist and prevents any influence to occur.

One important finding is that the degree of influence achieved by the experts was not related to informational aspects, i.e. the perceived quality of the antismoking argument, but to relational aspects, i.e., the perception of the source as trying to inform rather than to persuade (cf. Falomir *et al.*, 2000). The results of a recent study provide some additional support for this idea (Falomir, Mugny, Quiamzade and Butera, 2000). Smokers, with weak versus strong beliefs about smokers' manipulation by the tobacco industry (respectively, low versus high evoked internal constraint), were exposed to the same antismoking reasoning as in the present study, but attributed to an expert source in all

conditions. They were then led to focus on four arguments that either the antismoking reasoning had caused them to think about (source-related interpretation) or they already had in mind before reading the text (self-related interpretation). While the former interpretation is considered to make salient the external constraint introduced by the influence relationship, the latter is considered to reduce the salience of this constraint. Results showed that when the internal constraint was high, which is to say when targets believed more strongly in manipulation by the tobacco industry, their intention to quit smoking increased when they made a self-related interpretation, but decreased when their interpretation was source-related. The opposite pattern of results was observed when the internal constraint was low; a source-related interpretation resulted in increased influence. In short, the intention to quit increased when smokers perceived themselves as the true source of the beliefs they already accepted, but decreased when they perceived the expert source as the real origin of these beliefs (see also Worchel & Brehm, 1970). Thus, influence appeared to be a function of the meaning that participants attributed to the information and its links with the influence relationship, rather than of the agreement with the information in itself.

One remaining question is why expertise becomes in some circumstances a constraining factor rather than simply an information relevant to holding or changing positions. The social influence and persuasion literature does not indicate any systematic effect for expert sources, and different processes and effects can be associated with variables such as expertise (e.g. McGuire, 1968; Petty & Wegener, 1998). The present study confirms the diversity of such effects, and leads to the view that expertise is not just a heuristic for the validity for attitudes or judgements, but that it also operates as a moderating factor activating different motives in targets. Degree of expertise can be regarded as a useful heuristic for decision making specifically when recipients' involvement is outcome-related rather than value-related (cf. Johnson & Eagly, 1989). When recipients are challenged on attitudes and behaviours that are linked to important and valued aspects of their identity, however, they will be particularly concerned with the treatment they receive at the hands of the source and with the influence attempt (i.e. they are particularly sensitive to how the change is demanded and achieved, cf. Falomir *et al.*, 2000), and rather less concerned with its usefulness. In this case, heuristics such as expertise may well be perceived as useless, or even unsuitable since they introduce a constraint to accept an opposite point of view that threatens targets' behaviours and identity. In other words, it is worth noting that persuasion-relevant information such as the status of the source is not only relevant to decision making but should be considered as a factor intrinsic to the influence relationship and one which determines the meaning targets give to the divergence of the points of view and the psychological processes of change that are activated (cf. Pérez & Mugny, 1996).

Another point concerns whether these findings can be more parsimoniously explained in terms of reactance (cf. Brehm, 1966). It could indeed, on the one hand, be argued that the experts were not influential simply because they were perceived as interested in persuading. Several characteristics of the present study challenge an explanation in terms of recovery of freedom. The fact that participation in the study was private, the fact that the source was not personally invested in writing the message but was invited to do so by the experimenter, the absence of implicit or explicit threats to the targets' freedom, and the fact that the internal constraint manipulation was unrelated to the source and to the influence relationship all make it difficult to interpret the observed results as responses on the part of participants to a perceived threat to their freedom. Furthermore, predictions concerning internal constraint cannot be clearly formulated within the framework of reactance theory. Indeed, a reactance effect should be observed mainly among smokers who were told that they had adequate reasons for smoking (i.e. those in the low internal constraint condition) who might perceive themselves as having a greater 'right' to smoke. However, supplementary analyses showed that these smokers were the least motivated to resist — or the most motivated to yield. Therefore, and taking for granted that targets may to some extent react against expert sources, the results of the present study are at least of value in

showing this effect to be moderated by targets' internal constraint. Whilst future research should highlight whether the effects of internal and external factors of constraint can to some extent be explained by the threat to the targets' freedom, we are more convinced by an explanation in terms of the salience of the influence relationship within which targets have to cope with the threat to the validity of their position.

