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The role of shame, guilt and embarrassment in online social dilemmas

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The self-conscious emotions of shame, guilt and embarrassment are known for regulating human societies by (1) encouraging the wrongdoer to further comply and (2) extending reparation to the one damaged. Self-awareness is a requisite for the experience of self-conscious emotions. In this paper, we hypothesise that low self-awareness online deprives an offender of the emotional consequences that usually follow a norm violation. Therefore, the aforementioned pro-social benefits of self-conscious emotions are not made possible. We test this hypothesis in a study during which online offenders were assigned to either high or low self-awareness conditions. The results show that high self-aware participants, in contrast to low self-aware participants, experience more self-conscious emotions, collaborate more when given a second opportunity and apologise more frequently.

Self-awareness, norm compliance, uninhibited behaviour, self-conscious emotions, computer-mediated communication

1. INTRODUCTION

Computer-mediated communication (CMC) has brought together people of different origins, religions and socio-economic backgrounds. Within the richness of this online communication, several theories have developed to explain online behaviour. For example, online users have been shown to perceive others in an exaggerated positive light therefore constructing their experience as 'hyperpersonal' [12]. Their online partners appear to them more attractive, more affectionate and more personable. Furthermore, context cues that signal one's belongingness to a particular social group, prime online users to follow the social conventions of that group. This has been shown to encourage behaviours that are in accord with the group's norms [8]. A central tenet of these theories is that anonymity increases attraction to others [12] and enhances identification with the group [8].

Despite the promise of CMC theories depicting the importance of online anonymity, instances of uninhibited behaviours under anonymous conditions persist. Pseudonyms are very often used as a vehicle for deception (e.g. fraud, impersonation, trolling) [4]. Indeed, next to the 'hyperpersonal' experience that may develop in CMC, there is also the possibility of 'hypernegative' behaviour. This side of CMC has been underrepresented in the most recent research to-date [12]. The present paper takes a step in addressing this gap. We depart from current CMC theories to offer and test a novel explanation for online norm violations. In the following section we argue that low self-awareness online decreases the emotional consequences that usually follow norm violations i.e. shame, guilt and embarrassment. As a result of this, we hypothesise that the pro-social benefits of those self-conscious emotions, namely behavioural compliance and reparation, break down. We then test this proposal in an online social dilemma game setting during which high and low self-aware participants were given incentives to defect. This paper ends with a discussion which generalises our results to one-off interactions in CMC.

2. A POSSIBLE EXPLANATION FOR UNINHIBITED BEHAVIOUR ONLINE: 'SELF-CONSCIOUS EMOTIONS'

Human societies offer a set of norms that their members are expected to adhere to. When a member of the community violates a norm, there are practical consequences that follow (e.g. banishment from the community), as well as emotional consequences (i.e. shame, guilt and embarrassment). Upon experiencing self-conscious emotions, people have been known to remedy their actions [11] and to pacify the offended party with apologies [1]. Even more, the experience of self-conscious emotions in the long term reinforces affiliation to those norms and encourages future compliance [11]. Therefore, self-conscious emotions play an important role both in regulating our everyday interactions and also alleviating interactions that have been disrupted.

Shame, guilt and embarrassment have been repeatedly shown to be more acute when self-awareness is increased, while in the absence of self-awareness the same emotions are experienced more weakly [11]. In a recent effort to construct a theoretical model of self-conscious emotions [11], objective self-awareness was framed at the forefront of the emotional experience. In this conceptualization, attentional focus on the self ("I") is required to instantiate self-representations (e.g. "I am a good student"). These representations are then compared against the event taking place. Incongruence between a self-representation (e.g. I am a good student) and the event taking place (e.g. getting a low grade) leads to the experience of negative self-conscious emotions. This framework indicates that without self-focused attention, one cannot attend to the event taking place and therefore instantiate a self representation in order for an appraisal of the violation to begin. Self-focused attention, also known as objective self-awareness has been described as the awareness directed inwards towards the self rather than

outwards towards the environment also known as subjective self-awareness [3]. In laboratory settings, objective self-awareness has been mostly induced with mirrors which enhance self-focused attention. Objective self-awareness has also been increased by focusing the offender's attention back on his/her behaviour [2].

Contrary to what happens in face-to-face communication, in CMC, the salience of self-awareness that is otherwise created by physical and social cues (e.g. facial and corporal expressions) is reduced [7], [8]. Therefore, online, one would also expect the emotional consequences that usually follow norm violations to be experienced less acutely, offering fewer incentives for compliance. This statement is indirectly supported when observing online behaviour: one of the less desirable effects of computer-mediated communication has been the emergence of uninhibited and uncontrolled behaviour, in many cases shockingly unlike what is practised face-to-face (e.g. [5]). To address this problem, it is tempting to propose the use of stable identities where accountability would be increased by linking a norm violation to the perpetrator's real identity. However, as discussed earlier, research has shown that the inherent anonymity and physical disembodiment online, offers many benefits (e.g. [8], [10]). Consequently, in increasing behaviour regulation online, there is a need to find alternative solutions that may heighten self-awareness but at the same time will not compromise the benefits of anonymity.

