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ARTICLE

Police Tweets and Public Perceptions of Safety and Police Performance: An Experiment on Framing and Other Tweet Content

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The introduction of new media as a means of communication by the police triggers interesting questions about the impact of such new developments, such as the effect on people's safety perceptions. Since communication is mostly overlooked as a possible determinant of safety perception, this led to a research project into the relationship between Twitter use by community policing officers and citizen's perceptions of safety. This article reports on a part of this study, an experiment on framing and other linguistic effects of tweets by police officers. To assess the aforementioned relationship, it is important to examine how the precise content of a community policing officer's tweet is perceived by the public.

In an experimental setting the effects of gain versus loss frames, implicit versus explicit advice and style of addressing have been tested, with regard to safety perceptions and several related factors. The results show that gain framed tweets yield significantly more positive responses concerning opinion about police performance, perceived risk of burglary or assault, safety perception and marginally for perceived crime level in the neighbourhood. Including an explicitly or implicitly formulated piece of advice in the tweets doesn't make a difference in any of the queried variables and style of addressing has only small effects: formal address leads to slightly more positive opinions about police performance than impersonal address.

The results show that formulation aspects – specifically framing – are worth taking into account in safety communications and that this type of research is beneficial for studying effects of social media.

1. Introduction

A few years ago the Dutch police started using social media, including Twitter. The use of a new means of communication triggers interesting questions about the impact of such new developments, such as the effect on people's perceptions of safety. Taking into account that communication is mostly overlooked as a possible determinant of safety perception, this led to a research project into the relationship between the use of Twitter by community policing officers and citizen's safety perceptions. This article reports on a part of this study, an experiment on the effects of framing of tweets and other linguistic effects by police officers. To assess the aforementioned relationship, it is important to examine how the precise content of a tweet sent by police officers using Twitter, is perceived by the public. This is why the effects of gain versus loss frames, implicit versus explicit advice and style of addressing have been tested in an experimental setting, with regard to safety perceptions and several related factors. An experimental setting seemed particularly suited to investigate the effects of framing and other linguistic variations, as it allows for maximal control of the manipulation and exclusion of the role interfering factors. It also means that for this study an *in vitro* setting was used, with students as the participants. We accept the limited generalisability of the results reported below, as we feel that the effects of linguistic formulations on real audiences will come to the fore in the entire project.

Police officers' tweets have been systematically manipulated to fit these conditions and were presented to participants in two experiments. After the discussion of the theoretical framework of the study in paragraph 2, the actual experiments will be reported in paragraphs 3 and 4, along with a comprehensive explanation of the methodology and a brief discussion of the results. The article concludes with a general discussion and conclusion in paragraph 5.

2. Theoretical background

When the goal is to encourage someone to take action, whether it's displaying a certain type of behaviour or adopting a certain opinion, the way the message is formulated can make a difference – even though *rational decision theory* says it shouldn't. Multiple experiments (Kahneman & Tversky, 1984; McNeil, Pauker, Sox Jr, & Tversky, 1982;

among others) have shown that the *invariance principle* from this theory, which claims that the desirability of options doesn't depend on the way they are formulated or the order in which they are presented, doesn't stand the test of reality. As Tversky & Kahneman (1981) have shown with their experiment in which participants were given two choices, formulation certainly makes a difference in the choices people make. In the experiment participants could choose between two alternatives:

1. *'Would you participate in a game of chance with a 10 per cent chance to win \$95 and a 90 per cent chance to lose \$5?'*
2. *'Would you pay \$5 to enter a lottery with a 10 per cent chance to win \$100 and a 90 per cent chance to win nothing?'*

The two choices are identical in outcome: either way you've lost \$5 or gained \$95. However, the way these choices are framed are very different: in the first one, the \$5 you might lose are framed as a 'loss', in the second choice these \$5 are framed as 'costs' for participating in a lottery. The second choice produced more positive responses than the first one: ending up with \$5 less is apparently more acceptable when it is a cost than when it is a loss.

