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Titre :

Communication engageante et requête problématique : application au domaine de la sécurité routière

Title :

Binding communication and problematic request: application in the field of road safety

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Résumé

Introduction. – La majorité des études ayant recours au paradigme de la communication engageante vise l'obtention de requêtes dont la nature reste essentiellement pro-sociale.

Objectif. – L'objectif de cette recherche vise à évaluer l'importance de la cible d'une stratégie de communication engageante (centrée sur soi vs. autrui) et sa plus grande efficacité comparativement à la communication persuasive au regard d'une problématique contre-attitudinale : la réduction de la vitesse des conducteurs de deux-roues motorisés (2RM).

Méthode. – Cent seize conducteurs de 2RM sont aléatoirement placés dans quatre conditions expérimentales : communication engageante centrée sur soi, communication engageante centrée sur autrui, communication persuasive, condition contrôle.

Résultats. – La communication engageante centrée sur soi permet d'accroître plus fortement l'intention comportementale relative à une requête problématique par rapport à la communication engageante centrée sur autrui ou la communication persuasive.

Conclusion. – Les perspectives de recherches proposées en guise de conclusion appellent une réflexion plus large sur la conception et l'évaluation des campagnes de prévention ayant recours au paradigme de la communication engageante.

Abstract

Introduction - Most studies using the binding communication paradigm aim at obtaining requests whose nature remains essentially pro-social.

Objective - The objective of this research is to evaluate the importance of the target of the binding communication strategy (self-centred vs. focused on others) and its greater

effectiveness compared to persuasive communication with respect to a counter-attitudinal issue - reducing the speed of riders of powered two-wheelers (PTW).

Method - One hundred and sixteen 2WD drivers are randomly placed in four experimental conditions: binding self-centred communication, binding communication focused on others, persuasive communication, and control condition.

Results - Binding self-centred communication allows for a greater increase in the behavioural intent of a problematic request compared to binding communication focused on others or persuasive communication.

Conclusion - The research prospects proposed as a conclusion call for a broader reflection on the design and evaluation of prevention campaigns using the paradigm of binding communication.

Mots-clefs : communication engageante, persuasion, deux-roues motorisés, vitesse, campagnes de prévention

Keywords: Binding communication, persuasion, motorcycles, speed, prevention campaigns

Introduction

The mortality rate of the two-wheeler drivers (2WD) on the road is of particular concern: while they represent only 2% of the circulating transport, their share amounts to more than 20% in fatal accident statistics (ONISR, 2017). Speed is a major factor in the accident rate of this group among the main risk factors as it is found in the increase of frequency (Taylor, Lynam, & Baruya, 2000) and severity of the accidents of this group (Lin, Chang, Huang, Hwang, 2003, Lin and Kraus, 2009). Accident research shows that the speed that is inappropriate for the situation (i.e. too high without being illegal) influences more on the accidental risk of 2WD (Lardelli-Claret et al., 2005; Taylor, Lynam, & Baruya, 2000; Van Elslande, Fournier, & Jaffard, 2011) than excessive speed (i.e. exceeding existing limits). There is therefore an interest in identifying action levers to encourage 2WD drivers to reduce their speed, regardless of their profile (traffic offender of speed or not).

That being said, motorcyclists generally have an explicit and positive attitude towards speed (Tamisier, 2017). Speed is one of the main sources of motivation to practice 2WD for learners (Jordehi, Rose, & Thompson, 2013) and contributes to the building of their biker identity (Banet & Bellet, 2009). With regard to behaviour, motorcyclists adopt higher overall speeds than all other road users and on all types of networks (ONISR, 2015), which seems to be the norm for this category of users. In light of these considerations and numerous links between norms and attitudes on the subject of speed (e.g. Aberg, 1999; Blincoe et al., 2006; De Pelsmacker & Janssens, 2007), the latter is therefore pro-attitudinal, pro-motivational and presumably pro-normative for 2WD drivers. According to Beauvois and Joule (2010), speed reduction therefore appears to be a particularly problematic act since it is not consistent with their attitude or motivation.

