Social Inhibition of Message Processing: Effects of Presence of Others on Processing Persuasive Messages

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This study examined whether processing persuasive messages is affected by the presence of others. Forty student participants received a persuasive message advocating top-up fees. Half received the message alone and the other half in the presence of ingroup members. Within each condition half of the participants received a weak message, while the others received a strong message. It was found that attitudes differed following strong and weak messages, indicating thoughtful message processing, only when participants were alone. In the group condition message strength had no effect, indicating more superficial message processing. Further, individual need for cognition interacted with message strength to determine attitudes, but only in the alone condition. In the group condition, there was some evidence that attitudes were related to identification and the assumed attitude of other ingroup members. Results are discussed in relation to early theories of the crowd and more recent developments in the social identity approach.

“Men, it has been well said, think in herds; it will be seen that they go mad in herds, while they only recover their senses slowly, and one by one.” (Mackay, 1841: 1980)

This quote from Mackay (1841:1980) epitomises the early view of crowds, and groups in general, as pathological (see also Le Bon, 1891:2002). They were believed to strip individuals of rationality and morality, unravelling millennia of evolution to expose an otherwise dormant or repressed state of primitive (un)consciousness. This negative view was not restricted to those who studied crowds. Janis (1982) was damning of high-level decision-making groups, and recommended several strategies to prevent groups from corrupting rational decision-making processes, a tendency they were inclined towards if left to their own devices. The general idea was that people stop thinking when they are in groups. They lose their individuality and fall prey to a form of contagion that corrupts their rational and moral faculties. This generally leads to negative outcomes, because people do not ponder relevant information or consider alternatives, and so end up making poor or even disastrous decisions.

The idea that groups influence people to relinquish their individuality, and in so doing lose their ability to think rationally, also runs through much theorising about social influence and persuasion. Most social influence theories distinguish between a form of influence that results from gathering and considering information, and one
that results from conforming to others. Examples include Festinger’s (1950) distinction between physical and social reality testing, Deutsch and Gerard’s (1955) distinction between informational and normative influence, and Kelman’s (1961) distinction between internalisation and identification. The implication in all of these is that social influence is not as real, valid, or enduring as that bought about through a consideration of relevant information (Turner, 1991). A similar view is widely espoused in the persuasion literature. The elaboration likelihood model (Petty & Cacioppo, 1986) and the heuristic systematic model (Chaiken, 1980) both propose two separate routes to persuasion: one via careful and thoughtful consideration of the arguments, and another via peripheral cues and heuristics (Petty, Cacioppo, Strathman, & Priester, 1994). The latter route, through which group influence is believed to operate, produces less valid and enduring attitude change than the former because it is based on simple cues like the attractiveness of the source or the number rather than quality of arguments (Chaiken, 1980).

These dual-process models of social influence and persuasion combine with early crowd and group research to imply that groups interfere with individuals’ ability to think, process information, and arrive at a considered opinion. However, is it necessary to separate social influence from information processing? Indeed, is it even possible to separate information processing from social influence? Turner and colleagues (Turner, 1991; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987; Turner & Oakes, 1989) suggest not. They argue that group influence, and social cognition more generally, is no less rational or moral than individual information processing, that group influence is informational (albeit a different sort of information) and, when the argument is taken to its logical extreme, information processing is always socially mediated. Research in other areas, too, refutes the notion that groups are in any way inferior to individuals. There is evidence that under the right conditions groups make better decisions than individuals (Postmes, Spears, & Cihangir, 2001), that they come up with better solutions (Swabb, Postmes, Spears, & van Beest, in press), and that crowd behaviour is far from unthinking (Drury & Reicher, 2000; Stott, Adang, Livingstone, & Schreiber, 2007).

This more positive view of groups, and the denial of traditional notions of the group as irrational, immoral, and unproductive, has developed out of social identity (Tajfel & Turner, 1979, 1986) and self-categorisation (Turner, 1985; Turner et al., 1987) theories. These theories propose that the self is constituted socially as well as a personally, so that group norms and opinions are genuine and valid constituents of the self. The error of the dual-process theories is that they tend to conceptualise the self as the personal self, and isolate rationality and morality in individual cognition. However, since groups are a genuine constituent of the self, social identity, and corresponding group behaviour, does not entail a loss of the self or its faculties. Group behaviour is rational when considered from the perspective of the social self and its concerns and motives.

