

# Journal of • Virtual Worlds Research

jvwresearch.org ISSN: 1941-8477

## Assembled 2014

May 2014  
Vol. 7 No. 2



# **Volume 7, Number 2**

## **Assembled 2014**

### **May 2014**

#### **Editor In-Chief**

Yesha Sivan,  
Tel Aviv-Yaffo Academic College, Israel

#### **Issue Editors**

Samuel Cruz-Lara,  
LORIA (UMR 7503) CNRS - INRIA -  
Université de Lorraine, France

Sue Gregory,  
University of New England, Australia

Suely Fragoso,  
Federal University of Rio Grande do Sul,  
Brazil

Urs-Vito Albrecht,  
Braunschweig University & Hannover  
Medical School, Germany

Christopher Lueg,  
University of Tasmania, Australia

#### **Coordinating Editor**

Tzafnat Shpak



The JVWR is an academic journal. As such, it is dedicated to the open exchange of information. For this reason, JVWR is freely available to individuals and institutions. Copies of this journal or articles in this journal may be distributed for research or educational purposes only free of charge and without permission. However, the JVWR does not grant permission for use of any content in advertisements or advertising supplements or in any manner that would imply an endorsement of any product or service. All uses beyond research or educational purposes require the written permission of the JVWR. Authors who publish in the Journal of Virtual Worlds Research will release their articles under the Creative Commons Attribution No Derivative Works 3.0 United States (cc-by-nd) license. The Journal of Virtual Worlds Research is funded by its sponsors and contributions from readers.



Volume 7, Number 2

Assembled 2014

May 2014

# **A Multi-faceted Approach to Anonymity Online: Examining the Relations between Anonymity and Antisocial Behavior**

**Rebecca Chui**

University of Warwick (LLB Law);  
London School of Economics and Political Science

## **Abstract**

This article reviews the literature on the relations between anonymity in antisocial behaviour: does online anonymity qualitatively alter online behaviour, encouraging antisocial behaviour online? Or does online anonymity have no effect on the exhibition of antisocial behaviour? I argue that this line of thought presents an unsatisfactory dichotomy as it does not sufficiently account for individual contexts. Anonymity alone is not adequate to induce antisocial behaviour: it requires the motivation to act in that manner. I argue that the development of this motivation to exhibit antisocial behaviour involves a multifaceted perspective that consolidates the self (e.g. socio-economic backgrounds and the degree of value placed on anonymity) with the other (e.g. group norms). This is, in turn, influenced by the chosen media channel (e.g. games, forums, virtual worlds, chat-rooms), the presence of any wider motivations (political and sociological), and the degree of anonymity afforded by the media channel; these factors affect the way anonymity is perceived and utilised.



## 1. Introduction

This article questions the role of anonymity in antisocial behaviour: does online anonymity qualitatively alter online behaviour, encouraging antisocial behaviour online? Or does online anonymity have no effect on the exhibition of antisocial behaviour? Through analysis of current literature, I argue that this line of thought presents an unsatisfactory dichotomy as it does not sufficiently account for individual contexts. As Joinson notes, anonymity in specific situations is also associated with higher levels of self-disclosure, which may encourage intimacy and friendship (Joinson, 2001, p.177). Alternatively, online anonymity is frequently linked with lack of accountability and inhibition, at times lending itself to impolite behaviour (Kiesler, Zubrow, and Moses, 1985, p.77). For example, Wallace claims that the lack of accountability and inhibition encourage people to ‘often use tactics that go far beyond what they might use in person,’ (Wallace, 2001, p.118) displaying ‘less self-awareness and regard for judgement of others’ (Sproull and Kiesler, 1986, p.1492). There is, however, a marked difference between lowered regard for others and displaying antisocial behaviour. Anonymity alone is not adequate to solely induce either antisocial behaviour or hyper-personal relations: they entail the *motivation* to act in that manner (Zheng, Burrow-Sanchez and Drew, 2010, p.8). I argue, based on literature review, that the development of this motivation to display antisocial behaviour involves a multifaceted perspective that consolidates the self (e.g. socio-economic backgrounds and the degree of value placed on anonymity) with the other (e.g. group norms). This is, in turn, influenced by the chosen media channel (e.g. games, forums, virtual worlds, chat-rooms), the presence of any wider motivations (political and sociological), and the degree of anonymity afforded by the media channel; these factors affect the way anonymity is perceived and utilised.