To combat poor road safety, and in particular overspeeding, public policies have traditionally relied on the massive dissemination of prevention campaigns based on the principles of

persuasive communication. The effectiveness of persuasive communication as a vector generating new knowledge or having an impact on attitudes towards an object is well established (e.g. Brown & Albarracín, 2005). Among numerous variables that make it possible to optimize their effects (cf. Girandola, 2003 for a review; Girandola & Joule, 2013), particular attention must be paid to the relevance of the material (Rimer et al., 1999). According to Fylan, Hempel, Grunfe, Conner and Lawton (2006), the latter must be "*made for the subjects* " (p.53). In other words, a tailor-made message gets better effects in terms of many criteria (change of attitude, attractiveness of the message, perceived quality and effectiveness of the message, etc.) than a generic message (e.g. Jensen, King, Carcioppolo, & Davis, 2012; Kreuter, Bull, Clark, & Oswald, 1999; Scholes et al., 2003).

The role-playing technique initially conceptualized by Janis and King (1954) consists of directly involving participants in the message building by suggesting that they imagine and design their arguments. The effectiveness of such a method in terms of attitudinal modification has been recognized for more than half a century and its effects have also been observed on counter-attitudinal problems (e.g. Greenwald, 1969; Greenwald & Albert, 1968; Lehman, 1970; Mittler & Brouch, 1975). In a process of optimizing and specifying the procedure, Briñol, McCaslin and Petty (2012) recently redesigned the procedure by proposing to distinguish the target from the task of self-persuasion (self vs. others) and the direction of arguments (pro-attitudinal vs. counter-attitudinal). They formulate the hypothesis of a variation in the effectiveness of the instruction as a function of the initial position of the participants' attitude and reveal, in particular, in a counter-attitudinal request situation, that the task of self-persuasion allows a more significant change in attitude when the generated arguments are focused on oneself rather than on others. Indeed, students who express a negative attitude towards the increase in university tuition fees rate this increase more

favourably after trying to convince themselves of the interest of this increase rather than after trying to convince others.

However, although the effects of persuasion are undeniable on the cognitive level, the results on the behavioural side remain more fragile (Albarracín, Durantini, & Earl, 2006; Dukes, Ullman, & Stein, 1996). Several research programs using a longitudinal approach have revealed the limits of persuasion, whether in the field of health (Petersen, Heesacker, Schwartz, & Marsh, 2000) or that of road safety (Delhomme et al., 1999). The conclusions of these programmes highlight the necessity but inadequacy of traditional behaviour change communication. The GADGET research project led by Delhomme (1999) shows, for example, that a significant 8% reduction in the number of accidents can only be achieved if prevention campaigns are accompanied by other measures (incentives, penalties or other). In short, persuasion makes it possible to bring new knowledge, modify existing knowledge, stimulate certain reflections or awareness and influence beliefs or attitudes, but its effects on the promotion and adoption of new practices are limited.

For its part, Kiesler's theory of commitment (1971) suggests the idea of a link between the individual and his or her actions. According to Joule and Beauvois (2001), the commitment refers "*in a given situation to the conditions in which the performance of an act can be attributed only to the person who performed it*" (p.60). In other words, commitment would be a function of the causal attribution and degree of internalization of behaviour by the subject. From this perspective, the contribution of the free will compliance techniques is undeniable (Beauvois & Joule, 2010), including in the field of road safety such as the promotion of seat belt use (Cope, Grossnickle, & Geller, 1986; Geller, Rudd, Kalsher, Streff, & Lehman, 1987), the prevention of driving under the influence of alcohol (Taylor & Booth-Butterfield, 1993) or compliance with speed limits by drivers (Delhomme, Grenier, & Kreel, 2008; Delhomme, Kreel, & Ragot, 2008). At the same time, Pascual, Guéguen, Pujos and Félonneau (2013)

demonstrated the effectiveness of binding procedures on problematic request by, for example, making passers-by to become accomplices in the theft of a road sign by a colleague of the experimenter by first having the naive subjects answer a short questionnaire on the referendum on the European Constitution (neutral request). To go further, in a second experiment the experimentalists make a problematic request directly to the participants (get and give a pornographic magazine to an experimenter's friend aged only 12) before the target request (pay instead of the child) has been made. These results will be confirmed and extended to problematic implicit requests (Guéguen & Pascual, 2015). In other words, an explicit face-to-face request is not a necessary condition for the involvement of participants in the performance of a counter-attitudinal task.