As a conclusion, it is worth noting that the design of anti-tobacco programs may gain from recognising that many of today's smokers have to some extent internalised the anti-smoking position and will already feel some internal constraint to change. Misinterpreting this motive can result in the activation of processes of resistance to change, specifically when the persuasive campaigns introduce external constraints (e.g. experts or authorities) as a way of reinforcing their validity and confronting smokers with the judgment that their behaviour is unjustified. Our findings in this study suggest that in these particular circumstances persuasive campaigns may benefit from considering the particular sensitivity of smokers when confronting expert sources (e.g., by respecting their choice rather than trying to change them, see Falomir & Mugny, 1999) and from using non-experts as alternative sources of influence.

### ACKNOWLEDGEMENTS

This study was supported by the 'National Foundation for Scientific Research', Switzerland. We wish to thank the psychology students who collaborated in this research as part of their laboratory class work. We are also grateful to Federica Invernizzi for her helpful comments.

### REFERENCES

- Asch SE. 1951. Effects of group pressure upon the modification and distortion of judgment. In *Groups, Leadership and Men*, Guetzkow H (ed.). Carnegie Press: Pittsburgh, PA.
- Brehm JW. 1966. *A Theory of Psychological Reactance*. Academic Press: San Diego, CA.
- Brownson RC, Jackson-Thompson J, Wilkerson JC, Davis JR, Owens NW, Fisher EB. 1992. Demographic and socioeconomic differences in beliefs about the health effects of smoking. *American Journal of Public Health* **82**: 1, 99–102.
- Chaiken S. 1987. The heuristic model of persuasion. In *Social Influence: the Ontario symposium* (Vol. 3), Zanna MP, Olson JM, Herman CP (eds). Erlbaum: Hillsdale, NJ.
- Chaiken S, Liberman A, Eagly AH. 1989. Heuristic and systematic processing within and beyond the persuasion context. In *Unintended Thought*, Uleman JS, Bargh JA (eds). Guilford Press: New York.
- Cohen J, Cohen P. 1983. *Applied Multiple Regression/correlation Analysis for the Behavioral Sciences* (2nd edn). Erlbaum: Hillsdale, NJ.
- Deutsch M, Gerard HB. 1955. A study of normative and informational social influence upon individual judgment. *Journal of Abnormal and Social Psychology* **51**: 629–636.
- Eagly AH, Chaiken S. 1993. *The Psychology of Attitudes*. Harcourt Brace Jovanovich: New York.
- Echebarría A, Fernández E, Gonzalez JL. 1994. Social representations and intergroup conflicts: who's smoking here? *European Journal of Social Psychology* **24**: 339–355.
- Falomir JM, Mugny G. 1999. Influence sociale et résistance au changement chez les fumeurs. *Alcoologie* **21**(1): 25–29.
- Falomir JM, Mugny G, Invernizzi F, Muñoz D. in press. Influencia social y disociación: elaboración interna vs. externa de la amenaza de la identidad. *Revista de Psicología Social*.
- Falomir JM, Mugny G, Maggi J, Sanchez-Mazas M. 2000. El efecto del estatus de la fuente de influencia en función de la amenaza de la identidad y de la interdependencia de las posiciones. *Anuario de Psicología* **31**(3): 59–76.