## 2. Defining Antisocial Behaviour

In English legislation, antisocial behaviour is defined as ‘harassment, alarm or distress to one or more persons not of the same household’ (Criminal Justice Act, 1998, s1(1)). From a sociological standpoint, it is often highlighted along the lines of violating certain social norms and creating harm to the receiver(s), although there is no exact threshold of required harm (Millie, 2008, p.379). In the context of computer-mediated communications (CMC), violating social norms may involve ‘flaming’ (Déry, 1994, p.1), ‘griefing’ (Boellstorff, 2008, p.252) and general hostile behaviour that disrupt user experience, such as spamming (Microsoft). In cases of griefing and most instances of flaming, there is an expectation that their behaviour will most likely cause distress to the receiver (Chen, Duh, and Ng, 2009, p.341). Many CMC-related antisocial activities therefore involve an aspect of deliberate motivation to harm or distress, a lessened sense of empathy, and a lack of inhibition with increased levels of unaccountability.

The presence of antisocial behaviour on CMC, particularly the Internet, has been widely documented. In the recent years, cyberbullying has emerged as a form of antisocial behaviour and encompasses similar traits, such as knowingly inflicting harm and lowered sense of accountability. Cyberbullying, defined as repeated, wilful harm through electronic devices (Hinduja and Patchin, 2009), was experienced by 42.9% students in a random sample of 2,000 middle-school students in the last 30 days. This took the form of, amongst others, receiving upsetting non-spam emails and instant messages, being mocked in a chat room, and having information that they did not wish to be disclosed posted on a website. Other studies show that 53% of 1,685 pupils surveyed in Suffolk also have experienced rude or aggressive behaviour, sexual jokes and unwanted traffic online (Katz, 2013, p.4. Also see Livingstone, 2014); there is a clear presence of antisocial activity, particularly towards and perpetrated from younger ages groups, on CMC.

### 3. Socio-psychological Aspects of Anonymity

‘Being online is freeing, you can be anything ... you want. Nobody can see or judge you,’ an interviewee explains (Zheng, 2010, p.40). This is a pertinent and central reason for exhibiting antisocial behaviour online by anonymous participants: if we are anonymous, we are less accountable for our actions (Mann, Newton, and Innes, 1982, p.260). Additionally, anonymity usually involves a decreased expectation of (knowingly) interacting with the correspondent again. Walther et al. demonstrate that participants are more likely to behave warmly if there is an expectation of further interaction (Walther, 2006, p.473).

Lessig et al. distinguish the differences between visual anonymity and untraceable anonymity (Lessig, Post, and Volokh, n.d.). Visual anonymity describes, for instance, participants in a chat channel who are visually indistinguishable from the other participants. However, there may be records on the server linking the visually anonymous person to their physical-space self (e.g. registering for a chat-room may require divulging an email address). A participant is untraceable and anonymous where there is no record kept between the physical-space person and their online activities. However, untraceable anonymity is described as a ‘moving target’ (Wallace, 2001) as it is impacted by user masking technologies and Internet Service Provider legal obligations to divulge client information. It may not be actual untraceability that encourages antisocial activity - demonstrated by the fact that it is possible to obtain a court order to identify ‘flamers’ (Cheng, 2009) - but the *feeling* of untraceability: ‘You can be whoever you want to be. You can completely redefine yourself if you want.’ (Turkle, 1997, p.184)