At the same time, some researchers have devoted themselves to the creation and development of a new approach based on a paradigmatic renewal (Girandola & Joule, 2012; Joule, 2000; Joule, Py, & Bernard, 2004). According to Girandola et Joule (2008, 2012, 2013), binding communication is aimed to build a conceptual bridge between the persuasive communication and commitment theory. The paradigm is structured around two interacting components: the first one requires processing persuasive information contained in a message and the second one involves leading target individuals to "*carry out inexpensive psychomotor 'mini acts just before, during and/or right after the processing of persuasive information' related to the social action to be promoted*" (Courbet, Fourquet-Courbet, Bernard, & Joule, 2013, p. 7). In other words, it is no longer simply a question of asking oneself the only questions "*who says what to whom*" (Lasswell, 1948) but also "*by making him do what*", i.e. to ask oneself the question of the act that it is necessary to get from the individual whose help is sought (Joule, Py, & Bernard, 2004).

For example, Fonte, Blondé and Girandola (2017) were able to obtain a stronger behavioural intention for blood donation from the students who signed a petition in favour of promoting

donation prior to exposure to a persuasive message. In another research on the scale of two cities of equivalent size (Joule, 2004) the binding communication also made it possible to better contain the annual increase in residents' electricity consumption by accompanying the dissemination of an information campaign involving many stakeholders (associations, schools, clubs, etc.) in a series of engaging actions such as discussion forums, event days or the signing of a commitment charter: +5.5% increase in electricity compared to 13.9% in the city exposed to persuasive communication.

Binding communication has therefore been successful in the areas such as the environment (Girandola, Souchet, & Michelik, 2008; Joule, Bernard, Lagane, & Girandola, 2007; Souchet, Girandola, & Lucas, 2008) and health (Girandola, Joule, Bernard, & Souchet, 2012; Joule, Bernard, Geissler, Girandola, & Halimi-Falkowicz, 2010), both of which are known to have essentially pro-attitudinal, pro-motivational or pro-normative issues. Pro-ecological or (Milfont, 2009) blood donation behaviours have a pro-social nature (Charles-Sire, Guéguen, Martin, & Meineri, 2012). Moreover, those latter are underpinned by a positive attitude (e.g. Agbovi et al., 2006; Ambroise, Prim-Allaz, & Séville, 2010, p. 21), also found in organ donation (Hamouda, Hamida, Benzarti, Zouari, & Chébil, 2010). However, to date no study has focused on addressing a road safety issue, the nature of which is explicitly counter-attitudinal for targets.

The objective of this study is to test the effectiveness of binding communication compared to persuasive communication in getting 2WD to express the intention to reduce their speed. With regard to a problematic request, the importance of considering the direction of the arguments in the context of a self-persuasion task (towards oneself vs. towards others) will also be assessed.

We put forward the general assumption that drivers placed in the binding communication conditions whose preparatory act consists of performing a self-centred, self-persuasive task will express a higher behavioural intention than drivers placed under other conditions (binding communication centred on others, persuasive communication or control condition).

Procedure

The sample gather a total of 116 participants ($M = 42$ years old; $SD = 14$ years old), the majority of whom are male (90%). Three out of four drive a roadster, sporty or road type¹, which is in line with the statistics found in the general population. The drivers were approached in a store car parking specialising in the sale of motorcycles accessories or on the occasion of the Grand Prix Moto of Le Mans in 2016. After ensuring that the participants were indeed 2WD of more than 125 cm³, the experimenter briefly presented the study as a survey aimed at questioning their practices and then asked if they would agree to give them their e-mail address to answer it. The questionnaire sent 2 days later was therefore presented digitally on the LimeSurvey platform. All participants ($N = 116$) were randomly assigned to each of the four experimental conditions: persuasive communication ($n = 27$), binding communication focused on others ($n = 29$), binding communication focused on oneself ($n = 29$) and control condition ($n = 31$).

