



## Reports

## Be aware to care: Public self-awareness leads to a reversal of the bystander effect

Marco van Bommel<sup>a,b,d,\*</sup>, Jan-Willem van Prooijen<sup>a,b</sup>, Henk Elffers<sup>b,c</sup>, Paul A.M. Van Lange<sup>a</sup><sup>a</sup> Department of Social and Organizational Psychology, VU University Amsterdam, Van der Boechorststraat 1, 1081 BT, Amsterdam, The Netherlands<sup>b</sup> Netherlands Institute for the Study of Crime and Law Enforcement, De Boelelaan 1077a, 1081 HV, Amsterdam, The Netherlands<sup>c</sup> Department of Criminal Law and Criminology, VU University Amsterdam, De Boelelaan 1077, 1081 HV, Amsterdam, The Netherlands<sup>d</sup> Phoolan Devi Institute, De Boelelaan 1105, 1081 HV, Amsterdam, The Netherlands

## ARTICLE INFO

## Article history:

Received 13 September 2011

Revised 13 February 2012

Available online 22 February 2012

## Keywords:

Bystander effect

Helping

Self-awareness

Accountability

Camera

## ABSTRACT

The classic bystander effect stipulates that people help others more when they are alone than when other bystanders are present. We reason that, sometimes, the presence of bystanders can *increase* helping, notably in situations where public self-awareness is increased through the use of accountability cues (e.g., a camera). We conducted two experiments in which we tested this line of reasoning. In both experiments, participants read messages soliciting support in an online forum. We varied the number of people that were present in that forum to create a bystander and an alone condition. In Study 1, we introduced an accountability cue by making participants' screen-names more salient, and in Study 2, we used a webcam. Both studies indicate that, as expected, the bystander effect can be reversed by means of cues that raise public self-awareness in social settings.

© 2012 Elsevier Inc. All rights reserved.

## Introduction

People help others more when they are alone than when there are bystanders present. This so-called bystander effect has become well-established in a longstanding tradition of research since the classic work of Darley and Latané (1968), and it became widely known through anecdotal evidence. There are many examples of news-items about victims of crimes or accidents not getting the help they needed, even though there were many bystanders able to provide it. However, the bystander effect may also be prevalent in other aspects of our everyday lives. For instance, if someone drops a coin or a pencil, people are less likely to help that person picking it up when there are many bystanders present (Latané & Dabbs, 1975). Simply put, whether one is the victim of a crime, or just wants help on statistics, any help request is vulnerable to the bystander effect.

A recent meta-analysis (Fischer et al., 2011) comparing over forty years of studies on the bystander effect clearly shows that the negative influence of groups on helping behavior is very strong in many different situations. But more importantly, it suggested that in rare cases the bystander effect can be reversed. Indeed, previous research on intergroup dynamics gives some support to this idea, by showing that when group identity becomes salient, sometimes, group size can promote rather than undermine helping (Levine & Crowther, 2008). Such findings suggest that researchers may have focused too much on the negative aspects of the presence of others on helping,

and the potential benefit of bystanders has been neglected. More importantly, it suggests that research is needed to explore potential non-inhibiting or even positive effects of bystanders under specific conditions.

In the present study, we seek to demonstrate such a condition in which increments in group size may actually lead to *increased* helping. The underlying reasoning for this reversed bystander effect is that the presence of bystanders can stimulate helping when people observe cues in their social environment that invigorate public self-awareness and thus reputation concerns (e.g., a camera).

Various factors are assumed to underlie the bystander effect, such as diffusion of responsibility (i.e., people feel less personal responsibility to help, because they ascribe a substantial part of the responsibility to other bystanders; Garcia, Weaver, Moskowitz, & Darley, 2002; Weesie, 1993), as well as costs outweighing the benefits of intervention (Dovidio, Piliavin, Gaertner, Schroeder, & Clark, 1991). The *arousal cost-reward model* postulates that the emotional cost of non-intervention is usually lowered by the company of other bystanders, for instance, due to the diminished feeling of personal responsibility. In the current contribution, we propose that such a cost-benefit perspective may sometimes imply a reversal of the bystander effect. Particularly, we will reason that reputation concerns may change the balance between the costs and benefits of helping. In the following, we will present our line of reasoning in more detail.

