Playing Games: Determining the salience of social cues and group norms in eliciting aggressive behaviour

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Abstract

Given the rise in new technologies which allow for anonymous interactions, understanding the effects of anonymity on the behaviour of individuals has become an important area for social psychologists to explore. While theories of deindividuation and dehumanisation propose that anonymity will automatically lead to aggressive and anti-social behaviour, the Social Identity Model of Deindividuation Effects (SIDE) argues that the social environment can mediate this effect. Divided into two phases, the first phase of this study was created to test the hypothesis of the SIDE model using a quasi-experimental design and the online computer gaming environment as a testing platform. The results of this phase, in which variables of competitive and cooperative group norms as well as gendered vocal cues were introduced, point to the salience of competitive environments in inducing aggressive behaviour. This effect may be heightened by large group sizes and human-player opponents. The second phase of the study involved further exploration of these results though open discussions held on various South African gaming-related forums. A number of important themes emerged from these dialogues, specifically that of aggression in others, personal investment, stress relief and gender. Ultimately, respondents to this phase concluded that the anonymity provided by the internet along with personal investment in the game's outcome (such as in a truly competitive environment) were strong predictors of aggressive behaviour but that this could be mediated through strict administration in these environments. Overall, the results of both phases of this study offer support for the SIDE model and suggestions of new avenues for future researchers to explore.

Key words: anonymity, deindividuation, aggression, competition, cooperation, group norms, gender, social cues, SIDE model

Introduction

Social psychologists have long been interested in the effects of anonymity (a condition or state wherein a person is unidentifiable to those around him or her or lacks individuality) on the behaviour of individuals in various environments. Initial research into the phenomenon concluded that the anonymous individual experienced a state of deindividuation that would automatically lead to antisocial and aggressive behaviour (Postmes & Spears, 1998). More recently, however, research has revealed that social cues present in the environment can influence the anonymous individual's actions to the degree that they may display pro-social or hyperpersonal behaviour instead (Johnson & Downing, 1979; Okdie, Guadagno, Bernieri, Geers, & Mclarney-Vesotski, 2011; Postmes & Spears, 1998; Postmes, Spears, & Lea, 2002; Walther, 2007).

With the introduction of computers and the Internet, communicating and interacting anonymously has become part of daily life for many people around the world. Online game environments, especially, create a unique environment in which players are unknown to one another and social cues are exceedingly limited (Guadagno, Cialdini, & Evron, 2010). These environments provide researchers with a platform to explore psychological phenomena, such as the salience of social cues in eliciting aggressive behaviour in anonymous individuals, that would be more difficult to examine in the traditional setting (Kraut et al., 2004).

Effects of Anonymity

Deindividuation. Deindividuation is described as a psychological state characterised by an individual's decreased sense of self-awareness and reduced apprehension of being negatively, or not positively, evaluated. Deindividuation theory proposes that the state is brought on by the psychological mechanisms of anonymity and suggestibility, and causes an individual to behave in an antinormative and disinhibited manner (Postmes & Spears, 1998).

First investigated in a correlational study of deindividuation and disinhibition, Festinger, Pepitone and Newcomb (1952) note that individuals who experience this state of deindividuation would be more likely to behave in ways they would usually deem unacceptable for themselves. Zimbardo (1970) would later formulate a model for deindividuation wherein he claimed anonymity created the potential for evil in a person (as cited in Zimbardo, 2004).

Zimbardo's classic experimental research showed that deindividuated participants (i.e., those assigned a condition of anonymity) delivered twice the number of painful shocks to another individual as compared with those participants assigned a condition of uniqueness (Zimbardo, 1970 as cited in Zimbardo, 2004). Other studies, which used different methods

including quantitative questionnaires and covert observation, found similar results (see, e.g., Cannavale, Scarr, & Pepitone, 1970; Diener, Fraser, Beaman, & Kelem, 1976; Prentice-Dunn & Rogers, 1980).

Zimbardo's model was later tested in a cross-cultural study of the effects on the aggression of warriors altering, or not altering, their appearance before engaging in combat. The results of the study, which involved 23 geographically and linguistically separate cultural groups, indicated a strong link between deindividuation and aggression in warfare (Watson, 1973). This research lent strong support for Zimbardo's hypothesis, and demonstrated that it was not a culturally bound phenomenon.

However, a meta-analysis found that the presence of certain social cues and group norms, such as group size or personal appearance, influenced the behaviours exhibited by deindividuated individuals (Postmes & Spears, 1998). Other studies also indicated that anonymity would not automatically lead to aggressive or anti-social behaviour and may even lead to pro-social or hyperpersonal behaviour (Johnson & Downing, 1979; Postmes et al., 2002, Okdie et al., 2011; Walther, 2007). For example, one study demonstrated that dressing participants in nurses' outfits significantly reduced the aggressive behaviour of deindividuated individuals when compared to those dressed as Klu Klux Klan members (Johnson & Downing, 1979).