Despite the strong theoretical negation of the idea that groups induce some sort of stupor, there have been relatively few attempts to investigate the effects of groups
on cognitive processing. One study that made an attempt to do so (McGarty, Haslam, Hutchinson, & Turner, 1994, Experiment 2) found only weak evidence that groups are conducive to thoughtful processing of the message. Participants were shown a persuasive message delivered by either an ingroup or outgroup member, under conditions where their group affiliation with the speaker was made salient or not. As well as measuring participants' agreement with the message, thoughtful processing was measured by asking participants to list the thoughts they had while listening to the message. When group affiliation was made salient, participants agreed more with the message when it was delivered by an ingroup rather than an outgroup member, and they also recalled more arguments when the message was delivered by an ingroup member. However, the number of arguments recalled did not mediate the effect of group membership on agreement, suggesting message processing and group membership had independent effects on persuasion.

Measuring thoughtful message processing in persuasive contexts can be difficult, and researchers have generally relied on some form of introspection like thought listing (see Petty & Cacioppo, 1986). Although useful, these are limited by potential interference from other cognitive processes, and generally yield correlational data that limit interpretation. One method that has been used successfully to overcome these limitations is reported by Petty and colleagues (Petty & Cacioppo, 1986; Petty, Wells, & Brock, 1976). This method involves presenting participants with a counter-attitudinal message that contains either strong or weak arguments (determined via a pilot test), crossed with a manipulation of some factor hypothesised to influence the extent of message processing, such as distraction (Petty et al., 1976). To the extent that the strong arguments produce more attitude change than the weak arguments, message processing can be said to have occurred. If the hypothesised factor moderates the difference between strong and weak arguments in terms of attitude change, that factor can be said to influence message processing.

This method has been used to identify a range of factors that moderate systematic processing of persuasive messages (see Petty & Cacioppo, 1986, for a review). For example, individuals tend to process messages more thoughtfully when the issue is personally relevant (Petty & Cacioppo, 1979; Petty, Cacioppo, & Goldman, 1981), when they are personally responsible for evaluating the message (Petty, Harkins, & Williams, 1980), and when they are high in need for cognition (Cacioppo & Petty, 1982; Cacioppo, Petty, & Morris, 1983). Need for cognition is an individual difference variable relating to the “need to structure relevant situations in meaningful, integrated ways” (Cohen, Stotland, & Wolfe, 1955, p. 291). Individuals high in need for cognition tend to engage in and enjoy effortful cognitive tasks more than individuals low in need for cognition and thus are more likely to engage in systematic processing of persuasive messages (Cacioppo et al., 1983).

Despite the wide range of factors identified as moderating systematic processing, investigations of the effects of social contextual factors, such as the presence of others, are surprisingly rare. In fact, we could find only one relevant study. Borden, Hendrik, and Walker (1976) gave individual psychology students a persuasive
message about health practices. Some students listened to the message alone, whereas others listened in the presence of two people, who were identified to students as ‘observers’. They found that students who were observed were significantly less likely to be persuaded by the message than those who listened to it alone. However, this study provided little evidence for the mechanisms through which others had this effect. To our knowledge there have been no other attempts to investigate the effects of presence of others on message processing and persuasion.

The current research aimed to assess the impact of the presence of others, or more precisely being in a group, on message processing, using the method developed by Petty and colleagues (Petty & Cacioppo, 1986; Petty et al., 1976). Participants were presented with a counter-attitudinal message containing either strong or weak arguments, either alone or in a group context. If being in a group context diminishes message processing, polarisation of attitudes following strong and weak arguments should be less in the group context than when alone. In addition, in order to assess the mechanisms through which message processing might be affected, the relevance of the issue to participants and their individual need for cognition were measured. It is possible that being in a group context may affect the relevance of the issue if it is differentially relevant to one’s personal versus social identity. If so, being in a group context may increase or decrease message processing, depending on how relevant the issue is to one’s social identity. Need for cognition was measured to assess whether being in a group affected individuals’ motivations to engage with the arguments and form an opinion. Since there are several theoretically plausible effects of group context on message processing, specific hypotheses were not advanced.

**METHOD**

**Participants:**

Participants were twenty male and twenty female students (n=40) from the University of Cambridge, aged between 18 and 22 years (median=20).