The effects of visual anonymity have been extensively studied, usually associating visual anonymity with deindividuation and lack of inhibition. The reduced social cues approach argues that the decreased social ‘bandwidth’ of CMC causes a reduction in social cues, accordingly lessening the importance of social norms (Sproull, 1986, p.1497). ‘Feelings of anonymity’, derived from the lack of social cues and the increased focus on the task or message (as opposed to the context) allegedly lead to ‘relatively self-centered and unregulated behaviour’ (Sproull, 1986, p.1495). Additionally, scholars such as Festinger et al., who looked at anonymity in group settings, describe the impact of deindividuation as where the individual ‘indulge[s] in forms of behaviour ... which, when alone, they would not indulge...’ (Festinger, Pepitone, and Newcomb, 1952, p.382)

While acknowledging CMC’s lack of social cues, Lea et al. posit that if the reduced cues approach was accurate, the effects of visual anonymity would be similar across different online groups (Lea, O’Shea, Fung, and Spears, 1992, p.106). As this is not the case, there must be other factors that influence the way groups and individuals behave. Lea et al. attempt to explain why some online groups behave differently than others through the Social Identity Model of Deindividuation Effects (SIDE). Briefly describing the cognitive dimension of SIDE, the behaviour of visually anonymous participants altered according to whether there was an increased group salience versus increased personal identifiability. Higher group salience resulted in higher likelihoods that the visually anonymous individual would behave in accordance to the group norms (Postmes, Spears, and Lea, 2002, p.3). Importantly, within inter-group contexts, anonymity and high group salience can generate in-group bias towards and stereotyping towards the out-group, encouraging comparatively hostile behaviour (Joinson, McKenna, Postmes and Reips, 2007, p.255). Additionally, inter-group relationships may be affected by one group being anonymous and the other group being identifiable. For example, anonymity of an in-group towards more powerful out-group may help foster honest expression of the group identity, as there is less fear of sanction (Spears and Lea, 1994, p.427); a recent study by Pettalia et al. illustrated that surveyed students thought the likelihood of cybervictims being hurt by cyberbullying was significantly

higher than perpetrators of cyberbullying having to face consequences for their actions (2013, p.2763). Whether anonymity encourages antisocial behaviour in specific contexts is dependent on salience of group identity, group norms and inter-group identities. As such, the SIDE is a more contextual approach compared to the reduced cues approach, and takes into account different social dynamics interacting with visual anonymity.

However, there is little emphasis on the other factors of possible importance, such as individual predispositions to group pressure, inter-group identities or individual motivations – for example, how are these group norms and identities initially developed? Those who act aggressively online and perpetrate cyberbullying are more likely to view aggressive behaviours as more normative, raising questions on how this belief is formed (Florell, Burton, and Wygrant, p.111). The SIDE also presents a circular viewpoint, as Lea et al. claim that any anti-normative behaviour is, in fact, a competing and emerging norm (Lea, 1992, p.107). The SIDE therefore cannot be verified or disproved on these grounds. Additional perspectives, in conjunction with theories such as SIDE, would help develop a more holistic perspective (for more on psychological perspectives, see Joinson, 2003, p.52).

#### 4. The Self

‘I was always happy when I got into a fight in the MUD [Multi-User Dungeon]. I remember doing that before tests. I would go to the MUD, pick a fight, yell at people ... and then go out for a drink.’ (Turkle, 1997, p.189)

Lorenz argues that aggression is a natural instinct that reacts to social cues (1950, p.221). For instance, acts of submission by A, in turn, lower levels of aggression from B towards A. This is strongly affected by the distance and anonymity of CMC: aggression cannot be diverted when the ‘other’ is unseen, unidentifiable and distanced (Lorenz, 1996, p.208). While it may be problematic to equate aggression with anti-social behaviour (as one can be aggressive without gravely contradicting social norms, for example, while defending another person), it suggests that inherent, natural characteristics such as aggression may be a possible source for antisocial behaviour. More specifically, people with higher levels of inherent aggression may react more aggressively under anonymity than they otherwise would. From the perspective of cognitive distortion, Chiang, Lin and Liu posit that those with high internet cognitive distortion traits (e.g. more likely to assume the negative and demonstrate hostility attribution bias) showed a higher likelihood of behaving aggressively even without the aggressive stimuli (2013, p.110). In this case, features of anonymity can be seen as *enablers* of antisocial behaviour: anonymity is important but not sufficient for the demonstration of aggression. However, placing full importance on these theories may lead to oversimplification of human behaviour as they cannot fully explain how group dynamics interact with the self to make decisions on behaviour; secondly, to what extent we are driven by innate aggression; and thirdly, to what degree anonymity is an enabler for antisocial behaviour in different scenarios.