## Public self-awareness and the bystander effect

One potential benefit of helping that is overlooked in theorizing on the bystander effect is the desire to obtain a good reputation. For instance, helping is likely to increase one's status, which in the long

\* Corresponding author at: Department of Social and Organizational Psychology, VU University Amsterdam, Van der Boechorststraat 1, 1081 BT, Amsterdam, The Netherlands. Fax: + 31 20 59 88702.

E-mail address: [M.van.Bommel@psy.vu.nl](mailto:M.van.Bommel@psy.vu.nl) (M. van Bommel).

run helps to get access to resources (Hardy & Van Vugt, 2006; Johnson, Erez, Kiker, & Motowidlo, 2002). Indeed, helping is often used as an impression management tool in intergroup situations (e.g., Hopkins et al., 2007). In a similar vein, it stands to reason that helping is more effective in displaying one's virtuous character when there are many bystanders present, rather than when there are only few people to impress. Therefore, the presence of bystanders provides ample opportunity to promote one's reputation through helping. Here, we propose that these impression management concerns can be reconciled with the bystander effect by taking public self-awareness into account. Public self-awareness is a state which occurs when people focus on the impressions they make on others (Prentice-dunn & Rogers, 1982). For instance, when a person is in a state of public self-awareness, they worry about what others think of them, and they seek social approval (Solomon & Schopler, 1982). They are in a state of awareness that others can observe and thus evaluate and judge them, based on their behavior and appearance.

Although every bystander is a potential judge of behavior, the presence of others does not automatically create public self-awareness (Froming, Walker, & Lopyan, 1982). In many cases, quite the opposite occurs. In a big group, people are less easy to identify and feel anonymous, because they can hide in the crowd (Prentice-dunn & Rogers, 1982). Consequently, it becomes less likely for the individual to be judged and evaluated on an individual level. Indeed, the presence of others can be associated with a decline in feelings of accountability (Diener, Lusk, Defour, & Flax, 1980), which may keep people from performing a costly intervention. This decline in public self-awareness, caused by the presence of others, can be countered by introducing discriminative cues that signal that the behavior of an individual can be detected and evaluated (Prentice-dunn & Rogers, 1982). Such an "accountability cue" is generally an aspect of the social context that eliminates feelings of anonymity, like the presence of a camera or wearing a nametag. These cues trigger people to become aware that their actions can be ascribed to them on an individual level.

Recent research provides preliminary support for our notion about the role of public-self awareness in the bystander effect. In a series of studies, Garcia, Weaver, Darley, and Spence (2009) showed that *socially anxious* people helped more in the presence of a group. This may be rooted in the tendency of socially anxious people to automatically focus attention on their own performance within a social setting (Karakashian, Walter, Christopher, & Lucas, 2006). They are continually evaluating their performance and are preoccupied with the impressions they make on others. Consequently, it might be possible that socially anxious people are in a constant state of high public self-awareness, which causes them to be more concerned about making a good impression by helping. Based on this finding alone, however, these ideas remain somewhat speculative, given that these authors did not directly manipulate cues that are known to elevate public self-awareness in social settings. The present research is designed to directly test our hypothesis that the presence of other bystanders stimulates helping behavior, when accountability cues raise people's public self-awareness.

### The present research

In the present research, we test the idea that high public self-awareness, as instigated by accountability cues, reverses the bystander effect. We test this using an internet forum. Internet forums and social networking sites are not only used for small talk, but also for social support about serious issues (Voelpel, Eckhoff, & Forster, 2008). Online forums, for instance, can be utilized to help people in severe emotional distress. There are even documented cases of successful interventions involving people who were on the verge of committing suicide (e.g., Barak & Gluck-Ofri, 2007). Successful as these support-websites may be, they inherently have the potential to suffer from the bystander effect.