¹ 70% of drivers adopting a high-risk driving style fall into one of these three categories according to the COMPAR project report (Ragot-Court et al., 2011).

Condition of persuasive communication

Participants in persuasive communication conditions were only exposed to a persuasive message introduced as follows: "*Road safety stakeholders designed an awareness campaign to convince drivers of the two-wheeled motor vehicles to drive slower. Please take a close look at the campaign below*". Being entitled "*Keep bikers on motorcycles*", this campaign fought in particular for speed reduction and was actually broadcast during an awareness campaign conducted in France in 2007. An item at the end of the questionnaire made it possible to control and confirm the absence of a possible recall effect of this campaign within each experimental condition.

The campaign in the form of an image displayed in the centre of the screen features a 2WD waving to another person in a wheelchair who responds in a similar way, suggesting that he is in fact a former injured motorcyclist. At the bottom of the photo the slogan reveals the following arguments: "*Alcohol and speed are the two main factors in serious accidents for motorcyclists when they are alone involved*". The logo and website of the Road Safety Delegation are placed side by side to identify the source of the message (Figure 1).



Figure 1 Image taken from the prevention campaign "Keep a biker on a motorcycle"

Condition for binding and directed communication focused on others

In this condition, along with the exposure to the message the participants were involved in the joint creation of a new so-called road prevention campaign. Based on the persuasive message this time derived from all other information (logo, slogan and website) and leaving only the image (Figure 2), the instruction was to imagine the arguments most likely to influence others:

"As a motorized two-wheeler driver, what arguments would be most likely to convince others to reduce their speed?"



Figure 2 Cropped image from the "Keep a biker on a motorcycle" campaign

Condition for binding, directed, and self-centred communication

The procedure was identical to the previous condition except that participants should not convince others but rather look for the arguments most likely to convince themselves to reduce their speed: *"As a motorized two-wheeler driver, what arguments would be most likely to convince you to reduce your speed?"*

Control condition

Participants in control condition only had to answer the last part of the questionnaire gathering the variables of interest.

Measures

Measures focused on the intention and magnitude of behaviour to reduce speed. The intention was divided into four items according to the types of roads most commonly used by the user

population: city roads, bypasses, roads and motorways. The purpose of this is creating a composite index of general intent based on the sum obtained from these four items weighted by the number of road types used by the driver with their 2WD.

The items were worded as follows: "*Do you intend to reduce your speed regularly in town / on bypasses / roads / motorways?*"

Place yourself on the scale from -5 (not at all intend to reduce it) to +5 (fully intend to reduce it). Intermediate grades make it possible to refine your judgment."

In order to understand the estimated reduction in their speed, participants were then asked to express the extent to which they intended to reduce their speed in km/h. The magnitude of this reduction was gathered by the following item: "*To what extent do you intend to reduce your speed in town / on bypasses / roads / motorways?*" Five response categories were offered to participants:

- From 1 to 3 km/h
- From 4 to 7 km/h
- From 8 to 10 km/h
- From 11 to 15 km/h
- More than 15 km/h

Results

Intention scores were transformed to spread from 0 (zero or negative intention) to 20 (maximum intention reported on all road types). The behavioural amplitude was recoded from 0 (no reduction) to 5 ("*more than 15 km/h*") so as to numerically characterize the overall amplitude of the proposed reduction. These indices were then weighted according to the number of road types used by the participants.