To have the recipient of a persuasive message form a certain opinion or to have any persuasion take place at all, a mental process has to be initiated in the recipient's mind (Petty & Cacioppo, 2012; Strack, 1992). The choice for a certain processing strategy – which is made subconsciously most of the time – depends on the cognitive efforts the recipient is willing and able to make in processing the message. Depending on multiple personal, situational and textual factors, different processes or even systems could be initiated. Models developed in the 1980s described two different cognitive processes: one for persuasion that requires conscious attention and one for effortless persuasion. Important *dual process models* that contain multiple corresponding elements are the Elaboration Likelihood Model (ELM) (Petty, Cacioppo, & Goldman, 1981; Petty, Rucker, Bizer, & Cacioppo, 2004) and the Heuristic Systematic Model (HSM) (Chaiken, 1980, 1987; Chaiken & Eagly, 1989). Kahneman (2011) describes the two separate systems that can be initiated as 'System 1' and 'System 2'.

System 1 deals with automatic and fast processing of the message. Recipients focus their attention solely on those parts of the message that enable them to use simple rules of thumb – known as *heuristics* – to determine whether the propagated point of view is correct. This process is called *low elaboration* or *the peripheral route to persuasion* in ELM and *heuristic processing* in HSM. System 2 requires conscious effort: the recipient pays conscious and comprehensive attention to the message and critically compares the proposed arguments to determine whether the proposed point of view is correct. In HSM this is called *systematic processing*, in ELM it is called *the central route to persuasion* or *high elaboration*. Kahneman argues that people like to think of themselves as rational beings whose entire decision making process is carefully directed by System 2, while in fact System 1 is in control most of the time.

2.1 Gain vs. loss

When the goal is to encourage someone to display a certain behaviour, should your message emphasise the advantages of actually displaying that behaviour (*gain framed*) or should it emphasise the *disadvantages* of *not* displaying the desired behaviour (*loss framed*) (Kahneman & Tversky, 1984)? If communicators want to achieve the goal of people taking measures to prevent burglary, would it be best to emphasise the advantages of those measures or should they pay extra attention to the disadvantages of not taking the proposed measures?

It is important to stress that in general, people tend to be risk-averse when they are confronted with possible gains and that they tend to be risk-seeking when they are confronted with possible losses. The wording that is used to present the different choices has a strong effect in this matter. In an experiment by McNeil et al. (1982) pulmonologists were presented with numbers concerning two different treatment methods for lung cancer – surgery and radiation – in different frames. In the long term, after five years, survival rates are clearly more positive for surgery, but in the short term, surgery has a greater risk. Half of the doctors in the experiment were told that operation survival rate after one month is 90%; the other half were told that there is 10% mortality one month after surgery. Even though these two options are exactly the same, significantly more doctors opted for surgery in the first frame. These

results are similar to the results of the same experiment conducted with students and hospitalised patients. This shows that even though doctors possess advanced medical knowledge, especially compared to laymen like patients and students, this doesn't make them less susceptible for the effects of framing. These results have been found in other *choice framing* experiments as well (Larrick & Soll, 2008; Schelling, 1984; Tversky & Kahneman, 1981).

System 1 is very susceptible to words that trigger emotions, like 'mortality' or, in experiments concerning money, 'loss'. Re-framing information, such as realising that 10% mortality means 90% survival, is a cognitively straining activity. System 2 favours working efficiently (this is called the *least effort principle*) or is lazy, as Kahneman describes it, so if there is no obvious reason to do so System 2 will not perform a straining operation like reframing. Regardless of which system processes the message, this means that even when identical facts are presented in different ways, it is possible to influence people's choices (strikingly called *choice architecture* by Thaler & Sunstein, 2008), solely by presenting choices, possibilities, consequences or results in a certain frame (Kahneman & Tversky, 1984). This effect can occur without sender and recipient of a message being aware, but this knowledge can be used intentionally as well. In 2012, Dutch Rail for example stopped announcing that 'the train is delayed for five minutes'. Instead, it announced that 'the train will arrive in five minutes'. Of course this doesn't make any difference to actual travel time, but it does to travellers' emotions.