Two studies investigating the question of flaming by anonymous users in CMC contexts appear to show contradictory results. Castella et al. found no links between an individual’s rated assertiveness and familiarity with the group with the occurrence of flaming – this might suggest that under the context of flaming, CMC and anonymity qualitatively transformed the nature of the communication (Castella, Abad, Alonso, and Silla, 2001, p.141). On the other hand, Aiken and Waller found a clear link between participant traits and flaming activities. Those who flamed others were identified as a consistent, small group of males, regardless of topics discussed (Aiken and Waller, 2000, p.95). Looking closer at the two studies, the demographic of the participants was markedly different. Aiken and Waller studied undergraduate business students who were fairly homogenous in age, education and computer

experience. In comparison, Castella et al. studied 140 participants recruited on a voluntary basis and there was no additional information provided.

Comparing these studies suggests that the impact of anonymity is not uniform: how participants react under anonymity may differ across age groups, socio-economic status, sex, different media channels and other factors. Indeed, Livingstone et al. found that those who are bullied online are more likely to be bullied offline and also share generally similar psychological and demographic profiles (Hasebrink, Gorzig, Haddon, Kalmus, and Livingston, 2011, p.9). Given the vastly differing results from the above studies, it is reasonable to suggest that understanding the effects of CMC and anonymity should involve taking into account personal characteristics of the participants, including personal motivations, actions, aims, and values.

Further studies on the profiles of those who perpetrate antisocial behaviour suggest that there could be a connection between the antisocial behaviour and the environment around them. For example, those who cyberbullied showed a lower sense of belonging in schools (Wong, Chan, and Cheng, 2014), a higher likelihood of engaging in risk-taking behaviour such as using psychoactive substances (Ybarra, Mitchell, and Lenhert, 2010), demonstrated a trend of their families providing lower social support, and being frequently involved in conflict situations (Mesch, 2009. Also see Ang, Tan, and Mansor 2010; Hinduja and Patchin, 2008). Notably, those who are simultaneously victims and perpetrators of cyberbullying show higher levels of bullying face-to-face. Cappadocia, Crag and Pepler suggest that those who are victims of antisocial behaviour are more likely to, in turn, retaliate online where they are anonymous, as online aggression is seen as less risky than face-to-face conflict (2013, p.186). The socio-economic environment of an individual acting antisocial should therefore also be taken into account to provide context to the perspective – is there a strong presence of prosocial relationships and positive support systems, or perhaps retaliatory motivations that would utilise anonymity in computer-mediated communications?

In a study by Chen et al., the motivations of griefers were examined and categorised. Griefing can be self-motivated (e.g. an inherent desire for power, attention etc.); game-motivated (e.g. point-scoring, boredom); grief-motivated (e.g. motivated by other griefers, a collective initiative); and player-motivated (e.g. revenge, spite towards other players) (Chen, 2009, p342). It was found that participants who enjoyed anonymity online also felt increased enjoyment for griefing in all categories. This supports the idea that anonymity appears to enable participants enjoy griefing more: it interacts with pre-existing and often complex motivations that must take into account different group norms and personal characteristics. Game-motivated griefing scored the highest in terms of enjoyment, followed by player-motivated, grief-motivated and finally self-motivated griefing. As self-motivated griefing scored the lowest, this may place less emphasis on the self as a conscious factor for acting antisocially, although it should be noted that the four categories are not completely distinct. For example, due to personal characteristics, a griefer may have a higher likelihood of joining griefer groups. It should also be noted that game-motivated griefing is highly dependent on the mechanics of the game and is interwoven with concepts of anonymity. Higher levels of anonymity within the game may change game mechanics, which influence decisions to disrupt others.