Before conducting the tests it is interesting to note in Table 1 that only the binding, self-centred communication group can engage a majority of drivers to express the intention to reduce their speed by counting nearly two out of three participants (62.1%). The higher proportion of drivers expressing a strong intention to reduce their speed in the control condition (41.9%) compared to other conditions (25.9% in the persuasive condition and 27.6% for binding communication focused on others) will be discussed as further limitations. The Chi2 test reveals a significant difference between the experimental conditions (binding self-centred communication, binding communication focused on others, persuasive communication and control), $\text{Chi}^2 = 10.05$, $\text{ddl} = 3$, $N = 116$, $p = .018$, Cramer's $V = .294$

Table 1 Percentage (%) of negative and positive intentions by condition

Condition	Zero or low intention in % (n)	Strong intention in % (n)	Number
Control	58,1 (18)	41,9 (13)	31
Persuasive Communication	74,1(20)	25,9 (7)	27
Binding communication focused on others	72,4 (21)	27,6 (8)	29
Binding self-centred communication	37,9 (11)	62,1 (18)	29
Total number	70	46	116

Note: Partial numbers are given in parentheses.

The conducted variance analyses are based on a multiple comparison using the Tukey post-hoc test. An overall overview of the means and standard deviations for each condition with respect to behavioural intent and magnitude is presented in the Table 2.

Regarding the behavioural intention, ANOVA (analysis of variance) reveals a significant difference between at least two conditions: $F(3, 113) = 6.168$, $p = .001$, adjusted $\eta^2 = .118$ The

post-hoc multiple comparison test shows a significant difference between the self-centred binding communication condition ($M = 5.14$) and all other conditions, the control condition ($M = 2.75, p = .046$), the condition of persuasive communication ($M = 2.19, p = .011$) and the binding communication condition focused on others ($M = 1.38, p = .000$).

Regarding the behavioural amplitude, the ANOVA indicates a significant difference between at least two groups: $F(3,113) = 7.977, p = .000$, adjusted $\eta^2 = .152$. The post-hoc test also reveals a significant difference between the condition of the binding self-centred communication ($M = 5.81$) and all other conditions, the control condition ($M = 3.23, p = .03$), the condition of persuasive communication ($M = 1.33, p = .000$) and the binding communication condition focused on others ($M = 2.55, p = .004$).

Table 2 Mean and standard deviations of behavioural intent and magnitude as a function of experimental conditions

Condition	n	Behavioural intention		Behavioural amplitude	
		Average	Standard deviation	Average	Standard deviation
Control	31	2.75	3.51	3.23	3.62
Persuasive Communication	27	2.19	3.48	1.33	2.16
Binding communication focused on others	29	1.38	1.94	2.55	3.32
Binding self-centred communication	29	5.14	4.66	5.81	4.75

Discussion

The results of this study confirm the greater effectiveness of the binding communication toward the persuasive communication provided that the target of the preparatory act is considered in a problematic request situation. To increase the probability of acceptance, the argumentative task used in the binding communication paradigm must be directed towards oneself rather than others. Specifically, binding and self-centred communication enables 2WD to express intention of reducing their higher speed compared to binding communication focused on others or persuasive communication. The same pattern of result is retrieved on the amplitude of this reduction. In other words, the participants who had to make arguments to be self-confident plan to reduce their speed to a greater extent (in km/h) than the participants placed under other conditions, including the time when the only difference is to persuade others rather than themselves.

In accordance with the interpretation of Briñol et al. (2012), these effects could be related to the hypothesis that the self is always perceived as " *a more important, precious and deserving target than any other* " (p. 926). People have a natural tendency to attribute desirable characteristics to them and reject unwanted ones. This strategy would allow for a more positive self-perception and confirms the primordial value of the self in relation to others, which favours the emergence of various biases such as aversion to dispossession (Kahneman, Knetsch, & Thaler, 1991), self-improvement bias (Krueger, 1998; Sedikides & Gregg, 2008) or the simple property effect (Nuttin, 1985). By activating the concept of the self, this search for self-centred arguments would increase the motivation of the participants to generate the most convincing possible arguments, *all the more* because they know their own attitude better than that of others (Dunning, Heath, & Suls, 2004), which would have consequence of positively impacting their level of commitment.