**Materials and Procedure:**

Ten males and ten females (n=20) were given a questionnaire and asked to complete it alone. The other half of the sample (n=20) were members of a choir who had met to rehearse. They were asked to complete the questionnaire in silence, in the same room together, before the rehearsal. Prior to each receiving questionnaires, all subjects were informed that the study was about attitudes towards university top-up fees. Those in the group condition were informed that they would be discussing the issue after questionnaire completion as a group, although this did not actually happen. No such instruction was given to those completing questionnaires alone. After completion, subjects were thoroughly debriefed.
Each questionnaire began by presenting a counter-attitudinal message advocating top-up fees for university places. The message was presented as an extract reproduced from a leading newspaper, ostensibly written by a vice chancellor of a major university. Both the strong and weak versions of the message began by describing actual recent legislation, currently in effect, allowing universities to charge a top-up fee of up to £3000 per year to students. Following this were six arguments in favour of top-up fees, presented in either a strong and convincing manner or a weak and less convincing manner, depending on condition. Message strength was determined by ten independent raters in a pilot study, and factor analyses clearly indicated loading of arguments onto two factors (strong and weak). Half of the participants in each condition (alone or in a group) were given the strong version and the other half the weak version of the message.

After receiving the message, participants were instructed to rate their agreement, using 7-point Likert-type scales (1 = ‘very strongly agree’ to 7 = ‘very strongly disagree’), with a set of ten attitude statements relating to top-up fees. Participants then completed an eighteen item scale measuring need for cognition (Cacioppo & Petty, 1982). Identification with other Cambridge students and choir members (group condition only for the latter) was assessed using modified versions of Doosje, Ellemers, and Spears’ (1995) four-item measure of group identification. Further items asked participants to indicate the importance of the topic to them, how persuasive the arguments presented in the message were, their awareness of others while completing the questionnaire, and what they thought the opinion of other Cambridge students and choir members (group condition only) was on the issue (1 = ‘very negative’, 7 = ‘very positive’).

Following completion of the question participants were debriefed and thanked for their time.

RESULTS

Manipulation checks:

Message strength:

To confirm the manipulation of message strength, participants in the main study were asked how persuasive they found the message to be. An independent samples t-test revealed that those in the strong condition rated the message significantly more persuasive ($M = 4.05, SD = 1.05$) than those in weak condition ($M = 3.20, SD = 1.00$), $t(38) = 2.62, p = .013$.

Presence of others:

Participants were asked how aware they were of the presence of others while completing the questionnaire. Participants in the group condition were significantly
more aware of others ($M = 4.35, SD = 1.39$) than those in the alone condition ($M = 2.55, SD = 1.47$), $t(38) = 3.35, p = .002$.

**Identification:**

Participants in both conditions were moderately identified with their university ($M_{\text{alone}} = 4.93, SD = 1.26; M_{\text{group}} = 4.91, SD = 1.21$), and there was no difference in identification between the two, $t(38) < 1$. Participants in the group condition identified more strongly with their group ($M = 5.84, SD = 1.10$) than with their university ($M = 4.91, SD = 1.21$), $t(19) = -2.42, p = .026$.

**Main analyses:**

**Attitude as a function of message strength and presence of others:**

A 2 (message strength: strong vs. weak) by 2 (context: alone vs. group) ANOVA revealed marginally significant main effects of context, $F(1,36) = 3.00, p = .092$, and message strength, $F(1,36) = 2.70, p = .109$. The interaction was non-significant, $F < 1$. Participants were more positive towards top-up fees following a strong message ($M = 4.14, SD = .91$) than a weak message ($M = 3.76, SD = .52$), and more positive when alone ($M = 4.15, SD = .79$) than in a group ($M = 3.75, SD = .68$; see Figure 1).