Research into the effects of gain framed and loss framed messages has been done in health communications as well. In this area, it seems important to distinguish between messages encouraging preventive behaviour (condom use to prevent spreading of sexually transmitted diseases for example) and messages encouraging detection behaviour (getting tested for sexually transmitted diseases for example) (Salovey, Schneider, Apanovitch, Dillard, & Pfau, 2002). A series of experiments has shown that in messages encouraging preventive behaviour, gain frames are more effective while in messages encouraging detection behaviour, loss frames are more effective (Rothman, Bartels, Wlaschin, & Salovey, 2006; Salovey et al., 2002). A recent meta-analysis (O'Keefe & Jensen, 2006) did not find the same distinction in

persuasiveness between gain and loss frames; only an advantage of gain frames in encouraging prevention behaviour was found (*mean r* = .046) and only for a restricted number of topics. If a difference in persuasiveness exists between gain frames and loss frames in health communications, emphasising the desirable effects of the proposed behaviour is more effective.

O'Keefe and Jensen (2006) point out that the frame is not the only difference between messages in gain and loss frames; (non-)compliance is an issue as well. Gain framed messages focus on performing the proposed behaviour (*action*). Focussing attention towards action enhances persuasion, especially when this is done through a specific description of the proposed behaviour (O'Keefe, 2002a) (more about this under *implicit vs. explicit* in the next paragraph), partly because of the positive effect on perceived self-efficacy. One's belief in being able to successfully perform a certain behaviour proves to be important for actually performing that behaviour. This is called perceived self-efficacy (Bandura, 1977; Fishbein & Ajzen, 1975). This means that increasing the perceived self-efficacy is a way to encourage people to show attitude-consistent behaviour: by emphasising the belief that one can perform the behaviour successfully, possible obstructions for showing attitude-consistent behaviour are eliminated (Bandura, 1977). Loss framed messages focus on *not* performing undesirable behaviour; this is less specific and less persuasive (O'Keefe & Jensen, 2006). O'Keefe and Jensen argue that one shouldn't view framing effects too simplistically: 'Translating psychological generalizations into corresponding principles of communication may be more challenging than commonly supposed' (O'Keefe & Jensen, 2006: 20).

The discussion in this paragraph shows that it is difficult to make a general statement about what a community policing officer should opt for in his or her tweets: gain frames – 'quality locks prevent burglary' – or loss frames, such as 'poor quality locks increase burglary risk'. What has become evident is the power of frames that trigger emotions and that stressing desirable specific behaviour is preferred. Using an experimental design, Van Lent (2015) did not find differences in persuasive effects on safety perceptions of gain versus loss frames. Because of the ambiguous results so far, one goal of the first experiment described in this article is to see if gain framed

and loss framed messages in the tweets published by community policing officers have different effects on recipients' safety perceptions [RQ1].

2.2 Explicit vs. implicit

When the goal is to encourage people to adopt a certain point of view, the question arises whether this point of view should explicitly be mentioned ('You should quit smoking') or left implicit (by summarising the dangers of smoking, for example). The risks of explicitly mentioning the propagated point of view are that the recipients can feel patronised ('I can decide that for myself') and that a point of view that is forced upon an audience will not be as effective as a conclusion people reach themselves (O'Keefe, 2002a). All this considered, meta-analyses show a preference for explicitly mentioning the propagated point of view in the message (O'Keefe, 2002b). This effect is enhanced when the explicit point of view is accompanied by specific information (Leventhal, Jones, & Trembly, 1966; O'Keefe, 2002b), for example a specific piece of advice concerning how to leave your house when you are going on holiday. These findings suggest that the explicitness effect works because the amount of detail in the message increases perceived self-efficacy, which encourages people to take action.

Another possible explanation can be found in the Social Judgment Theory (Sherif & Hovland, 1961). If the point of view is only implicitly presented in the message, people could – wrongly – perceive this point of view as closer to their own than it is in reality (assimilation effect), which means there will be no changes in beliefs or behaviour. Recipients could also perceive the implicitly presented point of view – again, wrongly – as more divergent from their own opinion than it actually is, which leads to rejection of the propagated point of view (O'Keefe, 2002a). This discussion can be summarised as a plea for explicitly mentioned advice in the community policing officers' tweets; for example specifically mentioning that people should leave some lights on when they leave their house. The expectation is that this will have a more positive effect on safety perceptions than implicitly stated advice in the community policing officers' tweets [H1].