- Falomir JM, Mugny G, Pérez JA. 1996. Social Influence and threat to identity: Does the fight against tobacco use require a ban on smoking? *International Review of Social Psychology* **2**: 95–108.
- Falomir JM, Mugny G, Pérez JA. 2000. Social influence and identity conflict. In *Attitudes, Behavior, and Social Context: The role of norms and group membership*, Terry D, Hogg M (eds). Lawrence Erlbaum Associates: London.
- Falomir JM, Mugny G, Quiamzade A, Butera F. 2000. Social influence and control beliefs in identity threatening contexts. In *Control of Human Behavior, Mental Processes, and Consciousness*, Perrig WJ, Grob A (eds). Lawrence Erlbaum Associates: London.
- Falomir JM, Pérez JA, Mugny G. in press. Estrategias de fuentes expertas y no expertas para influir en fumadores ya convencidos de la argumentación contra el tabaco. *Revista de Psicología de la Salud*.
- Festinger L. 1957. *A Theory of Cognitive Dissonance*. Row, Peterson: Evanston, IL.
- Holtgraves T. 1994. Communication in context: Effects of speaker status on the comprehension of indirect requests. *Journal of Experimental Psychology: Learning, Memory, and Cognition* **20**: 5, 1205–1218.
- Johnson BT, Eagly AH. 1989. The effects of involvement on persuasion: a meta-analysis. *Psychological Bulletin* **106**: 290–314.
- McGuire WJ. 1968. Personality and attitude change: an information-processing theory. In *Psychological Foundations of Attitudes*, Greenwald AG, Brock TC, Ostrom TM (eds). Academic Press: San Diego, CA; 171–196.
- Ministerio del Interior, Plan Nacional Sobre Drogas (MIPNSD-EDIS) 1995. *Encuesta domiciliaria sobre uso de drogas, 1995*. Delegación del Gobierno para el Plan Nacional sobre Drogas: Madrid.
- Moscovici S. 1980. Toward a theory of conversion behavior. In *Advances in Experimental Social Psychology* (Vol. 13), Berkowitz L (ed.). Academic Press: New York.
- Mugny G, Pérez JA. 1989. L'effet de cryptomnésie sociale. *Bulletin Suisse des Psychologues* **7**: 3–6.
- Nemeth CJ. 1986. Differential contributions of majority and minority influence. *Psychological Review* **93**: 23–32.
- Pérez JA, Falomir JM, Mugny G. 1995. Internalization of conflict and attitude change. *European Journal of Social Psychology* **25**: 117–124.
- Pérez JA, Moscovici S, Mugny G. 1991. Effets de résistance à une source experte ou minoritaire, et changement d'attitude. *Swiss Journal of Psychology* **50**: 260–267.
- Pérez JA, Mugny G. 1996. The conflict elaboration theory of social influence. In *Understanding Group Behavior: Small groups processes and interpersonal relations* (Vol. 2), Witte EH, Davies JH (eds). Erlbaum: Mahwah, NJ.
- Pérez JA, Mugny G, Roux P, Butera F. 1991. Influences via la comparaison sociale, influences via la validation. In *Perspectives cognitives et conduites sociales* (Vol. 3), Beauvois JL, Joule RV, Monteil JM (eds). Delval: Cusset.
- Pérez JA, Mugny G, Butera F, Kaiser C, Roux P. 1991. Integrazione tra influenza maggioritaria e minoritaria: conversione, consenso e uniformità. *Ricerche di Psicologia* **4**: 75–102.
- Pérez JA, Papastamou S, Mugny G. 1995. 'Zeitgeist' and minority influence-where is the causality: A comment on Clark (1990). *European Journal of Social Psychology* **25**: 703–710.
- Pernonnaz B, Guillon M. 1985. Conflict and conversion. In *Perspectives on Minority Influence*, Moscovici S, Mugny G, Van Avermaet (eds). Cambridge University Press: Cambridge.
- Petty RE, Cacioppo JT. 1986. *Communication and Persuasion*. Springer Verlag: New York.
- Petty RE, Krosnick JA. 1995. *Attitude Strength: Antecedents and consequences*. Erlbaum: Mahwah, NJ.
- Petty RE, Wegener DT. 1998. Attitude change: Multiple roles for persuasion variables. In *The Handbook of Social Psychology*, Gilbert DT, Fiske ST, Lindzey G (eds). McGraw-Hill and Oxford University Press: New York; 323–390.
- Roemer R. 1993. *Legislative Action to Combat the World Tobacco Epidemic* (2nd edn.). World Health Organisation: Geneva.
- Sherman DAK, Nelson LD, Steele CM. 2000. Do messages about health risks threaten the self? Increasing the acceptance of threatening health messages via self-affirmation. *Personality and Social Psychological Bulletin* **26**(9): 1045–1058.
- Steele CM. 1988. The psychology of self-affirmation: sustaining the integrity of the self. In *Advances in Experimental Social Psychology* (Vol. 21), Zanna MP (ed.). Academic Press: San Diego, CA.
- US Department of Health and Human Services (USDHHS). 1989. *Reducing the Health Consequences of Smoking: 25 years of progress. A report of the surgeon-General*. Rockville, MD.
- Worchel S, Brehm JW. 1970. Effect of threats to attitudinal freedom as a function of agreement with the communicator. *Journal of Personality and Social Psychology* **14**: 18–22.
- World Health Organisation. 1997. *Tobacco or Health: A Global Status Report*. WHO: Geneva.