These support forums may be useful settings for studying the bystander effect, because they elicit real-life helping behaviors while allowing for the absolute control of the laboratory. We therefore created a (bogus) support forum for people in severe emotional distress, and asked participants in the lab to read messages posted by purported forum members. In line with the bystander effect, we expected that an increased number of visitors on the forum would decrease the amount of support given. Concurrent with our line of reasoning that public self-awareness and impression management cause prosocial behavior, we expected that when we introduce accountability cues, such as making the presence of a person more visible on the forum, the bystander effect will be reversed. More specifically, we expected that the amount of given support will increase as a function of the number of visitors on the forum.

### Study 1

The main purpose of Study 1 was to investigate if people would help others more in the presence of bystanders than alone when introducing an accountability cue. We operationalized this accountability cue by displaying the name of the participant in red while all other information was displayed in black. The color red is often posited as an important signaling color in social relations, utilized to attract attention (Elliot & Maier, 2007). Therefore, we expected that such salience of one's own name would increase helping in the presence of other bystanders.

### Method

#### Participants and design

A total of 86 students (61 females, 25 males; mean age = 20.93,  $SD = 2.41$ ) participated for the standard fee of €2.50 (roughly \$3.50 in U.S. currency). One participant was excluded from analysis for not following instructions. Participants were randomly assigned to one of the four conditions of our 2 (Bystanders: Absent vs. Present) by 2 (Presence on the forum: Salient vs. Non-Salient) between-participants design.

#### Procedure and materials

Participants were invited to join a study about online communication. They were seated in separate cubicles that each contained computer equipment, which was used to present the stimulus materials and register the data. Before the experiment started, the experimenter asked participants for their names and email address so we could supposedly make a personalized login for an internet forum.

The experiment was ostensibly about different modes of communication via the internet. The first mode of communication was an online forum, which was presented as a real forum on the internet. Depending on condition, participants read that the forum was visited by many, versus just a few people. Participants were told that the computer would automatically select a new message that had not (yet) received any response. Furthermore, we explicitly stated that they did not have to respond to messages, but were free to do so. If they chose not to respond, they could click on a button labeled "next message".

The forum-messages were presented by a program that resembled a commonly used browser (Internet Explorer 8). Participants saw their own name and the names of the other people that were online in the left upper half of the screen. In the non-salient condition, their name had the same color as the other visitors. However, to induce a feeling that one's presence was very visible, and thus to raise public self-awareness, we presented the participant's name in the salient condition by a different color (red for participants; black – the same color as the others – for bystanders). Furthermore, we presented the exact number of people who were online (one in the bystander Absent vs. 30 in the bystander Present condition), in the right upper half of the screen. On the bottom half, there was a textbox where participants could type their response. They could reach this

by scrolling down, or press a button labeled “Respond” in the top right half of the screen.

In random order, we presented five different messages, averaging 1262 characters ( $SD=22.52$ ). The messages were personal stories from people in distress. The first message was about a person who wanted to commit suicide. The second was from a person who just found out the cancer of her partner had returned. The third message was about someone with anorexia. The fourth was about a “quarter life crisis”, and the fifth was from someone who just had a very bad breakup. *Helping behavior* was then measured by summing the number of responses participants typed.

As a manipulation check, we asked participants to rate two statements about how much they felt they stood out on the forum, on a seven point Likert-scale (1 = completely disagree, 7 = completely agree): “My presence on the forum was very noticeable” and “My presence in the group was very prominent”. The two items were averaged into a scale with acceptable reliability,  $\alpha = .62$ .