The object of the first experiment was to answer RQ1 and test H1. In the first experiment described in this article, a community policing officer's tweets were presented to participants in four conditions. Original community policing officers' tweets were manipulated so that they contained either a gain frame or a loss frame, and contained either an explicit recommendation or an implicit one.

2.3 Distance to the recipient

Bringing a message close to the recipients increases the chance that they will pay attention to a message. A way to do that is to make recipients feel involved, as if the information in the message is about them personally. A way to achieve this is personally addressing the recipient in the message (*'maybe I will meet you during my duty'*). Results of studies into the effects of directly addressing recipients are diverse (cf. Hoeken & Poulssen, 1991; Spooren, Smith & Renkema, 2000), mainly because along with the way in which the recipient was addressed, other features of the text were manipulated as well. That makes it difficult to determine which manipulation is responsible for the effects that have been reported. In Dutch there are two different pronouns to directly address recipients of a message: the formal 'u' and the informal 'jij' (both corresponding with the English pronoun 'you'). Several publications have shown that it depends – among other factors – on the topic of the message and the target audience as to which way of addressing the recipient is most effective. The assumption that 'u' is most suitable for an older target audience and 'jij' is more suitable for a younger audience, turns out to be too simplistic (Hoeken, Hornikx & Hustinx, 2012). These considerations have led to the design of the second experiment described in this article, in which fictional community policing officers' tweets were presented to participants in three conditions: tweets that directly address the recipient using 'u', tweets that directly address the recipient using 'jij' and tweets in which the recipient is not addressed directly (impersonal). The goal is to find out whether the way in which recipients are addressed in the community policing officers' tweets makes a difference to their perceptions of safety [RQ2].

3. Experiment 1: Framing and Explicitness

The first experiment was intended to investigate the effect of framing (loss, gain) and explicitness of tweets on responses from participants in the study. To that end a number of tweets were manipulated systematically and presented to participants in a Twitter feed, along with filler items.

3.1 Method

Materials

A set of 11 experimental tweets was selected based on an inventory of tweets from community policing officers in the south of the Netherlands who were active on Twitter in the period between 2012 and 2014. The tweets had to meet the following criteria: a. they had to contain or to imply a recommendation to the public; b. they had to contain or imply an if-then-relation that describes the negative consequences of unwanted behaviour or positive consequences of desirable behaviour. Care was taken that the tweets chosen in their original form were more or less distributed across the four conditions. This proved to be difficult because there were no tweets that were explicit gain tweets originally: of the 11 experimental tweets three were implicit gain tweets originally, two were implicit loss tweets originally, and six were explicit loss tweets originally.

An example of an experimental tweet (originally an explicit loss frame tweet) is the following:

[English translation] 'Last night a steering wheel was stolen from a car on the #Laanzichtweg #Zevendijk. There were witnesses, no report. [See] something suspicious? Call #112!'

[Original in Dutch] 'Vannacht is aan de #Laanzichtweg #Breda een compleet stuur uit een auto gestolen. Wel getuigen, geen melding. Verdachte situatie? Bel #112!'

The tweet uses a loss frame because it implies that if there is no report from witnesses, no action can be taken. It is an explicit tweet because it explicitly refers to the absence of the report. The recommendation that it expresses is that members of the public should call the emergency number 112 if anyone sees something suspicious.

Four versions of each tweet were made. In order to prevent respondents from activating pre-existing knowledge about the situation, all geographical locations were placed with the fictitious city name of 'Zevendijk'. In two of the versions a gain frame was used, in the two other a loss frame. In two of the versions the recommendation was made explicit, in two others it was left implicit.

Implicit-gain

[Eng] 'Report last night of an attempted theft from a car at #Laanzichtweg #Zevendijk. Caught in the act thanks to witness. #car #theft'

[Du] 'Vannacht melding van poging tot diefstal uit auto aan #Laanzichtweg #Zevendijk. Op heterdaad betrap dankzij getuige. #auto #diefstal'
[133 characters]

Explicit-gain

[Eng] 'Report last night of an attempted theft from a car at #Laanzichtweg #Zevendijk. Caught in the act thanks to witness. [See] something suspicious? Call #112!'