Dehumanisation. In contrast to deindividuation, dehumanisation occurs when the other person's identity is unknown to the individual and the individual perceives the other person as "less than human" (Haslam, Loughnan, Kashima, & Bain, 2008, p. 56). Victims can be dehumanised through the process of deindividuating them with the use of language that likens them to animals (Bandura, 2002) or machines (Haslam et al., 2008). Dehumanising an individual, or a group, reduces the personal distress involved in mistreating those people (Bandura, 2002).

In the now classic 1971 Stanford Prison Experiment, researchers demonstrated how physically and mentally healthy individuals, assigned roles of guards, could begin to treat randomly assigned deindividuated and dehumanised 'prisoners' with excessive cruelty (Haney, Banks, & Zimbardo, 1973).

Another study that demonstrated the effects of dehumanisation showed that college students acted more aggressively, by inflicting a greater number of painful shocks onto an anonymous individual, when that individual had been dehumanised (labelled as 'animalistic' by the researcher) than when the individual had received a humanizing or neutral label (Bandura, Underwood, & Fromson, 1975).

Effects of Anonymity on Internet Users

The effects of deindividuation and dehumanisation have been used as an explanation for antinormative behaviour often witnessed in computer-mediated communication (CMC) settings (which allow for users to remain anonymous to one another while interacting). Antinormative behaviour seen in these environments includes cyberbullying and aggressive interactions between users which is known as "flaming" (Erdur-Baker, 2010; Greitemeyer & McLatchie, 2011; Guadagno et al., 2010; Postmes & Spears, 1998). Okdie et al. (2011) noted, however, that due to the lack of certain cues usually salient in face-to-face communication, as well as the tendency of those interacting online to present themselves positively, that interaction may become hyperpersonal which often results in the receiver idealising the sender.

Some of the antinormative and antisocial behaviour associated with CMC include cyberbullying, electronic bullying or online harassment (Cassidy, Jackson, & Brown, 2009; Vandebosch & Van Cleemput, 2008). Vandebosch and Van Cleemput (2008) define cyberbullying as acts which are intended to hurt the receiver and form part of a repetitive pattern of behaviour. Examples of cyberbullying include sending threatening or insulting messages or messages that contain unwanted or inappropriate sexual comments, public humiliation (Vandebosch & Van Cleemput, 2008) or the labelling of individuals (as gay or lesbian, for example) (Cassidy et al., 2009).

Cyberbullying can be achieved using any of the many technological media tools used for communication (Kowalski & Limber, 2007). These tools include email services, instant messages (IMs) (Okdie et al., 2011), chat rooms, and websites. Social networking websites, such as Facebook and MySpace, as well as online gaming sites and interaction tools, can also be used for online harassment (Mishna, Saini, & Solomon, 2009).

Several survey studies have shown cyberbullying to be a significant problem deserving of research attention (Erdur-Baker, 2010). For example, in a sample of 3767 school-age students, 11% indicated that they had been victims of cyberbullying, 4% indicated they had been both cyber-bully and victim and 7% revealed they were cyber-bullies (Kowalski & Limber, 2007).

In a study conducted by Mishna et al. (2009), participants revealed that they believed that the anonymity provided by technology and the Internet increased the power of the perpetrator of cyberbullying or online harassment. Most often, in the traditional experience of bullying and harassment, the victim and the perpetrator are known to one another. However, in research conducted by Kowalski and Limber (2007) around online bullying and

harassment the researchers noted that almost half of the victim-respondents did not know the identity of the perpetrator (the perpetrator was anonymous) although the perpetrator-respondents knew the victim's identity.

Effects of Anonymity on Online Gaming Participants

Although aggressive and antisocial behaviour is strongly associated with the effects of anonymity, especially that provided by CMC, this has not been the focus of CMC research (see, e.g., Koch, Mueller, Kruse, & Zumbach, 2005; Lee, 2006; Okdie et al., 2011; Postmes et al., 2002; Walther, 2007) and little use has been made of the online game setting for this purpose. That is to say, much of the research concerning online gaming, almost all involving quantitative surveys, has focused attention on Internet and gaming addiction or on the experiences of players in Massively Multiplayer Online Role-Playing Games (MMORPGs) or both (see, e.g., Barnett & Coulson, 2010; Griffiths, 2010a; Hussain & Griffiths, 2009; Williams, Caplan, & Xiong, 2007; Williams, Caplan, & Yee, 2008). This may be because MMORPGs, which are by their nature being played globally by a vast number of people at any given time, provide researchers with easy access to a large number of potential participants (Kraut et al., 2004).

It is important to note, however, that players who participate in MMORPGs often form or join guilds (teams of players) that will play together regularly in order to enable themselves to achieve certain in-game objectives. Barnett and Coulson (2010) argue that being part of a team or guild that plays together regularly reduces the effects of anonymity within the game as friendships and social groups are formed.