## Results and discussion

### Manipulation check

We expected that when the participants' names were displayed in a different color than the other members on a forum, participants would feel like they were standing out in the crowd. As expected, a 2 (Salient vs. Non-Salient)  $\times$  2 (Bystanders Absent vs. Bystanders Present) ANOVA yielded a main effect for name salience. Participants in the salient name condition felt that their presence was more noticeable ( $M=3.98$ ,  $SD=1.13$ ) than participants in the non-salient name condition ( $M=3.46$ ,  $SD=1.27$ ),  $F(1, 81)=3.94$ ,  $p=.05$ ,  $\omega^2=.033$ . These findings reveal that participants felt more publicly self-aware in the salient name condition than in the non-salient name condition, as intended by our manipulation.

### Helping

A 2 (Salient vs. Non-Salient)  $\times$  2 (Bystanders Absent vs. Bystanders Present) ANOVA on the number of responses yielded a significant interaction for saliency and bystander presence,  $F(1, 81)=10.27$ ,  $p<.01$ ,  $\omega^2=.098$ . This interaction is displayed graphically in Fig. 1. We then examined the simple effects of bystander presence within both the non-salient and salient condition. As expected, the analysis revealed that in the non-salient condition, the classic bystander effect is found. Participants in the bystander absent condition helped significantly more ( $M=2.95$ ,  $SD=1.58$ ), than participants in the bystander present condition ( $M=1.86$ ,  $SD=1.69$ ),  $F(1, 81)=4.69$ ,  $p=.03$ ,  $\omega^2=.042$ . But when the names of participants were made salient, the bystander effect was reversed: Participants in the bystander absent condition wrote fewer messages ( $M=1.67$ ,  $SD=1.56$ ) than in the bystander present condition ( $M=2.90$ ,  $SD=1.83$ ),  $F(1, 81)=5.61$ ,  $p=.02$ ,  $\omega^2=.051$ .

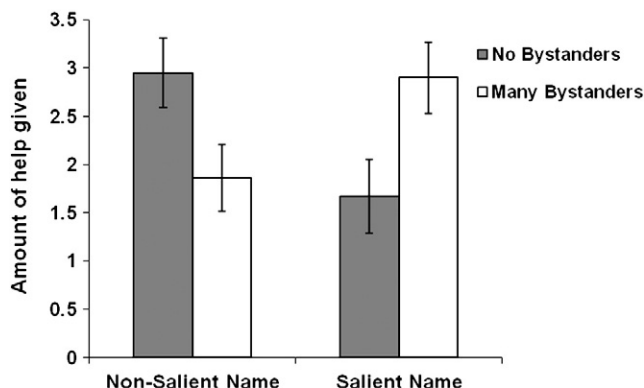


Fig. 1. Number of help messages sent as a function of name saliency and number of bystanders, in Study 1.

These findings reveal that making one's name salient, by giving it a different color than the other names, was sufficient to make one help more (instead of less) in the presence of bystanders. In support of our hypotheses, the bystander effect remained when participants were “just another face in the crowd”, but when they felt like they stood out, the presence of other bystanders encouraged helping. Of lesser relevance, as indicated by the difference in helping in the no bystanders conditions, the results also suggest that people high in public self-awareness are inherently focusing inwards. Although they are concerned about what other bystanders think of them, they are the focal point of their own attention (see, Silvia & Duval, 2001). This inward focus may have caused people to focus less on the needs of the needy person, which resulted in less help given when there was no one to judge the potential helper.

## Study 2

The purpose Study 2 was to induce an accountability cue that is more commonly associated with public self-awareness. Moreover, we wanted a manipulation of public self-awareness that was induced independently from the internet forum, because we wanted the presence of participants on the forum to be indistinguishable from the other bystanders on the forum. By separating the public self-awareness manipulation from the forum, we could focus solely on the subjective *feeling* of public self-awareness, without objectively standing out in the crowd. Additionally, this prevents participants from feeling like they are part of an out-group on the forum, which makes it less likely that our results can be explained by intergroup dynamics. Therefore, we decided to use a webcam to induce public self-awareness in the second study. The presence of a camera is an established and well validated manipulation of public self-awareness, used in many different experimental settings (e.g., Davies, 2005; Yao & Flanagan, 2006).