3. STUDY

The study conducted was a between subjects experiment design testing self-awareness (low self-awareness vs. high self-awareness) as a factor that modulates self-conscious emotions, behaviour regulation and apology attempts following a norm violation. Participants were given incentives to 'defect' in a social dilemma game. This kind of game originated from behavioural economics [6] but has also been used in CMC [9] to better understand users' motivations during trust decisions. A participant of the game has two opposing choices (1) he can betray the trust of his opponent in order to gain more money or (2) split the gains in half, be fair and gain less money. We expected 'defectors' (those who betrayed their partners' trust) in the high self-awareness condition to experience more self-conscious emotions at the onset of the game (*H1*). As a result of this, they should be motivated to apologise or attempt to justify their actions to the offended party (*H2*). Given a second round of the game, defectors who were made high self-aware in the first round, should be motivated to rectify their behaviour by sharing more money with their opponent (*H3*). This increase in collaboration during the second round was expected to decrease both apology attempts and self-reports of the emotions experienced (*H4*).

3.1 Participants and Procedure
Fifty-six participants took part in total. However, forty participants' data was used as those participants defected and were useful to the objectives of this study. All participants were undergraduate students between the ages of 18 and 24. Proficiency in English was a requirement for attendance. Upon arriving, participants were led to a quiet room and seated by a computer. Each participant took part in the trust game [6] using a web-based application. The instructions of the game as given to participants follow.

"In this game there are two players. One of you will start off with 150 decision points and the other with 100 decision points. The player who holds 150 decision points makes the first move (first mover). The first mover can transfer 50 decision points to the other player (second mover) or keep the 50 decision points and cash in. If the first mover cashes in, this round of the game ends. If the first mover transfers 50 decision points to the second mover, the 50 points are automatically multiplied by 6 so that the decision points the second mover receives are 300. The second mover now has to decide whether to transfer part of the 300 decision points to the first mover. In this game the second mover can transfer increments of 25 decision points starting from 0 to 300. Once the second mover makes this move, the round of the game ends.

You will be randomly assigned to first or second mover but once your role is decided you are assigned to it permanently for all the rounds you play. Depending on a random draw, you may play 1 to 3 rounds of the game. You will know whether you proceed to the next round at the end of each round. You will be playing with a different player in each round."

For believability purposes, participants thought they were allocated randomly to either the first or second mover role. However, participants were always given the second mover role. In each round, participants were led to believe they were playing with a new player who was being debriefed at another UK university. The first mover was simulated in the application, always appearing to trust the participant by transferring the initial 50 points. A new non-gender indicative pseudonym was displayed in each round to represent the first mover. We 'reset' participants' interaction with the assignment of a new opponent in every new round as we wanted to control for a reputation effect that could bias the players' choices. A defection in the game constituted as transferring less than half of the amount gained i.e. less than 150 points. The game was set up so that participants could play 2 rounds. However, to provide a sense of continuity in the game, participants were led to believe they would play 3 rounds.

3.2 Experimental Design
The forty subjects of the study were randomly assigned to one of two conditions, a low self-awareness condition and a high self-awareness condition.

In the *low self-awareness condition*, participants were led to the experiment room which was faintly lit. Participants were instructed to construct a pseudonym for their participation. Low lighting and anonymity together have been used in previous CMC studies to decrease self-awareness [7].

Objective self-awareness has been increased in the lab in numerous ways, including showing the reflection of participants' image in a mirror so that the focus of self is temporal and by refocusing participants' attention on their norm violation with a reminder cue following the violation. In this paper, we focused on the latter method to construct a new self-awareness mechanism for CMC. In a study conducted by Beer et al [2] participants reported no emotion due to their inappropriate behaviour. Objective self-awareness was then increased by showing participants videos of their improper conduct therefore cuing them on their conduct. Following these retrospective viewing sessions, participants reported embarrassment. In a similar way, we propose the use of a 'text mechanism' that will act as an attention device bringing the actor's attention back to the self and the action. Hence, an actor who has violated a norm will be notified through the interface of his/her norm violation. We believe that such a mechanism will refocus the actor's attention on the anti-normative act so that an appraisal of the event can occur and therefore the possibility of experiencing a self-conscious emotion. In the *high self-awareness* condition, participants were treated identically to those in the low self-awareness condition. However, when a participant transferred less than 150 points to the first mover, the self-awareness mechanism appeared on screen. Participants read the following message: "[Participant ID], you shared less than half of your gains with [first mover ID] although your gains were made thanks to [first mover ID]'s initial donation." After participants received the self-awareness mechanism, they could not modify their money transfer decision in that round.