## 5. Media Channels

Technological restrictions play a key role in understanding how technology interacts with levels of anonymity and the way antisocial behaviour differs across media channels (Lessig, 2000). Given a specific level of perceived anonymity, media channels that provide greater flexibility and anonymity for the user are more likely to help manifest antisocial behaviour. For example, the process of ‘flooding’

(Hu, Choi, and Choi, 2004, p.39) networks via a discussion forum versus Internet Relay Chat (IRC) provides varying degrees of difficulty to act antisocially. For IRC, where communication occurs synchronously (Sproull, 1986, p.1493) through rooms called ‘channels’ or through direct user-to-user private messages, it is comparatively easier to type multiple messages at once as it requires only a single keystroke to submit a message. As a result, automatic countermeasures such as flood filters are less strict. On a forum, where communication occurs asynchronously, the process of flooding is comparatively harder as it requires additional clicks and navigation of the forum to create a discussion thread or post. Due to the asynchronous nature of forum communication, countermeasures such as flood filters can be made stricter to prevent users from posting messages in rapid succession and further add as a deterrent for antisocial behaviour. Technological features are often restrictors or enablers of antisocial activity, inadvertently motivating some antisocial activities to occur more readily on certain media channels. These aspects in the online environment can have a strong effect on the extent of antisocial behaviour exhibited, depending on the levels of accountability and availability of opportunities to act antisocially.

Secondly, Suler argues that an online environment where a person can separate their online actions from their physical-space self will cause a disinhibition effect through ‘dissociative anonymity’ (Suler, 2004, p.321). Users who choose to dissociate their real-life identities with their online selves feel less accountable for their online actions. Virtual environments that easily enable the severance between physical-space and online self – aiding dissociative anonymity – encourage disinhibition and antisocial behaviour. For instance, a game connected to a person’s Facebook account would discourage flaming, because the user would usually be identifiable to their network of friends. Some virtual channels tend to be more dissociated from physical-space selves than others due to differences in goals: various online games are focused around attaining a certain rank in a virtual world, while some online support groups (e.g. ‘Bodybuilding Forum’) have a purposeful link between online and physical-space identities. Additionally, levels of anonymity can differ *within* media channels. For example, disrupters on some IRC networks may adopt disposable usernames and use proxies to mask their identity to escape sanction, while legitimate users have the possibility to register their usernames, ensuring that only they may use that specific username. These levels of anonymity are controlled according to the user’s motivations, and anonymity is perceived as armour for those who wish to stay unaccountable.

As new opportunities for antisocial behaviour emerge within contexts of anonymity and dissociation, dominant norms in that environment explain whether an activity is considered antisocial and unacceptable within a community. Applying the SIDE model to this context, a community more focused on collectively creating a flame-free environment may be more intolerant of antisocial behaviour and therefore strongly curtail opportunities for disruption (see Turkle, 1997, p.251) – although Lea et al. also argue antisocial behaviour may be a *competing* norm. On the other hand, more individualistic communities may lean towards the technolibertarian viewpoint, believing that disagreeable behaviour is an avoidable part of online play – most virtual environments allow players to block an offender from interacting further with the player. The availability of opportunities to exhibit antisocial behaviour within the media channel framework therefore hinges on a complex set of circumstances: community norms, technological capabilities of that specific virtual space, levels of anonymity, and level of dissociation between physical-space and online self.