### Method

#### Participants and design

A total of 111 participants (80 females, 31 males;  $Mage = 19.99$ ,  $SD=1.97$ ) were recruited from the VU University campus. They were randomly assigned to one of the four conditions of our 2 (Bystanders: Absent vs. Present) by 2 (Webcam: Absent vs. Present) between-participants design.

#### Procedure and materials

The procedure and materials were identical to Study 1, with a few exceptions. In the camera present condition, a webcam was mounted on each computer monitor. To make this more salient, we asked participants once, before they started with the experiment, to check whether the camera was on by looking at a LED-indicator underneath the webcam. This was the only reminder of the presence of the webcam: Participants could not see the webcam feed. In order make the conditions resemble each other as close as possible, we asked participants in the camera absent condition to check if the LED-indicator for Num-Lock was on. Participants were told that these checks were vital for the later stages of the experiment, but not for the forum they would visit. We did this to prevent the possibility of creating a second type of bystander, namely a person watching the webcam feed, whereas our camera manipulation should be purely seen as an accountability cue.

To check if the presence of a camera influenced public self-awareness, seven items that tapped into the feeling of being susceptible to public scrutiny were pooled together into one reliable scale (e.g., “I felt like my actions had consequences for my reputation”, and “I felt like I could be evaluated”),  $\alpha = .76$ .

## Results and discussion

### Manipulation check

We expected that the presence of a camera would induce public self-awareness, especially when there are many bystanders. As expected, a 2 (Camera vs. No-Camera)  $\times$  2 (Bystanders Absent vs. Bystanders Present) ANOVA yielded a significant main effect for camera presence,  $F(1, 107) = 18.35, p < .001, \omega^2 = .135$ . In the camera condition, people felt more public self-aware ( $M = 4.89, SD = 1.13$ ) than people in the absent camera condition ( $M = 4.04, SD = .99$ ). This finding suggests that our manipulation was successful in varying different levels of public self-awareness.

### Helping

Our first expectation was that without the presence of a camera, the classic bystander effect would occur. However, we expected that participants would try to manage their reputation and display more positive behavior – like helping – when in the presence of bystanders whilst being public self-aware. Thus we expected that in the camera condition, the bystander effect would be reversed. Indeed, a 2 (Camera vs. No-Camera)  $\times$  2 (Bystanders Absent vs. Bystanders Present) ANOVA on the number of helping responses yielded only a significant interaction for camera presence and bystander presence,  $F(1, 107) = 8.53, p < .01, \omega^2 = .064$ . This interaction is displayed graphically in Fig. 2.

We then examined the effect of bystander presence with and without a camera. Analysis showed the bystander effect when the camera was not present: In the no bystander condition, participants displayed significantly more helping behavior ( $M = 2.50, SD = 1.75$ ), than in the bystander present condition ( $M = 1.59, SD = 1.42$ ),  $F(1, 107) = 4.00, p = .05, \omega^2 = .026$ . However, when a camera was present, the bystander effect was reversed: In the bystander absent condition, participants displayed less helping behavior ( $M = 1.97, SD = 1.55$ ) than in the bystander present condition ( $M = 2.89, SD = 1.89$ ),  $F(1, 107) = 4.53, p = .04, \omega^2 = .031$ .

These findings again reveal the importance of public self-awareness in the bystander effect. People help less when there are bystanders present, but when they become public self-aware (by our camera manipulation), the presence of other bystanders leads them to increase helping behavior. Our results uncover that the mere feeling of public self-awareness is enough to increase helping in public settings, even when participants were objectively just as visible on the forum, as any other forum member. This indicates that the feeling of public self-awareness, as created by the presence of a camera, was sufficient for participants to change their behavior in accord with a pattern that signifies reputation concerns. We therefore reason that the increase of help as a function of group size in the public self-awareness condition was motivated by evaluation apprehension concerns.