![Figure 1. Post-test attitudes as a function of message strength and persuasive context](image-url)
**Effects of topic relevance:**

Topic relevance ($M = 3.90, SD = 1.39$) did not differ across conditions, $Fs < 1$, and was negatively correlated with post-test attitude, $r = -.372, p = .018$. To assess whether topic relevance moderated the effect of message strength, a regression analysis regressed topic relevance (centered, see Aiken & West, 1991), message strength, and their interaction term on post-test attitude. Topic relevance and message strength were entered in step 1, and the interaction term in step 2. Topic relevance and message strength accounted for a significant proportion of variance, $R^2 = .21, F (2, 37) = 4.877, p = .013$, and the interaction term did not significantly improve on this, $R^2$ change = .004, $F < 1$. In the final model, message strength ($b = .267, t = 1.804, p = .080$) and topic relevance ($b = -.487, t = -1.718, p = .094$) were marginally significant predictors. Hence, topic relevance had a main effect only on post-test attitude: the more important participants considered to topic to be, the less positive they were towards top-up fees. It did not appear to affect message processing.

Given the main effect of topic relevance, the same 2 (strong vs. weak message) by 2 (context: alone vs. group) ANOVA was computed on post-test attitude, while holding topic relevance as a covariate. Topic relevance was a significant covariate, $F (1, 35) = 8.30, p = .007$, and the main effects of context, $F (1, 35) = 4.01, p = .053$, and message strength, $F (1, 35) = 3.64, p = .065$, were still marginally significant. The interaction term was non-significant, $F (1, 35) = 1.54, p = .223$, but given the apparently larger effect of message strength in the alone versus group condition, simple main effects analyses were conducted. The difference between strong and weak arguments was significant in the alone condition, $F (1, 35) = 4.94, p = .033$, but not in the group condition, $F < 1$. There also was a significant difference in post-test attitude between the alone and group conditions following the strong message, $F (1, 35) = 5.25, p = .028$, but not following the weak message, $F < 1$. Hence, message processing appeared to be stronger in the alone condition than in the group condition.

**Effects of Need for Cognition:**

NFC ($M = 88.93, SD = 11.36$) did not vary by condition, $Fs < 1$, and was not significantly correlated with post-test attitude, $r = .104$, ns. To assess whether NFC moderated the effect of message strength, regression analyses regressed NFC (centered), message strength, and their interaction term on post-test attitude. The simple relationships between NFC, message strength, and post-test attitude were not significant, $R^2 = .08, F (2, 37) = 1.50, p = .236$. The interaction term, however, was a significant predictor, $b = .512, R^2$ total = .20, $F (3, 36) = 2.98, p = .044$. To assess whether this interaction varied by context, the same analysis was carried out separately on those in the alone and group conditions. The interaction term was a significant predictor of post-test attitude in the alone condition, $b = .774, t = 3.04, p = .008, R^2$ total = .47, $F (3, 16) = 4.64, p = .016$, but not in the group condition, $b = .176, ns, R^2$ total = .05, $F < 1, ns$. The interactions between NFC and message strength in the alone and group conditions were decomposed by centering NFC one standard
deviation unit above and below the mean (Aiken & West, 1991). In the alone condition, the standardized regression coefficients for NFC predicting post-test attitude were -.678 ($p = .031$) for those receiving the weak message, and .591 ($p = .072$) for those receiving the strong message. In the group condition, these coefficients were .002 and .217 ($ps > .54$) in the weak and strong message conditions respectively (see Table 1).

Table 1
Unstandardized Beta Weights for the Relationship Between NFC and Post-Test Attitude Following Strong and Weak Messages, Alone and in the Group Condition.

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Identification, group attitude, and post-test attitude:

Relationships between identification with the group, perceived group attitude, and post-test attitude were examined amongst participants in the group condition\(^1\). A regression analysis was conducted to assess whether post-test attitude was predicted by assumed group attitude, and whether such a relationship was moderated by group identification. Group identification and assumed group attitude were centered and an interaction term computed. These variables were regressed onto post-test attitude as described above. Identification and assumed group attitude alone did not account for a significant proportion of variance in post-test attitude, $R^2 = .074$, $F < 1$. However, adding the interaction term significantly increased the amount of variance explained, $R^2$ change = .257, $F (1, 16) = 6.14, p = .025$. This interaction was decomposed by centering identification one standard deviation unit above and below the mean. For those high in identification the relationship between assumed group attitude and post-test attitude was not significant, $b = .292 (p = .214)$. For those low in identification the relationship was negative and marginally significant, $b = -.994 (p = .053)$ (see Figure 2).