## 6. Institutions and Organisations

The discussion of anonymity and antisocial behaviour warrants discussion on wider societal uses of anonymity and conflicts, particularly in light of events such as the Wikileaks, Stop Online Piracy Act



and Protect IP Act protests (Melvin, 2012; Stallman, 2010). Differing perspectives on the ethics of anonymity online have become more prevalent, questioning how anonymity should be seen: anonymity as a shield against State persecution; anonymity as the protector of freedom of speech; anonymity as a nuisance for communities as it may allow for antisocial behaviour; or even anonymity as a hindrance for online advertising businesses who value persistent personal customer data (Bodle, 2013, p.23). Randi Zuckerberg, once Facebook's Marketing Director, famously said: 'People behave a lot better when they have their real names down ... I think people hide behind anonymity' (Bosker, 2011). Zuckerberg focuses on anonymity as an obstacle to social norm adherence, yet anonymity can equally foster a shared sense of group identity and strengthen group norms. The attributes of anonymity also include deindividuation, lessening of accountability and opportunity for more open expression of thoughts (Bodle, 2013, p.30) – elements that support political action, for it can help those who fear government reaction to feel protected, more able to express personal beliefs, and strengthen communal identity (Bernstein et al., 2011, and Coleman, 2011). Joinson suggests three criteria that need to be present for collective action: a sense of injustice, efficacy (i.e. the ability to gather support for the cause), and a shared sense of identity (Gamson, 1992; Kelly and Breinlinger, 1996; Klandermans, 2004; Joinson, 2009, p.1993).

As mentioned above, anonymity has a clear relation with fostering a shared identity, yet also impacts the criteria relating to efficacy and a sense of injustice of a political movement. For example, Walker and Smith argue that a sense of injustice resulting in collective action has to be both subjective but also a shared experience of injustice (Walker and Smith, 2002). The political cause has to be such that it is experienced as a group and as a collective identity; in other words, experiencing a 'shared frame of reference' (Joinson, 2009, p.1993). As the SIDE depicts, visually anonymous groups with high salience on group identity showed that individuals were more likely to adhere to group norms. While the SIDE does not necessarily explain how and why high group salience is initially created, if a group norm is to feel injustice over a political cause, anonymity can contribute to the adherence of this group norm and opposition against those who do not share this belief. As a result, the 'other' is more likely to be stereotyped and seen as a collective piece, reducing the chances that opposing groups will work to bridge understandings and have an empathic view of the 'other' (Tanis and Postmes, 2005).

Similarly, efficacy and the ability to gather support for collective action, according to Drury and Reicher, is closely linked to collective *power*: the belief that one can truly challenge the status quo (2005, p.35). The feeling of empowerment – participating in 'social relations' with the intention of transforming from being the disadvantaged outgroup to the ingroup – necessitates strong group identity and support (ibid, p.51). Anonymity is both linked to a sense of disinhibition and that their actions 'will be submerged in the hundreds ... of other actions taking place there' (McKenna and Bargh, 2000, p. 60), but also to the creation of a salient group identity. As previously discussed, theories of anonymity do not predict when a political cause has the potential to be popular, yet it can explain *why* a group has fast-growing traction resulting in political action.

Political and collective action can involve antisocial behaviour. Some examples include the protests against the passing of Anti-Counterfeiting Trade Agreement (ACTA) and Cyber Intelligence Sharing and Protection Act (CISPA), bills intending to require internet intermediaries to assist the government and others who seek to uncover the identity of anonymous users (see Froomkin, 2008). The opposing desire for the Internet to remain 'free' by preserving anonymity was vocal. Anonymous, a leaderless Internet activist and hacktivist group, sought to force companies and trade associations such as Boeing, TechAmerica, and USTelecom to drop their support for the legislation by continued DDoS attacks on their websites (Donohue, 2012). The political action against companies in support of the Stop

Online Piracy Act (SOPA) was no less determined. Anonymous targeted SOPA supporter Sony, initially threatening to target their PlayStation Network (“[Sony’s] support of the act is a signed death warrant”), leak the private information of Sony executives, and deface the Sony website. Both Sony and Nintendo withdrew their support for the bill (Shanklin, 2011; Orlanoff, 2011). Anonymous and other internet hacktivist groups have been known to protest against perceived injustice or curtailment of rights in this way (Bright, 2010; Ragan, 2012; Gallagher, 2011).