This hypothesis can also be related to the concept of action identification (Vallacher & Wegner, 1987) and in particular to one of the three fundamental principles, which emphasizes the importance of the feeling of a prevalent identity at the time of the action's occurrence. In concrete terms, the performed action must be recognized by the participant as belonging to a strong identity if it is to guarantee an optimal level of commitment (Wegner, Vallacher, & Dizadji, 1989). The self-centred instruction would therefore allow convergence between the social identity of 2WD and the self, resulting in reducing the perceived distance between the self and the task and thus supporting the basic assumption of the commitment theory that an individual is bound to his actions (Kiesler, 1970).

Although the motorcycle population is indeed characterized by a very strong social identity (Banet, 2010), some studies also show the existence of heterogeneous subgroups. These groups stand out strongly in terms of their motivation and practice, and more generally their vision of motorcycling (e.g. Banet, 2010; Del Sarto, 2012; Ragot-Court et al., 2011), which would shed light and better explain the underperformance of binding communication focused on others. Others would no longer refer to a clearly identified target and would make it difficult for participants to find arguments. The instruction would therefore interfere with the process of identifying the action but also with that of self-categorization (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), thus losing its relevance to the task. For example, customs drivers (essentially guided in their practice by a feeling of freedom) would not receive or find such powerful arguments to or from sports car drivers (mainly motivated by thrill-seeking). This increase in the perceived distance between oneself and others through the task would consequently lead to a drastic reduction in their motivation and, ultimately, their commitment.

The limitations of persuasion alone in behavioural change are also confirmed by this study: with nearly 3 out of 4 participants having a negative intention, persuasive communication

fails to get 2WD to intend to reduce their speed. It could then, similar to binding communication focused on others (for different reasons), have generated a reactance effect (Brehm, 1966). This hypothesis is all the more plausible because the very definition of reactance is based on the idea of a feeling of threatened freedom. However, this component is one of the main characteristics of 2WD practice for this population (Del Sarto, 2012). Girandola (2003) also assumes that an individual's level of reactance should be proportional to the initial margins of his attitude towards the object: "*the stronger the divergence between the initial attitude and the position defended in the message, the greater the reactance will be*" (p. 154). On the other hand, the threatening aspect of a message has negative consequences on the intention to emit the targeted behaviour (Bensley and Wu, 1991), which would be interesting to investigate through the qualitative analysis of the arguments given in the binding communication condition. This treatment as well as the measurement of the message exposure times in each experimental condition would provide additional insight into the mechanisms involved in the separate processes of commitment and persuasion.

From a methodological point of view, the propensity to acquiesce strictly positive Likert scales, on the one hand (Friborg, Martinussen, & Rosenvinge, 2006) and the analysis of the participants' post-experimental comments, on the other hand, prompted us to group negative intentions with zero intentions in all experimental groups (0 point meant for some lack of intention, while for others, it was rather an indecisive intention). Moreover, and given that the objective of this study was to reduce the speed of 2WD without distinction, all participants were retained in the sample although some differences are observed in the general population at their intention to drive fast according to their type of 2WD (Eyssartier, Meineri, & Gueguen, 2017). Increasing the sample would therefore have made it possible to analyse these results according to these and other criteria that may be relevant such as age or gender.

Although behavioural intention is a relatively reliable measure for predicting subsequent behaviours (cf. Webb & Sheeran, 2006 for a meta-analysis) including those related to speeds², an effective measure would confirm these encouraging results from an application perspective. However, the interest of this research lies in demonstrating the effectiveness of the binding communication paradigm in addressing a counter-attitudinal issue. The exploitation of the paradigm of binding communication on the Internet and social networks in particular are also encouraged by these results showing the relevance of the paradigm through its computer-based media coverage. In the digital age, asynchronous and digital communication must therefore be considered and developed in its entirety.

The authors declare to have no conflicts of interest.

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² Elliot (2001) observes a correlation between intention and speed behaviour of .542. Vogel and Rothengatter (1984) observe, for their part, a correlation of .79 on the motorway.

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