[Du] 'Vannacht melding van poging tot diefstal uit auto aan #Laanzichtweg #Zevendijk. Op heterdaad betrap dankzij getuige. Verdachte situatie? Bel #112!' [147 characters]

Implicit-loss

[Eng] 'Last night a steering wheel was stolen from a car on the #Laanzichtweg #Zevendijk. There were witnesses, no report. #car #theft'

[Du] 'Vannacht is aan de #Laanzichtweg #Zevendijk een compleet stuur uit een auto gestolen. Wel getuigen, geen melding. #auto #diefstal' [129 characters]

Explicit-loss

[Eng] 'Last night a steering wheel was stolen from a car on the #Laanzichtweg #Zevendijk. There were witnesses, no report. [See] something suspicious? Call #112!'

[Du] 'Vannacht is aan de #Laanzichtweg #Zevendijk een compleet stuur uit een auto gestolen. Wel getuigen, geen melding. Verdachte situatie? Bel #112!' [144 characters]

Apart from the experimental items, nine filler items were added to the list. These were tweets that described an action or an evaluation of the community policing officer. For example:

[Eng] 'Last month was the 1 year anniversary of the #mobilepoliceoffice in #Zevendijk! Much more contact with civilians as a result! #subservient'

[Du] 'Afgelopen maand had ik het #mobielepolitiebureau alweer 1 jaar in #Zevendijk in gebruik! Veel meer burgercontact als resultaat! #dienstbaar'

A complete list of the experimental items is provided in the Appendix.

Design and instrumentation

The items were presented to the participants in a between-subjects design with two factors: the formulation of the recommendation (implicit/explicit) and the framing of the recommendation (gain/loss). The experimental items were intermerged with the filler items to construct a Twitter feed of 20 tweets in total. The Twitter feed had the appearance of a real Twitter feed, for which the online tool 'simitator.com' was used. The avatar was that of a community policing officer from the north, to prevent the chance of any participants recognising the real officer. All in all, four lists were created consisting of 20 tweets.

To measure the impact of the different versions a survey was used with questions based on the Safety Monitor, a questionnaire used by the Dutch government for their yearly survey among the population. The dependent variables in the study were the performance of the police in general and in the neighbourhood, the perceived crime level in the neighbourhood, safety perception, feelings of unsafety, perceived risk of burglary, perceived risk of pick-pocketing and perceived risk of assault.

'Police performance in general' was assessed using nine 6-point Likert scale items of the type '*De politie is benaderbaar*' (*the police are approachable*) with answers ranging from 1 'totally disagree' to 6 'totally agree'. As it proved to be a reliable scale ($\alpha = 0.89$), a new variable was constructed, based on the means of the composing items. 'Police performance in the neighbourhood' was assessed using seven 6-point Likert scale items of the type '*De politie reageert op problemen in de buurt*'

(The police respond to problems in the neighbourhood) with answers ranging from 1 'totally disagree' to 6 'totally agree'. As it proved to be a reliable scale ($\alpha = 0.77$), a new variable was constructed, based on the means of the composing items. 'Perceived crime level' in the neighbourhood was assessed using a 6-point semantic opposition item *'In welke mate denk je dat er criminaliteit plaatsvindt in deze buurt?' (What level of crime do you think exists in this neighbourhood?)*, with answers ranging from 1 = very little to 6 = very much. The 'safety perception' was assessed by asking respondents to give a mark between 1 and 10 (the common school grading system in the Netherlands) for the safety in the neighbourhood (1 = very unsafe, 10 = very safe). 'Feelings of unsafety' were assessed by using a 6-point semantic opposition item *'In welke mate zou je je onveilig voelen in deze buurt?' (To what extent would you feel unsafe in this neighbourhood?)*, with answers ranging from 1 = very unsafe to 6 = not at all unsafe. The perceived risk of burglary, pickpocketing and assault were all asked using 6-point semantic opposition items of the type *'De kans op woninginbraak/diefstal van een portemonnee/mishandeling in deze buurt is...' (The risk of burglary/pickpocketing of one's wallet/assault in this neighbourhood is...)*, with answers ranging from 1 = very small to 6 = very large. Apart from these questions demographic questions about age and gender were asked, as well as questions about the degree of activity on Twitter and whether or not the participant followed a community policing officer on Twitter.