There are, however, a large number of online games (non-MMORPGs) wherein players do not play regularly with the same players and teams are formed at random. These games allow players to connect to a large server of players and either create a new game (that other players can join) or join an existing game. The game itself will 'drop' the player into a team at random (ensuring balanced numbers of players in each team, however) if the game involves a team dynamic. Unless a player specifies that the game they are creating is available to join only by individuals on his or her 'friend list' (a list of players know to that individual), a player will often play with individuals completely unknown to him or her.

Players in these games have the opportunity to communicate with one another via a number of channels including PMs (which are normally between two players) and global chat messages (which are delivered publically to every player in the game). More recently introduced is the method of communicating using Voice over Internet Protocol (VoIP) which allows users to talk to each other in real-time using microphones (a service which other

anonymous online environments, such as open chat rooms, do not offer) (Williams et al., 2007). While communicating, users can maintain their anonymity through the use of pseudonyms or 'nicknames' (Okdie et al., 2011) and may even pretend to be of a different gender or age or take on a different personality (Cassidy et al., 2009). Some degree of anonymity is lost when individuals make use of VoIP options in-game as a person's voice may reveal certain social grouping clues, such as age or gender (Williams et al., 2007).

Social Identity Model of Deindividuation Effects (SIDE)

Introduced as both a critique of deindividuation theory and as an extension of the social identity model, the Social Identity Model of Deindividuation Effects (SIDE) notes that, unlike the original deindividuation theory suggests, people in a crowd do not lose their own identity but, instead, assume the identity of the crowd or the in-group (Postmes & Spears, 1998; Postmes et al., 2002).

SIDE expands on the original social identity model by adding that depersonalisation occurring by the anonymity created in certain Internet conditions has cognitive and strategic consequences on social behaviour. These environments also give the individual the freedom to "ignore social pressures and unwanted influences" (Postmes et al., 2002, p. 3).

The SIDE model proposes that the cognitive impact of depersonalisation results in people being more aware of, and reacting more easily to, group membership cues. This also results in people being less likely to perceive others as individuals but rather as a representative of wider social groups (such as gender groups) (Postmes et al., 2002). Due to the lack of individuating information that would interfere with identification with group members, online communication can actually intensify group salience and conformity to a group norm (Lee, 2006; Guadagno et al., 2010).

Quasi-experimental studies conducted by Postmes et al. (2002) found that depersonalisation in CMC resulted in greater stereotyping and increased perceptions of homogeneity in the out-group. The results suggest that anonymity accentuates intergroup differences, enhancing potentially negative stereotypes of the out-group, by depersonalising perceptions of the out-group (Postmes et al., 2002). Such negative stereotypes can lead to hostility and acts of violence and aggression towards the stereotyped out-group (Baron, Branscombe, & Byrne, 2009).

SIDE and Online Gaming. The SIDE model suggests that when group membership cues are available and individuals are anonymous, they will react more easily to these cues by conforming to the norms of those groups and interpreting others as being either part of the in-group or the out-group (Postmes et al., 2002). Group norms, rules or expectations governing

the behaviour of group members (Baron et al., 2009), combined with the anonymity provided by the Internet, can encourage individuals to behave in a manner which is "atypical for them but consistent with the norms established by the behaviour of others" (Guadagno et al., p. 450). Thus, the behaviour of others in an online game as well as the expectations created by the particular game environment (such as cooperative play or competitive games) could influence the behaviour of players (Eastin, 2007).

The SIDE model also suggests that greater stereotyping of out-group members occurs when individuals are anonymous and that this stereotyping will ultimately affects any potential interactions (Postmes et al., 2002). For example, Koch et al. (2005, p. 29) showed that individuals in an anonymous chat environment would make use of "gender stereotypic cues to infer gender" and varied their conversational behaviour accordingly.

In online gameplay, the use of various technologies for communicating and interacting with other players (such as the use of pseudonyms, IMs, and VoIP) provides users with various social cues that can be used to infer gender, age, nationality, or even race (Williams et al., 2007). These inferences could potentially lead to the classification of those users as part of the in-group or the out-group, and can result in the stereotyping of those considered out-group members (Postmes et al., 2002). Such stereotyping creates the potential for hostile and aggressive interactions between players (Baron et al., 2009) but also has the potential to reduce aggression. Eastin (2006) showed, for instance, females had more aggressive thoughts when playing against a male opponent while males had significantly less aggressive thoughts when their opponent was female.

Summary and Conclusions

Ultimately, research into anonymity and its effects on the behaviour of people, as discussed from the classic as well as the more recent literature, suggests that deindividuated individuals are likely to behave in an anti-social and aggressive manner. With the introduction of new technologies that allow for users to interact anonymously, this negative behaviour associated with the effects of anonymity have become evident in the increasing reports of cyberbullying and online harassment.