\(^1\) Since participants in the alone condition did not have a reference group, it was not possible to assess relationships between post-test attitude and group identification and attitude.
DISCUSSION

The current study provides some evidence of reduced message processing in the presence of others compared to when alone. Participants in the alone condition reported more positive attitudes towards top-up fees following a strong message than a weak message, whereas participants in the group condition did not. Further evidence is found in the relationships between need for cognition and post-test attitudes following strong and weak messages. When given a weak message advocating the merits of top-up fees, NFC was correlated with more negative attitudes; when given a strong message, NFC was correlated with more positive attitudes towards top-up fees, but only amongst those in the alone condition. No such effect occurred in the group condition, where the strong message had no more of an impact on attitudes than the weak message, even amongst those relatively high in need for cognition. Hence, when alone, individual need for cognition appeared to motivate thoughtful consideration of the arguments whereas in the group condition it did not.

Why did participants in the group condition appear to engage in less thoughtful processing of the message? It was not through a change in the relevance of the issue. Participants in both conditions rated the issue equally relevant to them, and relevance did not moderate systematic processing. It had only a main effect on attitudes. Nor was it due to a change in NFC, since overall NFC scores were the same across conditions. Participants in the group condition were no less motivated to
“structure relevant situations in meaningful, integrated ways” (Cohen et al., 1955, p. 291) than those in the alone condition.

Instead, there was some evidence that participants’ attitudes were linked to the assumed attitude of the group in which they were situated, and that this link was moderated by their identification with the group. Surprisingly, the nature of the interaction between identification and conformity was such that amongst high identifiers there was no significant relationship between assumed group attitude and their own attitude, whereas amongst low identifiers the relationship was negative. This could suggest that low identifiers were differentiating themselves from the group, while high identifiers were neither conforming nor differentiating. Nevertheless, the interaction per se suggests that the attitudes of participants in the group condition were at least partly influenced by the assumed attitude of the group and their identification with it.

Taken together, the evidence suggests that participants in the group condition did not engage in elaborate message processing, regardless of the relevance of the topic to them or their individual need for cognition. However, we do not equate this with a pathology or loss of rationality in the sense of Le Bon or Mackay. Rather, we take a social identity perspective (Postmes, Spears, & Lea, 1999; Spears, Postmes, Lea, & Watt, 2001; Turner, 1991) and view participants in the group condition as responding in terms of their social rather than personal identity, so that their attitudes were guided by the (assumed) position of the group as a whole. When in isolation, and acting in terms of personal identity, individuals have relatively little ‘social’ guidance from which to form an attitude, so they may be more likely to look to available information to help them reduce their uncertainty about the appropriate (valid) attitude to hold. In contrast, those in group contexts, where their social identity is salient, are guided by the (assumed) attitude of others in the ingroup, who provide a valid source of information about the correct or appropriate attitude for a group member to hold (see Turner, 1991). Consequently, ‘information’ per se is less important for attitude formation. Importantly, this is not blind conformity: group members are just as motivated to structure situations in relevant and meaningful ways, but this structuring occurs through social comparison processes rather than through systematic processing of third-party information.

Of course, our interpretation of the findings must be considered speculative, since they are based on a single small study. It would be necessary to replicate and extend these findings to both confirm the impact of others on message processing and clarify the mechanisms of such effects. For example, it would be useful to investigate the effects of group size (cf. Asch, 1956) and whether similar effects occur in the presence of outgroup members. One could also systematically vary the relevance of the topic to the group and to the individual, particularly since high topic relevance increases message processing when alone (Petty & Cacioppo, 1979; Petty et al., 1981). The current study provides only a small step towards understanding the effects of others on message processing, but it illustrates a useful method for further research in this area.
The current study, while small, provides fairly clear evidence of a difference in message processing between group and individual contexts. Participants in isolation of others appeared to engage in thoughtful message processing, particularly to the extent that they had a high need for cognition, whereas those in the group context did not, regardless of their need for cognition. We do not wish to interpret this effect as evidence of a regression to primitive (un)consciousness aka Le Bon, but we can see how one might arrive at such a view. To the extent that we value careful consideration of arguments and equate such activity with rational thought, as we are taught to do in the sciences, we may be inclined to interpret an apparent lack of it in group contexts as a loss of rationality and, perhaps, a loss of morality as well. Consequently, groups may be seen as problematic, even evil, and something to be avoided. Seeing beyond this view has taken social psychologists many decades, and is likely to take the non-scientific public several more.

References