Procedure and participants

The questionnaire was presented to the participants using the web survey program 'Qualtrics'. Participants were recruited from classes in the Bachelor of Law programme in a university of applied sciences. Teachers provided oral instruction, and a link to the website where the questionnaire was to be found. Participants were randomly assigned to one of four versions of the questionnaire. In total 90 participants completed the questionnaire (implicit-loss: $n = 17$, implicit-gain: $n = 25$, explicit-loss: $n = 26$, explicit-gain: $n = 22$). Of the participants 77 were female. Gender was equally distributed across the four conditions ($\chi^2(3) = 5.02, p = 0.17$).

3.2 Results

The responses to the questions about the perceived crime level, perceived risk of burglary, pickpocketing and assault were recoded to the effect that high numbers correspond to positive responses. The data were analysed using a multivariate analysis of variance, to examine whether explicitness of the recommendation and framing of the recommendation had any effect on the perceptions of the participants. To this end, the dependent variables in the analysis were police performance in general, police performance in the neighbourhood, perceived crime level in the neighbourhood, safety perception, perceived risk of burglary, perceived risk of pickpocketing, perceived risk of assault and the independent variables were explicitness of the recommendation and framing of the recommendation. The data are summarised in **Table 1**.

The MANOVA revealed a multivariate main effect of framing ($F(8,79) = 2.77$, $p < .01$, $\eta^2 = .22$). There was no main effect of explicitness of the recommendation nor an interaction between explicitness and framing (both F 's < 1). Subsequent

Table 1: Means and standard deviations for police performance in general and in the neighbourhood, perceived crime level in the neighbourhood, safety perception, perceived risk of burglary, perceived risk of pick-pocketing, perceived risk of assault as a function of explicitness and framing of the recommendation.

Explicitness	implicit		explicit	
	loss (n = 17)	gain (n = 25)	loss (n = 26)	gain (n = 22)
Police performance in general	3.71 (0.67)	3.69 (0.82)	3.80 (0.73)	4.00 (0.70)
Police performance in the neighbourhood	3.47 (0.55)	3.79 (0.96)	3.56 (0.91)	4.16 (0.85)
Perceived risk of burglary	2.82 (0.95)	3.28 (1.34)	3.12 (0.95)	3.73 (1.39)
Perceived risk of pick-pocketing	4.06 (0.97)	4.60 (1.16)	4.31 (1.19)	4.55 (1.01)
Perceived risk of assault	4.76 (0.90)	5.12 (1.05)	4.46 (1.30)	5.23 (0.75)
Perceived crime level	4.12 (0.93)	3.76 (1.13)	4.04 (0.92)	3.59 (0.96)
Safety perception	5.53 (1.55)	6.28 (1.31)	5.46 (1.42)	6.27 (1.52)
Feelings of unsafety	3.53 (1.07)	3.68 (1.11)	3.62 (1.17)	4.14 (1.21)

univariate analyses showed main effects of framing on police performance in general ($F(1,86) = 6.47, p < .05, \eta^2 = .07$), perceived risk of burglary ($F(1,86) = 4.46, p < .05, \eta^2 = .05$), perceived risk of assault ($F(1,86) = 6.29, p < .05, \eta^2 = .07$), and safety perception ($F(1,86) = 6.45, p < .05, \eta^2 = .07$). The effect of framing on the perceived crime level in the neighbourhood was marginally significant ($F(1,86) = 3.61, p = .06, \eta^2 = .04$). There was no effect of framing on police performance in the neighbourhood ($F < 1$), on the perceived risk of pickpocketing ($F(1,86) = 2.75, p = .10, \eta^2 = .03$), and on feelings of unsafety ($F(1,86) = 1.89, p = .17, \eta^2 = .02$). In all cases of significance participants reported more positive scores on the basis of the gain frames than on the basis of the loss frames.

3.3 Discussion

As predicted, the experiment showed effects of framing on the responses from the participants: positive frames led to more positive responses than negative responses for a variety of dependent variables. The effect sizes were, for the most part, small. As all tweets mentioned prevention rather than detection, these results conform to the findings in O'Keefe and Jensen's (2006) meta-analysis that suggest that it is mainly the use of gain frames that generate persuasive effects – albeit modest ones. The results differ from that in a study of Van Lent (2015), despite the fact that she used a very similar context (tweets published by community policing officers) and a very similar manipulation (gain frame versus loss frame). Explanations of the difference in results could be found in the composition of the sample. Van Lent's study had a very heterogenic sample, as opposed to the sample in the experiment reported in this article. Moreover, Van Lents' sample contained a disproportionate number of respondents in the loss condition that followed their own community policing officer on Twitter, which could have influenced their responses.