The SIDE model argues, however, that the anonymous individual will not automatically act in an anti-social or aggressive manner. The presence of social cues and group norms are held to affect the deindividuated individual's behaviour to the degree that it may be seen as pro-social or hyperpersonal. In situations where the group norm tends towards helpful, pro-social or cooperative behaviour, group members are likely to conform to these expectations even when they are anonymous.

The online gaming environment, wherein players are anonymous and social cues are exceedingly limited, provides the perfect platform on which to test hypotheses derived from the SIDE model and find out which, if any, social cues and group norms affect the display of aggressive behaviour.

Rationale

Due to various technological advances in recent decades, the Internet has become a widespread phenomenon and an integral part of everyday life for millions of people around the world. The Internet provides users with many opportunities to interact with others anonymously (Guadagno et al., 2010) and so it becomes important to explore the effects of anonymity on the behaviour of individuals.

So far, research has suggested that the anonymity afforded to individuals through the use of the Internet and CMC technologies often results in aggressive and anti-social behaviour. Although the SIDE model suggests that social cues and group norms will reduce aggressive behaviour or produce pro-social and hyperpersonal behaviour, exploration is still needed to determine exactly which social cues and group norms will have this effect.

The online game environment provides a solid platform in which to explore the salience of social cues and group norms in eliciting aggressive behaviour in anonymous individuals. Specific group norms can be created through the type of game employed (such as a cooperative game or a competitive game) while social cues can be introduced through the use of gendered pseudonyms and VoIP technologies.

Research Method

The research project was designed to explore the SIDE model and the salience of vocal gender cues, as well as the influence of group norms, in eliciting aggressive behaviour in deindividuated individuals. In order to do this, the study was divided into two phases.

Phase 1

The first phase of the research project involved a quasi-experimental research design. The experiment employed a 2 x 3 factorial design in order to test the relationship between the independent variable of aggression and two independent variables (namely, group norms and social cues).

For the purpose of this study, the assessment of aggression was confined to aggressive verbal messages sent from other players to the researcher or research assistant. Messages were defined as aggressive if they met the definition of cyber-bullying and harassment outlined by Vandebosch and Van Cleemput (2008) and Cassidy et al. (2009) or the definition of verbal aggression given by Eastin (2007). Essentially, messages which were intended to

hurt or ridicule the receiver, formed part of a repetitive pattern of behaviour, involved public humiliation, were deemed threatening or insulting, contained unwanted or inappropriate sexual comments or profanity, or including negative stereotyping or labelling (such as gay or lesbian) were coded as aggressive.

Group norms were manipulated through the use of different gaming environments which were inherently either cooperative (requiring all players to work together in order to achieve the game's objectives) or competitive (requiring teams of players to compete and kill each other in order to achieve the game's win conditions). The two games chosen for this study were *Left 4 Dead II* and *Team Fortress II*. In the *Left 4 Dead II* environment a cooperative group norm is generated by requiring the 4 players to work together and defeat a common computer-generated enemy and thus survive through the various levels. *Team Fortress II*, on the other hand, provides a competitive environment by pitting two teams of 12 players against one another for limited resources and win-lose game objectives.

Both online game environments provided the condition of anonymity required for the study. Both the players and the researcher (or research assistant) could only be identified by their chosen pseudonyms (which can be changed at any time). Public servers, rather than servers devoted to league matches between pre-formed teams, were also specifically chosen for this experiment. These servers allow anyone with a copy of the game to join and automatically assign individuals to a team where a space exists.

Social cues were introduced into both environments in the form of the voice of the researcher (female) and the research assistant (male) along with respectively gendered pseudonyms (*JaneDoe* and *JohnDoe*). A control condition which involved a neutral pseudonym (*Named)* and no use of VoIP by the researcher was also introduced into the experiment.

Hypotheses. The following hypotheses were tested:

1. Main Effect 1 (Social Cues): Gendered social cues will affect the number of aggressive verbal messages received by the researcher/research assistant.
2. Main Effect 2 (Group Norms): The game environment will affect the number of aggressive verbal messages received by the researcher/research assistant.
3. Interaction Effect (Social Cues and Group Norms): The type of social cues used will have a differential effect on the number of verbal aggressive messages received by the researcher/research assistant at different levels of the game environment.

Procedure. The experiment was conducted through the researcher (or research assistant) engaging in an hour of game play for each variable condition. More specifically, the researcher, using the pseudonym *JaneDoe,* made use of VoIP options in the cooperative game (*Left 4 Dead II*). This procedure was then repeated in the competitive (*Team Fortress II*) game environment. For the male social cue variable condition, a male research assistant was employed to play each game for an hour using the pseudonym *JohnDoe* and VoIP options. Finally, the researcher played both games again for an hour each using the neutral pseudonym (*Named*) without engaging in any VoIP options.