Anonymity acts as an enabler of both collective action and antisocial behaviour, although relevance of anonymity is dependent on the context, the aims of the group, and the group activity. Whether it is extracting sensitive information by unauthorised SQL injection attacks, distributing aggressive messages, or starting an online petition, illegal activities - as described with Anonymous - are expected to garner the attention of authorities; participants are more likely to value their anonymity in these cases. Anonymity may be less relevant in cases where the dissent is protected and acceptable, and the activities the group participates with are lawful or are perhaps fundamentally involved with a person’s identity (e.g. signing an online petition to your Member of Parliament as a constituent). Regardless, the relations between anonymity and group dynamics should be considered. The motivations of each organisation, group or institution utilise anonymity on CMC in accordance to the political climate, their aims, and their activities.

## 7. Conclusion

Anonymity itself is not sufficient to explain the demonstration of antisocial behaviour, although it can be an important factor in facilitating motivated communicators to act antisocially. Anonymity – both visual and ‘untraceable’ – creates perceptions of unaccountability and lessens inhibition. However, these do not automatically mean that antisocial behaviour is exhibited. This article has discussed the need to examine the context: characteristics of the self, group norms, personal motivations, and the media channel, all affect the process of exhibiting antisocial behaviour. As discussed, the SIDE model demonstrated the need to look at various group dynamics to understand how anonymity changes behaviour. Similarly, factors such as age, sex, aggression, and other characteristics can influence how someone perceives anonymity and whether someone acts antisocially under anonymity. Media channels also largely impact how anonymity is both perceived by the antisocial actor and used to disrupt others online. The details of the context must be taken into account before assessing the role anonymity plays in the display of antisocial behaviour.

## References

- Aiken, M. & Waller, B. (2000). Flaming among first-time group support system users. *Information and Management*, 37(2), 95-100.
- Ang, R., Tan, K., and Mansor, A. (2010). Normative Beliefs about Aggression as a Mediator of Narcissistic Exploitativeness and Cyberbullying. *Journal of Interpersonal Violence*, 26(13), 2619-2634.
- Bakioglu, B. (2009). Spectacular Interventions in Second Life: Goon Culture, Griefing, and Disruption in Virtual Spaces. *Journal of Virtual Worlds Research*, 1(3), 3-19.
- Bernstein, M., Monroy-Hernández, A., Harry, D., André, P., Panovich, K., and Vargas, G. (2011). 4chan and /b/: An Analysis of Anonymity and Ephemerality in a Large Online Community. The International AAAI Conference on Weblogs and Social Media (ICWSM).
- Boellstorff, T. (2008). *Coming of age in Second Life: an anthropologist explores the virtual human*. New Jersey: Princeton University Press.
- Bodle, R. (2013). The ethics of online anonymity or Zuckerberg vs. "Moot". *Computers and Society*, 43(1), 22-35.
- Bosker, B. (2011, July 27). Facebook's Randi Zuckerberg; Anonymity Online 'Has To Go Away'. *Huffington Post*. Retrieved 10 April 2014, from [http://www.huffingtonpost.com/2011/07/27/randi-zuckerberg-anonymity-online\\_n\\_910892.html](http://www.huffingtonpost.com/2011/07/27/randi-zuckerberg-anonymity-online_n_910892.html)
- Breinlinger, S., and Kelly, C. (1996). *The Social Psychology of Collective Action*. London: Taylor & Francis.
- Bright, P. (2010, Dec 7). 4chan rushes to WikiLeaks' defence, forces Swiss banking site offline. *Ars Technica*. Retrieved 07 April 2014, from <http://arstechnica.com/tech-policy/2010/12/4chan-rushes-to-wikileaks-defense-forces-swiss-banking-site-offline/>
- Cappadocia, M., Craig, W., and Pepler, D. (2013). Cyberbullying: Prevalence, Stability, and Risk Factors During Adolescence. *Canadian Journal School of Psychology*, 28(20), 171-192.
- Castella, V., Abad, A., Alonso, F., and Silla, J. (2000). The influence of familiarity among group members, group atmosphere and assertiveness on uninhibited behavior through three different communication media. *Computers in Human Behaviour*, 16(2), 141-159.
- Chen, V., Duh, H., and Ng, C., (2009). Proceedings of the International Conference on Advances in Computer Entertainment Technology: *Players Who Play to Make Others Cry: The Influence of Anonymity and Immersion*. New York: ACM.
- Cheng, J. (2009, Feb 11). Texas judge orders site to identify anonymous trolls, flamers. *Ars Technica*. Retrieved 08 January 2013, from <http://arstechnica.com/tech-policy/news/2009/02/texas-judge-orders-site-to-identify-anonymous-trolls-flamers>
- Chesney, T., Coyne, I., Logan, B., and Madden, N. (2009). Griefing in virtual worlds: causes, casualties and coping strategies. *Info Systems Journal*, 19(6), 525-548.
- Chiang, Y., Lin, S., and Liu, E. (2012). The effects of online discussion forum aggressive messages and cognitive distortion on users' negative affect and aggression. *The Turkish Online Journal of Educational Technology*, 11(2), 238-245.