There was no indication that the explicitness of the recommendation had any influence on the persuasive power of the tweets. It may well be that within the context of these frames the kind of recommendation is so predictable that in actual fact the participants in the implicit condition do not perceive the tweets differently than the participants in the explicit condition. Further research is needed to test

this explanation. One possible way to test this is to use think-aloud protocols to check whether recipients of tweets make the inference of the recommendation in the implicit condition.

4. Experiment 2: Style of Addressing

In the second experiment the same basic materials were used to test whether the style of addressing (formal vs. informal) influences the persuasive power of the tweets.

4.1 Method

Materials

The same nine items that were used in experiment 1 comprised the materials in experiment 2. Of each item three versions were presented: an impersonal tweet, a tweet in which the respondent is addressed in an informal way (using 'je/jou/jouw', 'you' [informal, nominative], 'you' [informal, oblique], 'your' [informal, genitive]) and a tweet in which the reader is addressed in a formal way (using 'u/uw', 'you' [formal nominative and oblique], 'your' [formal, genitive]). An example is given below:

Impersonal

[Eng] 'Report last night of an attempted theft from a car at #Laanzichtweg #Zevendijk. Caught in the act thanks to witness. #112 is available for suspicious situations!'

[Du] 'Vannacht melding van poging tot diefstal uit auto aan #Laanzichtweg #Zevendijk. Op heterdaad betrapt dankzij getuige. #112 is er voor verdachte situaties!' [154 characters]

Informal address

[Eng] 'Report last night of an attempted theft from a car at #Laanzichtweg #Zevendijk. Caught in the act thanks to witness. Did you [informal] see a suspicious situation? Call #112!'

[Du] 'Vannacht melding van poging tot diefstal uit auto aan #Laanzichtweg #Zevendijk. Op heterdaad betrapt dankzij getuige. Zie je een verdachte situatie? Bel #112!' [159 characters]

Formal address

[Eng] 'Report last night of an attempted theft from a car at #Laanzichtweg #Zevendijk. Caught in the act thanks to witness. Did you [formal] see a suspicious situation? Call #112!'

[Du] 'Vannacht melding van poging tot diefstal uit auto aan #Laanzichtweg #Zevendijk. Op heterdaad betrapt dankzij getuige. Ziet u een verdachte situatie? Bel #112!' [159 characters]

The 11 experimental items were complemented with the same nine filler items that were used in experiment 1. A complete list of the experimental items can be found in the Appendix.

Instrumentation and procedure

The same questionnaire was used as in experiment 1. Participants were again recruited from classes in the Bachelor of Law programme in a university of applied sciences. Teachers gave oral instruction, and a pointer to the website where the questionnaire was to be found. Participants were randomly assigned to one of four versions of the questionnaire. In total 72 participants completed the questionnaire (impersonal: $n = 21$; informal address: $n = 26$; formal address: $n = 25$). Of the participants 42 were female. Gender was equally distributed across the three conditions ($\chi^2(2) = 2.93$, $p = 0.23$).

4.2 Results

The responses to the questions about perceived crime level, perceived risk of burglary, pickpocketing and assault were recoded to the effect that high numbers correspond to positive responses. The data were analysed using a multivariate analysis of variance with police performance in general and in the neighbourhood, perceived crime level in the neighbourhood, safety perception, perceived risk of burglary, perceived risk of pickpocketing, perceived risk of assault as the dependent variables and form of address as the independent variable. The data are summarised in **Table 2**.

There was no multivariate effect of condition ($F(16,126) = 1.03$, $p = 0.43$). Analysing the univariate effects only showed a trend for the effect of condition on police performance in the neighbourhood ($F(2,69) = 2.50$, $p = 0.06$). Contrasts showed that the impersonal condition led to lower estimates of police performance

Table 2: Means and standard deviations for police performance in general and in the neighbourhood, perceived crime level in the neighbourhood, safety perception, perceived risk of burglary, perceived risk of pick-pocketing, perceived risk of assault as a function of explicitness and framing of the recommendation.