In all conditions, the researcher and research assistant made use of only verbal messages which could be considered neutral. These messages included greeting other players, responding to general conversational messages and communication about the game conditions (such as indicating where another player or common enemy is situated).

All of the audio from the games was recorded using digital voice recorder and all verbal interactions with the other players were transcribed. The interactions of the other players with the researcher was then be coded as either aggressive or not. For the purpose of this study, each sentence was counted as a single message.

Phase 2

Online forums discussions can be a rich source of data, especially on how an individual interprets their personal experiences in the online and game environment (Griffiths, 2010b). For this reason, the second phase of this research project, which was designed to further explore the results of the experiment in phase 1, took the form of a number of open discussions held on various South African gaming forums.

Procedure. The following question was posed in gaming subsections of three major South African online forums, namely *NAG* (www.nag.co.za/forums), *My Broadband* (www.mybroadband.co.za/forums), and *Steam* (http://forums.steampowered.com/forums).

Do you feel you act more aggressively (i.e.: send more aggressive messages/say more aggressive things) in an online game than you would in real life? Have you experience aggression or received aggressive messages from other players? Do you experience more aggression from players using VoIP or from players using only text messages?

The question was posted in three subsections of the Steam forum website, specifically the *General Forum*, the *Team Fortress II* forum and the *Left 4 Dead II* forum.

Analysis. Participants' responses to the question, and subsequent discussion, were recorded and the method of thematic analysis was used to interpret the data. Thematic analysis allows the identification and reporting of patterns (or repeated ideas) within the data

(Braun & Clarke, 2006). These themes in the responses were then compared with the results of the experiment as well as research conducted in the field.

Participants and Settings

Phase 1. More than 78 participants took part in the experiment conducted in the games environment. The exact number of participants that took part in the study was difficult to determine as players could join and leave the game servers at any time during the experiment and not all of the players made use of VoIP options (remaining silent throughout the game). *Team Fortress II* involves two teams of 12 players each which meant at least 23 people took part in each game. *Left 4 Dead II* is played in teams of 4 players which meant a total of 9 people took part in this part of the study. While individuals had the option of leaving the game server at any time, none of the individuals who participated in the *Left 4 Dead II* part of the study chose to terminate early.

In contrast to other research conducted using online game environment (see, e.g., Eastin, 2007; Hussain & Griffiths, 2009; Williams et al., 2007), participants for this study were not recruited in any manner. Participants were also not randomly assigned to each game condition. Instead, participants were made up of individuals who owned the relevant game, had access to a suitable Internet connection and were freely choosing to participate in the online gameplay. This both ensured anonymity the players and the elimination of any experimenter effects on the participants' behaviour.

While the quasi-experiment was hosted on South African public servers, and so participants are assumed to be living in the country, it was not possible to determine whether the participants were South African citizens or not. Demographic research conducted in the United States and in the United Kingdom indicates that the average online gamer in these countries is a white, middle-class, adult male around the age of 31 (Griffiths, Davies, & Chappell, 2004; Williams et al., 2008). It is not known whether the demographics of the average South African gamer falls into a similar category or not. However, one could assume that in South Africa, white, middle-class, adult males are the most likely to be able to afford to engage in this form of entertainment, given the demographics and history of the country.

Of the participants who made use of VoIP, all were male and most spoke in English which lends support for the assumption about the demographics of the participant group. Some of the participants had a distinctly Afrikaans accent and small number spoke in Afrikaans. The ages of the players could not be determined.

Phase 2. In the second phase of the research project, conducted after the experiment in phase 1 was completed, 98 individuals replied to the discussions held on the South African gaming-related forums. While similar assumptions can be made about the demographics of these participants and those from the first phase of this study (that is, respondents are assumed to be white middle-ages males of middle to upper-socioeconomic status), it is not possible to determine their ages, gender or even citizenship. One respondent, however, claimed to be female while another claimed English as a second language.

Ethical Considerations

Informed Consent

According to the Ethics Code of the American Psychological Association, researchers may do away with informed consent in the case of observational studies of public behaviour which is not reasonably expected to cause participants harm or distress (Goodwin, 2010).

Although there is some debate surrounding the issue, Kraut et al. (2004) explain that online behaviour can be considered public behaviour when the communication is group orientated (such as in a chat room, even if a password is required before participation is possible) or "if the person recording the information is considered party to the communication" (p. 111). Finally, informing participants of the research study could possibly influence their behaviour and reduce the validity of the research results. Thus, informed consent was not sought from the participants before conducting the research and collecting data.

Ethical approval for this study was granted by the Ethics Committee of the University of Cape Town's Department of Psychology.