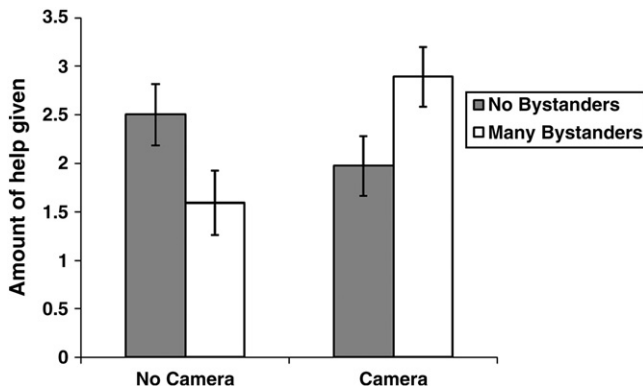


Fig. 2. Number of help messages sent as a function of camera presence and number of bystanders, in Study 2.

## General discussion

In the longstanding tradition of research on the bystander effect, this research is among the first to repeatedly demonstrate a reversal of the bystander effect. Results from both studies indicate that, as expected, the bystander effect can be reversed by means of cues that raise public self-awareness in social settings. This finding is of great relevance to our understanding of helping behavior in public settings. Below we outline some of the theoretical and practical implications, along with strengths and limitations of this study.

Our findings support the arousal cost–reward model (Dovidio et al., 1991): The decision of helping a person in need is based on the relative weight of costs versus benefits. As we reasoned, when there are many bystanders, the possible benefits of helping for reputational concerns may be much larger than when there are only a few. However, a cue may sometimes be necessary for people to become aware of the possible reputational benefits of their behaviors.

We suggest that the psychological processes triggered by reputational concerns in the present studies are likely to be different from the effects of increasing personal responsibility directly (e.g., Moriarty, 1975), or behaviors following an “altruistic” norm (which are more related to private self-awareness, see Prentice-dunn & Rogers, 1982). If accountability cues accentuated such an “altruistic” norm, or if they raised feelings of responsibility towards the needy, there should have been an increase in helping behavior in the alone, public self-aware condition. Given that we only find increased helping in the presence of an audience, the data indicate a mechanism not based on accepting responsibility or altruism for the person in need, but one based on salience of the possibility that one is held accountable for one’s behavior, by other bystanders. Therefore, our findings are most consistent with a model that stipulates that people who are aware of the reputational costs and rewards of their behavior become motivated by concerns of what others may think.

To our knowledge, this is one of the first papers to find the presence of a group to promote helping behavior by influencing motives on an individual level. We propose that changing motivation on an individual level may prove more useful in creating practical strategies and for policy making, because in public spaces – in which the bystander effect is often a problem – people are unlikely to share a salient common group identity. Nevertheless, future research could focus on how public self-awareness changes the bystander effect in inter-group settings. For instance, it would be interesting to see what would happen if people witness a distressing situation in which the bystanders are members of a salient out-group. In our forum-paradigm, participants likely thought that the visitors who frequent the forum would see helping as something positive (otherwise they would not visit that forum). But what would happen if people have the idea that the bystanders are members of a group who views helping in such a situation as negative? For instance, if a person in need would seek help among an audience with a strong norm towards to self-reliance, aiding this person may be perceived as something very negative. Our research has made it clear that people will behave more in accord with what they think would give them reputational benefits, but if they are aware that the specific audience views helping as negative, introducing the accountability cue may elicit less helping (see also, Froming et al., 1982). This could help our understanding of impression management and intergroup cooperation immensely.