Form of address	impersonal	informal	formal
	(n = 21)	(n = 26)	(n = 25)
Police performance in general	4.24 (0.63)	4.20 (0.94)	4.29 (0.79)
Police performance in the neighbourhood	4.16 (0.79)	4.34 (0.72)	4.62 (0.62)
Perceived risk of burglary	3.19 (0.81)	3.31 (1.01)	3.44 (1.26)
Perceived risk of pick-pocketing	4.52 (1.29)	4.58 (0.91)	4.88 (0.83)
Perceived risk of assault	5.19 (1.08)	4.85 (1.32)	5.40 (0.71)
Perceived crime level	3.52 (0.93)	3.27 (1.08)	3.32 (0.63)
Safety perception	6.33 (1.16)	6.58 (1.17)	6.68 (1.03)
Feelings of unsafety	4.00 (1.14)	3.69 (0.93)	3.96 (1.01)

in the neighbourhood than the formal address condition (impersonal: 4.16; formal: 4.62; $p < 0.05$); the other contrasts were not significant. All other univariate effects had F 's < 1 , except for perceived risk of assault ($F(2,69) = 1.75$, $p = 0.18$).

4.3 Discussion

The style of addressing proved to have only a minor impact on the interpretation of the tweets: a formal type of address led to higher estimates of police performance than an impersonal address. None of the other comparisons revealed significant differences. This resonates with the variety in findings reported by Hoeken et al. (2012), for example, with some studies reporting positive effects of direct address, others reporting negative effects, and some reporting no effect. Evidently, this style variation is less important for the community police officer than the choice of frame.

5. General discussion and conclusion

The results in the reported experiments show that gain framed community policing officers' tweets yield significantly more positive responses concerning opinion about police performance, perceived risk of burglary or assault, and safety perception. The results also show that gain frames in community policing officers' tweets lead to

more positive responses concerning perceived crime level in the neighbourhood, although the significance here is marginal (RQ1). Since the tweets in the experiment focus on prevention (representative for real community policing officers' tweets), these results are similar to the results that have been found in O'Keefe and Jensen's (2006) meta-analysis.

The way in which the recommendation is formulated in the tweets – explicitly or implicitly – doesn't make a difference in any of the queried variables (H1). An explanation for this lack of effect (which contrasts expectations) could be that the advice in the implicit condition is so obvious and predictable that participants do not actually perceive this as implicit. Further research would be needed to test this explanation.

Effects upon the way in which recipients are addressed in the tweets are minimal: the results only show a small difference between impersonal and formal address. Participants in the formal address condition are more positive about police performance than respondents in the impersonal address condition (RQ2). This matches the variety in findings in research of this topic so far. From the experiments reported in this article it becomes clear that the framing of the message is the most important of the three aspects studied to consider for the community policing officer when composing a tweet.

The effects that are studied in the experiments described in this article are typically *System 1*-effects: framing, implicit versus explicit recommendations and style of address are aspects that we would expect to be processed mainly subconsciously. The experimental setting in this study might have created triggers for *System 2*-processing: participants explicitly paid attention to the material because they were asked to participate in the experiment. This might explain the substantial framing effect, but since results differ in this area – Van Lent (2015) didn't find any framing effects in her quite similar study – further research would be needed to test this. However, the findings in this study illustrate the power of framing manipulations and the importance of careful consideration when formulating tweets. Since community policing officers aren't trained communication professionals, as has been

discussed before, it might be beneficial for them to receive training or guidance in managing the formulation aspects when they start using Twitter professionally.

All in all, it is quite clear that formulation aspects – specifically framing – are worth taking into account in safety communications. Furthermore, the results of the reported experiments have shown the benefit of this type of research in studying effects in the relatively new domain of social media.

Additional Files

The additional files for this article can be found at the following DOIs:

- **Appendix 1.** Items in experiment 1. DOI: <https://doi.org/10.16995/olh.198.s1>
- **Appendix 2.** Items in experiment 2. DOI: <https://doi.org/10.16995/olh.198.s2>

Competing Interests

The authors have no competing interests to declare.

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