Results and Discussion

Phase 1

The first phase of this research project set out to test the salience of social cues and group norms in eliciting aggressive behaviour in anonymous individuals. The multi-player online game environment was used in order to both induce deindividuation in participants as well as to provide established group norms through the use of competitive and cooperative games (*Team Fortress II* and *Left 4 Dead II* respectively). Social cues were introduced into both environments in the study through the use of specifically gendered pseudonyms (*JohnDoe* and *JaneDoe*) and VoIP (male and female voices used respectively). A gender neutral (*Named*) and silent control was also introduced.

The results of this phase require further exploration as absolutely no aggressive messages were received by either the researcher or the research assistant in any condition, regardless of the social cues or group norms introduced. Effectively, the study did not produce sufficient evidence to reject the null hypotheses for either of the main effects or the interaction effect.

However, aggressive messages (such as calling another player "gay" or swearing at another player) were witnessed between other players in the competitive group norms condition. These messages were being sent between the other players at a rate of approximately 1 aggressive message every 10 minutes (a total of 23 aggressive messages were witnessed in the 3 hours of competitive gameplay engaged in for this study). No aggressive messages were witnessed between any players in the cooperative group norm conditions.

In line with the SIDE model, these results suggest that the behaviour of the anonymous participants was influenced by the environmentally established group norms. More specifically, while players were anonymous in both conditions, only the players in the competitive group environment sent aggressive messages. Although it can be argued that participants who are more inclined to aggressive behaviour may be more likely to play a competitive game (rather than a cooperative game), this finding is supported by research recently conducted by Adachi and Willoughby (2010). Making use of the Hot Sauce Paradigm as an indicator of overt aggressive behaviour, the researchers compared aggression in (non-deindividuated) individuals following a period of playing either a competitive game or a non-competitive game. The Hot Sauce Paradigm involves participants being asked to mix up some hot sauce from four ranked (in terms of spiciness) bottles for another individual whom they are told does not like spicy food. From this, the researchers concluded that competitive games produce higher levels of aggression compared with a non-competitive game. The researchers also noted that this result was not influenced by the level of violence inherent in the game.

This is contrary to the findings of Greitemeyer and McLatchie (2011) who claimed that violence in video games induces dehumanisation and, in doing so, increases aggressive behaviour in players. It could be argued that both games used in this study are inherently equally violent as both have been rated as having 'mature' content (containing 'intense violence' and 'blood and gore') by the Entertainment Software Rating Board (Entertainment

Software Rating Board [ESRB], 2011). Thus, while aggression linked to violence in video games was not an area this study intended to examine, the results of the experiment lend themselves to the conclusion that the competitive nature of the game, rather than any inherent violence, led to the aggressive behaviour between players.

A counter argument could be made, however, that due to the nature of the *Team Fortress II* and *Left 4 Dead II* environments, wherein all players are represented by human characters and the use of VoIP may remind others of the player's humanness, the games lacked the mechanics to induce dehumanisation in players. This may explain the differences between the conclusions reached in this study and those of Greitemeyer and McLatchie (2011).

Nevertheless, consistent with the arguments of the SIDE model and research conducted by Schmierbach (2010), which explored the aggression of (non-deindividuated) players following their engagement in competitive, cooperative or solo game environments, the results of this experiment lends support for the conclusion that cooperative gameplay reduces the tendency of players towards aggressive behaviour online. Lee and Lim (2009) offer the explanation that cooperative gameplay environments significantly reduce physiological arousal by reducing the mental and physical load (dividing it amongst the other players) of the tasks required by the game. Competitive gameplay environments, on the other hand, saw participants experience a slight increase in physiological arousal which could predispose players to aggressive behaviour.

Eastin (2007) noted, however, that the size of the group of players was an important factor in predicting aggressive behaviour. In particular, it was found that groups of 6 players were significantly more hostile than groups consisting of only 2 or 4 players. This finding was attributed to the fact that larger groups provide greater anonymity for the individual and thus allowed for more overtly competitive behaviour. Given that *Team Fortress II* is played with two teams of 12 players each while *Left 4 Dead II* is played with a team of only 4 players, the size of the groups may have been an important contributing factor to the aggressive behaviour witnessed between players in the competitive environment.

Finally, research conducted by Eastin (2006), which found that players had increased aggressive thoughts when their opponents were human as compared to computer-generated opponents, may go further in explaining the differences in aggressive behaviour witnessed in

this study. More specifically, while *Team Fortress II* involves two teams made up of human players, *Left 4 Dead II* has only computer-generated enemies.

Altogether, the results of the first phase of this research project point to the conclusion that competitive group norms, coupled with the anonymity provided in the online game environment, can induce aggressive behaviour in deindividuated individuals. This effect may be heightened by large group sizes and human-player opponents.

Phase 2

The second phase of the study allowed for the further exploration of the results of the experiment. Through a number of discussions hosted on various South African gaming forums, respondents were able to give their own interpretations of the results and thus add a fresh perspective on the research. A number of important themes emerged in these dialogues, specifically that of aggression in others, personal investment, stress relief and gender.