We acknowledge some limitations within the current contribution. First, although the data are consistent with our theoretical model, the current investigation does not provide unequivocal evidence that reputation concerns are the driving force behind the effects we found in our studies. In order to rule out possible alternative underlying mechanisms, future research is needed to directly test if reputation concerns indeed mediate the effect of public self-awareness cues on helping behavior in group settings. Second,



the results of the current contribution indicate that manipulating public self-awareness leads to changes in helping behavior. However, it is not completely clear if the manipulations only influenced helping behavior, or rather participatory behaviors in general. Unfortunately, our design does not allow us to make a sharp distinction between these constructs, because the most likely response to the messages was to provide social support. Future research could include additional forum messages in which there is no explicit or implied cry for help, as one frequently finds on social networking sites such as Facebook (e.g., a message about how lovely the weather is). By controlling for participant's responses to these non-help seeking messages, it becomes possible to ensure that the effects are specific to helping behavior.

An interesting theoretical question centers on the ecological validity of the present findings. On the one hand, one could argue that the complete visual anonymity and safety of a virtual environment differs in important ways from real-world bystander situations. For instance, there is no threat of physical harm by intervening online, thus the potential costs of online-intervention are severely reduced. At the same time, in our modern era, real-life and online interaction have become very much entwined. A substantial part of our everyday social interactions, including helping, now takes place online. Not only has online chatting and usage of online social network websites have become a very popular pastime (Ellison, Steinfield, & Lampe, 2007), we also use the internet for more serious matters. For instance, companies use virtual forums for information and data sharing (e.g., Voelpel et al., 2008), health-care providers use electronic means to communicate with their patients (see, Busey & Michael, 2008), and online support groups for people with various problems have become mainstream (Bartlett, 2011). As such, the online world has increasingly become a real part of our everyday lives, which suggests a stronger need to study behavior – including helping and prosocial behavior – within this specific social setting.

Group size is often discussed as a variable that undermines helping and cooperation. Yet the present studies demonstrate the presence of others can have exceptionally fruitful effects. The notion of public self-awareness, in particular, seems essential. While certain forms of self-awareness may not always be welcomed by people, the present findings do underscore their power to promote helping one another. Measures that might activate such awareness in society – such as security cameras, enhancing visibility of members in a virtual community through personal information such as photos, or adding cameras in less secure areas – should thus be weighed against the cost to privacy. This could be a structural measure to counter the problems of non-intervention, with the benefit that it does not require the actors involved to have preceding knowledge of the bystander effect. Certainly, future research should focus on whether a camera not pointed at a single person, but at the group as a whole, can still induce public self-awareness in individuals.

More generally, the good news is that we have identified a variable that helps us understand when “others” facilitate the bystander effect or inhibit the bystander effect. The major challenge, from both a theoretical and societal perspective, is to use the social environment, or reminders of it, to promote helping, intervening in crisis, and related forms of behavior from which we all benefit. For that, people need to “be aware to care.”

## Acknowledgments

We would like to thank Joshua M. Tybur for providing comments on an earlier version of the manuscript.