Three measures were collected during the study:
- *Self-conscious emotions reports*: At the end of each round, participants reported the intensity of the emotions they had experienced while playing the game. To conceal the purpose of the study, eight emotions were presented ranging from positive emotions e.g. joy to negative emotions e.g. anger. Amongst those were shame, guilt and embarrassment. Each emotion was rated from high (5) to low (1). We summed up the self-conscious emotions of shame, guilt and embarrassment into one score for each of the two rounds.
- *Apology reports*: Following each round, participants were requested to type a final message to their remote opponent in response to the question "Would you like to type a final message to [first mover ID]?" The first author and a naïve expert both rated the texts on two measures: their apologetic and their excusatory tone from high (5) to low (1). The two measures were summed up to form one score for each of the two rounds. Disagreements between raters were resolved through discussion.
- *Money transfer*: The participant's money transfer to his/her opponent was recorded in each round. The transfer was an amount between 0 and 300 and was measured in units of 25 (e.g. 100 points equalled to four units).

3.4 Results

Self-awareness manipulation check
At the end of each round of the game, participants completed a short questionnaire used in past CMC experiments as a measure of self-awareness [7]. Two questionnaire items measured objective self-awareness from high (5) to low (1): "In this experiment I've generally been very aware of myself, my own perspective and attitudes" and "Rather than thinking about myself in this experiment, my mind has been distracted by my task and what is going on around me" (reverse scored). Participants' self-awareness scores in the two rounds were summed up to one total self-awareness score. A t-test showed that participants reported significantly higher scores of self-awareness in the high self-awareness condition $t(39) = -2.610$, $p<0.01$. Therefore, the self-awareness manipulation worked.

Analysis
A Kolmogorov-Smirnov test showed that the data was not normally distributed. We therefore chose a Mann-Whitney non-parametric test for the analysis. Emotion, money transfer and apology for round 1 and round 2 were the dependent measures. Table 1 presents the descriptive statistics.

Table 1: Descriptive Statistics

	Low self-awareness condition (N=20)		High self-awareness condition (N=20)	
	Mean	Std. Deviation	Mean	Std. Deviation
Money transfer round 1	2.25	1.71	2.45	1.986
Money transfer round 2	1.75	1.74	3.25	2.593
Emotion report round 1	4.50	1.76	6.70	2.155
Emotion report round 2	4.40	1.72	5.30	2.386
Apology round 1	2.78	1.61	4.60	2.644
Apology round 2	2.88	2.07	3.88	2.025

In round 1, participants of the high self-awareness condition reported higher self-conscious emotions (U=85.00, $p<0.01$). Our first hypothesis (H1) was confirmed: higher self-awareness increased participants' emotions after

defecting. No difference was found in the money transfer metric in round 1 (U=185.00, p>0.05). Participants made equal transfers which indicate that the defectors were equal in both conditions. In support for H2, high self-aware participants made more efforts to apologise and justify their actions (U=116.00, p<0.05). In round 2, the pattern of results was inverted. In agreement with H3, participants who had been made self-aware in the first round, transferred more money in round 2 (U=132.500, p<0.05). As a result of this, those participants reported less emotions (U=152.00, p>0.05). However, contrary to our prediction, high self-aware participants still apologised more often, although the effect was weaker (U=152.00, p<0.05). Conclusively, in the second round, high self-aware participants who had experienced more emotions in the first round transferred more money. Participants' adherence to the norm explains their lower reports of self-conscious emotions and the weaker apology effect.

SUMMARY

While the integration of computer-mediated communication in everyday life is inevitable and irrefutably beneficial, understanding the causes of online norm violations and proposing new ways to strengthen behaviour regulation are both relevant and important topics in CMC and to the prevalent themes of this conference.

The game scenario chosen for this study can be generalised to one-off online interactions where participants do not have expectations of further interacting with their online partner in the future. In fact, according to [12], low interaction expectancy lowers attraction to others which may also explain reduced inhibition online. In this paper, we demonstrated that during one-off online social dilemmas, being fair and cooperating with strangers may be hindered by low self-awareness. We began with the premise that low self-awareness online reduces an offender's experience of shame, guilt or embarrassment. We claimed that this effect in return may reduce the pro-social derivatives of those emotions: behaviour regulation (i.e. compliance in future interactions) and affiliation attempts (i.e. apologies). We described a text mechanism for increasing self-awareness which we tested in an online social dilemma game setting. Our hypotheses were all confirmed: self-aware participants reported experiencing significantly more self-conscious emotions in the first round of the game that low self-aware participants. Similarly, those participants apologised more frequently. In the second round, self-aware participants reported fewer emotions, apologised in lesser degrees and transferred significantly more money to their new online opponent. Therefore, the experience of self-conscious emotions in the first round of the game reinforced participants' affiliation to the norm in the second round. Given our results, we can claim that in those one-off encounters during which anti-normative behaviour can be increased, the elicitation of self-conscious emotions (e.g. by means of self-awareness) may serve as a check that ultimately promotes behaviour regulation and repair within CMC.

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