Aggression in others. In response to the researcher's question as to whether the respondents had ever experienced aggressive behaviour from others in the online game environment (via either text or VoIP), 56 individuals replied directly. Of those 56 respondents, all replied in the affirmative although almost all claimed not to be perpetrators of any aggressive behaviour. More specifically, most stated that they were no more aggressive online than they were in everyday life situations. For example:

I'm just as aggressive online as I am IRL[1]*. Most people are definitely more aggressive online, though. Probably 75%. The smallest minority are people who are less aggressive online. (Participant 1, Steam L4D2 Forums)*

While a small number of respondents (17) admitted that they tended to behave more aggressively in the online environment, almost all of those respondents attributed their behaviour to situational factors such as the behaviour of other players. As an example:

I would say that I act more aggressively online than I do in real life, but typically only because of the opponent's aggressiveness (Participant 17, Steam General Forums)

Although it may be possible that individuals who are aggressive online would not respond to a question about their behaviour in an online discussion, or may simply not

[1] IRL – In Real Life

recognise their behaviour as aggressive, it seems more likely that the respondents are influenced by the well-established correspondence bias (or fundamental attribution error). This is the tendency to conclude that another person's behaviour (unlike their own) is a result of their inherent nature rather than stemming from any situational causes (Gilbert & Malone, 1995). As examples of this, many of the forum respondents attributed the aggressive behaviour witnessed in other players online to the personality of the player, claiming that those players were "immature" or "insecure."

Some forum respondents also attributed aggressive behaviour to the age of the player, assuming younger players to be the most aggressive. For instance:

Generally angry people on the Internet seem to be younger (Participant 19, Steam TF2 Forums)

I would say, look at you (sic) age in players closer. You will see that the younger people are more aggressive and using foul language than the older players. (Participant 3, Broadband Forums)

The suggestion that younger players are more likely to be aggressive is supported by the theory that adolescents are less able to regulate their arousal after playing a competitive video game compared with their adult counterparts (Adachi & Willoughby, 2011). The limited demographic details available from the present study means that it is not possible to determine if, in fact, younger players are more aggressive than their adult counterparts and so suggest that further research is necessary here.

Finally, respondents also attributed the aggressive behaviour witnessed in other plays to the anonymity provided by the online gaming environment. Two respondents emphasised this point:

The aggressiveness is exacerbated by the supposed annonymity (sic) and protection afforded by the Internet. (Participant 25, Broadband Forums)

You are pretty much anonymous, and as a result you can say/do whatever the hell you want without the fear of the consequences you would get in real life. (Participant 3, Steam TF2 Forums)

While this seems to be a commonly held belief (see, e.g., Guadagno et al., 2010) the results of the first phase of this study point to the conclusion that anonymity induced through

the online environment alone is not enough to produce aggressive behaviour in individual. As previously discussed, a number of factors (such as group norms or group sizes) can combine to ultimately influence whether the anonymous individual will behave in an anti-social manner or not. This conclusion is in direct opposition of the theories of deindividuation but is in line with the SIDE model.

The SIDE model is also supported by the argument put forward by a number of the respondents that personal investment in the outcome of the game is an important factor in eliciting aggressive behaviour.

Personal investment. The respondents on the forums pointed to players who played online games competitively (such as in a sports-style clan matches), rather than simply "for fun", as being more aggressive towards their teammates as well as their opponents. This was attributed to the fact that these players were personally invested in the outcome of the game, as some respondents explained:

In competitive matches ... there's a lot more tension and the stakes are higher, so there's a lot more aggression (Participant 3, Steam General Forums)

Now on the league side things could get heated very quickly... people get aggressive and whining in a competition environment, but not so bad in a casual environment (Participant 2, NAG Forums)

It is important to note, however, that in these situations players would be known to one another (playing with and against one another regularly). For this reason aggressive behaviour in these situations could not be linked to the anonymity associated with online gameplay but rather to the competitive environment.

Another way in which a player could be personally invested in the game was through financial investment in the game. Respondents argued that players who had paid for a game were less likely to behave aggressively online as they risked being banned from the servers by administrators and thus losing the ability to access the multiplayer environment. It was argued that players who had been able to legally access the game without purchasing it (*Team Fortress II* recently became free-to-play) were less invested in the game and thus more likely to behave aggressively. Two participants argued as follows:

There are still a lot of admins in our country and I feel this has a great effect on the way players interact with each other. If they feel they are going to get banned they will hold themselves back (Participant 11, NAG Forums)

regristrated (sic) much more aggression from Free Players. They insult your for Killing, Dominating but when you got killed from them they call you noob[2], idiot etc even if you killed them 20 times before (Participant 2, Steam TF2 Forums)

Unfortunately, it was not possible in the first phase of the study to determine which participants had paid for the game or had gotten it for free thus further research would be needed to determine if there is a relationship between these two factors.