## References

- Barak, A., & Gluck-Ofri, O. (2007). Degree and reciprocity of self-disclosure in online forums. *Cyberpsychology & Behavior, 10*(3), 407–417.
- Bartlett, Y. K. (2011). An investigation into the empowerment effects of using online support groups and how this affects health professional/patient communication. *Patient Education and Counseling, 83*(1), 113–119.
- Busey, J. C., & Michael, P. (2008). Telehealth opportunities and pitfalls. *Journal of the American Dietetic Association, 108*(8), 1296–1301.
- Darley, J. M., & Latané, B. (1968). Bystander intervention in emergencies: Diffusion of responsibility. *Journal of Personality and Social Psychology, 8*, 377–383.
- Davies, M. F. (2005). Mirror and camera self-focusing effects on complexity of private and public aspects of identity. *Perceptual and Motor Skills, 100*(3), 895–898.
- Diener, E., Lusk, R., Defour, D., & Flax, R. (1980). Deindividuation – Effects of group-size, density, number of observers, and group member similarity on self-consciousness and disinhibited behavior. *Journal of Personality and Social Psychology, 39*(3), 449–459.
- Dovidio, J. F., Piliavin, J. A., Gaertner, S. L., Schroeder, D. A., & Clark, R. D. (1991). The arousal: Cost–reward model and the process of intervention: A review of the evidence. In R. D. Clark (Ed.), *Review of personality and social psychology. Prosocial behavior, 12*. (pp. 86–118) Newbury Park, CA: Sage.
- Elliot, A. J., & Maier, M. A. (2007). Color and psychological functioning. *Current Directions in Psychological Science, 16*(5), 250–254.
- Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook “friends”: Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication, 12*, 1143–1168.
- Fischer, P., Krueger, J., Greitemeyer, T., Kastenmüller, A., Vogrinic, C., Frey, D., et al. (2011). The bystander-effect: A meta-analytic review on bystander intervention in dangerous and non-dangerous emergencies. *Psychological Bulletin, 137*, 517–537.
- Froming, W. J., Walker, G. R., & Lopyan, K. J. (1982). Public and private self-awareness – When personal attitudes conflict with societal expectations. *Journal of Experimental Social Psychology, 18*(5), 476–487.
- Garcia, S. M., Weaver, K., Darley, J. M., & Spence, B. T. (2009). Dual effects of implicit bystanders: Inhibiting vs. facilitating helping behavior. *Journal of Consumer Psychology, 19*(2), 215–224.
- Garcia, S. M., Weaver, K., Moskowitz, G. B., & Darley, J. M. (2002). Crowded minds: The implicit bystander effect. *Journal of Personality and Social Psychology, 83*(4), 843–853.
- Hardy, C. L., & Van Vugt, M. (2006). Nice guys finish first: The competitive altruism hypothesis. *Personality and Social Psychology Bulletin, 32*(10), 1402–1413.
- Hopkins, N., Reicher, S., Harrison, K., Cassidy, C., Bull, R., & Levine, M. (2007). Helping to improve the group stereotype: On the strategic dimension of prosocial behavior. *Personality and Social Psychology Bulletin, 33*(6), 776–788.
- Johnson, D. E., Erez, A., Kiker, D. S., & Motowidlo, S. J. (2002). Liking and attributions of motives as mediators of the relationships between individuals' reputations, helpful behaviors and raters' reward decisions. *Journal of Applied Psychology, 87*(4), 808–815.
- Karakashian, L. M., Walter, M. I., Christopher, A. N., & Lucas, T. (2006). Fear of negative evaluation affects helping behavior: The bystander effect revisited. *North American Journal of Psychology, 8*, 13–32.
- Latané, B., & Darley, J. M. (1975). Sex, group size and helping in 3 cities. *Sociometry, 38*(2), 180–194.
- Levine, M., & Crowther, S. (2008). The responsive bystander: How social group membership and group size can encourage as well as inhibit bystander intervention. *Journal of Personality and Social Psychology, 95*(6), 1429–1439.
- Moriarty, T. (1975). Crime, commitment and the responsive bystander: Two field experiments. *Journal of Personality and Social Psychology, 31*, 370–376.
- Prentice-dunn, S., & Rogers, R. W. (1982). Effects of public and private self-awareness on deindividuation and aggression. *Journal of Personality and Social Psychology, 43*(3), 503–513.
- Silvia, P. J., & Duval, T. S. (2001). Objective self-awareness theory: Recent progress and enduring problems. *Personality and Social Psychology Review, 5*(3), 230–241.
- Solomon, M. R., & Schopler, J. (1982). Self-consciousness and clothing. *Personality and Social Psychology Bulletin, 8*(3), 508–514.
- Voelpel, S. C., Eckhoff, R. A., & Forster, J. (2008). David against Goliath? Group size and bystander effects in virtual knowledge sharing. *Human Relations, 61*(2), 271–295.
- Weesie, J. (1993). Asymmetry and timing in the volunteers dilemma. *Journal of Conflict Resolution, 37*(3), 569–590.
- Yao, M. Z., & Flanagan, A. J. (2006). A self-awareness approach to computer mediated communication. *Computers in Human Behavior, 22*(3), 518–544.