Research has, however, been conducted in the area of stress relief and online gameplay.

Stress relief. In contrast to the players who are playing to win, many of the respondents pointed out that they chose to engage in multiplayer online games "for fun" and to relieve stress. A number of studies have noted that video games, including those played online, are used successfully to reduce the stress of players (see, e.g., Hussain & Griffiths, 2009; Reinecke, 2009; Ferguson & Rueda, 2010) and can result in reduced negative affect (Hartmann & Vorderer, 2010). These effects are likely to reduce cognitive arousal levels and ultimately reduce aggressive behaviour. This conclusion appears to be supported by the results of the first phase of this research study where some environments saw no aggressive messages and others saw it in limited amounts.

While the theme of stress relief was widespread in the discussions, it is worthwhile to note the overall lack of dialogue over the issues of gender related aggression.

Gender.

Considerable anecdotal evidence exists that suggests that females are most often the victims of aggressive behaviour in online games, especially in receiving of inappropriate and unwanted sexual messages (see, e.g., You play video games? So you are Fat, Ugly or Slutty, 2011). Despite this, research has shown a tendency for male players to experience a significant decrease in aggressive thoughts when faced with a female opponent while the

[2] "noob" (as used here) is an insult intended to insinuate that a player is unintelligent or inexperienced (Calka, 2006)

opposite has been found when a female player plays against a male opponent (Eastin, 2006). The results of the first phase of this study support those findings as no aggressive responses were received by researcher or research assistant regardless of the gender cues introduced. These findings are also supported by the only the only obvious female participant (and the only respondent who spoke about gender) who mentioned her experiences in this regard:

As a girl gamer, I have to say that I've experienced pretty much no gender discrimination at all. Which is cool. Unless perhaps positive discrimination where people realise I'm female and then cut me more slack than they would a guy, but I'd only be guessing at when/if that ever happened. (Participant 1, Steam General Forums)

Ultimately, this seems to suggest that the anonymity provided by the Internet or online game environment is not enough to induce gender related aggressive behaviour. Instead, a number of factors in these environments may be acting together to reduce such behaviour. Discovering the mediating factors that result in the online gender related aggressive behaviour that has been reported elsewhere, however, may be an important area for future researchers to consider.

Conclusion

The results of the first phase of this study point to the conclusion that, contrary to the theory of deindividuation, anonymity induced through the Internet environment does not automatically produce aggressive behaviour in individuals. This finding is in line with the suggestions of the SIDE model which holds that certain social cues and group norms will affect the behaviour of the deindividuated individual. This phase of the research project found that gendered social cues, in the form of gendered voices and pseudonyms, were not salient factors in producing aggressive behaviour in the deindividuated participants. Gender was also not an important theme in the online discussions in the second phase of the research project leading to the conclusion that the participants and the respondents themselves do not feel it is an important issue in aggressive behaviour online.

Also in line with the suggestions of the SIDE model of behaviour, the results of the first phase of this study point to the conclusion that the competitive online group norm environment results in more aggressive behaviour than the cooperative online group norm environment. This effect may be amplified by larger group sizes in the competitive environment and human-player opponents (rather than computer-generated opponents).

This conclusion was supported by the second phase of the research study which explored respondents' experiences in the online environment. Respondents pointed to the anonymity provided by the internet along with personal investment in the game's outcome (such as in a truly competitive environment) as being strong predictors of aggressive behaviour. It was argued that this behaviour would be mediated, however, through strict administration of these environments.

While more research is necessary to determine if this is indeed the case, stricter administration of online environments where problematic or anti-social behaviour has been noted could potentially reduce aggressive behaviour. Reducing competition, or inducing cooperative group norms, in these environments could also prove to reduce aggression in the anonymous participant. The results of this study do not point to enforcing reduced anonymity (through user registrations) as a solution to online aggressive behaviour.

Given the exploratory nature of this research project, the results of the experiment and subsequent discussions are intended to provide new avenues for further research rather than being conclusive in and of themselves.

Limitations

Given the quasi-experimental nature of the research design, participants were not randomly assigned or matched in each condition. Thus it is possible that individuals who are more aggressive may tend to play competitive online games rather than cooperative games. This may be an area that future researchers might consider exploring in more detail.

It is also unclear as to whether results from this study can be generalised to other populations groups as the participants and respondents in both phases were primarily English-speaking and presumably white, middle to upper-middle socioeconomic status males.

For the purposes of the experiment, only verbal aggressive messages were recorded and transcribed. As respondents in the second phase of the study claimed to have encountered aggressive behaviour in both verbal and text instances, future researchers may want to investigate this area more thoroughly.

Finally, the relatively strict administration on the South African servers used for the experiment may also have had a mediating effect on the aggressive behaviour of the participants and so further research into this area is necessary.

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