- Coleman G. (2011, May 9). Anonymous: From the Lulz to Collective Action. *New Significance*. Retrieved 10 April 2014, from <http://www.thenewsignificance.com/2011/05/09/gabriella-coleman-anonymous-from-the-lulz-to-collective-action/>
- Criminal Justice Act 1998.
- M Déry, M. (1994). *Flame wars: the discourse of cyberspace*. North Carolina: Duke University Press.
- Donohue, B. (2012, April 11). Anonymous Knocks CISA Supporters Offline. *Threat Post*. Retrieved 09 April 2014, from <http://threatpost.com/anonymous-knocks-cispa-supporters-offline-041112/76434>
- Drury, J., and Reicher, S. (2005). Explaining Enduring Empowerment: A Comparative Study of Collective Action and Psychological Outcomes. *European Journal of Social Psychology*, 35(1), 35-58.
- Ellemers, N., and Spears, R. (1999). *Social identity: context, commitment, content*. Oxford: Wiley-Blackwell.
- Exposing the Underground: Adventures of an Open Proxy Server. *Dell Secureworks*. Retrieved 08 January 2012, from [http://www.lurhq.com/research/articles/other\\_articles/proxies/](http://www.lurhq.com/research/articles/other_articles/proxies/)
- Festinger, L., Pepitone, A., and Newcomb, T. (1952). Some Consequences of Deindividuation in a Group. *Journal of Abnormal and Social Psychology*, 47(2), 382-389.
- Florell, D., Burton, K., and Wygant, D. (2013). The role of peer attachment and normative beliefs about aggression on traditional bullying and cyberbullying. *Psychology in the Schools*, 50(2), 103-115.
- Froomkin, M. (2009). *Lessons from the Identity trail: Anonymity, privacy and identity in a networked society*. New York: OUP.
- Gackenbach, J. (2006). *Psychology and the Internet: Intrapersonal, Interpersonal and Transpersonal Implications* (2nd ed.). Amsterdam: Elsevier Academic Press.
- Gallagher, S. (2010, October 24). Anonymous takes down darknet child porn site on Tor network. *Ars Technica*. Retrieved 07 April 2014, from <http://arstechnica.com/business/2011/10/anonymous-takes-down-darknet-child-porn-site-on-tor-network/>
- Gamson, W. (1992). The Social Psychology of Collective Action. In A. Morris and C. Mueller (eds.), *Frontiers in Social Movement Theory*. New Haven: Yale University Press.
- Hasebrink, U., Gorzig, A., Haddon, L., Kalmus, V., and Livingstone, S. (2011) Patterns of risk and safety online. In-depth analyses from the EU Kids Online survey of 9-16 year olds and their parents in 25 countries. *EU Kids Online*. London: LSE.
- Hindjua, S., and Patchin, J. (2008). Cyberbullying: An Exploratory Analysis of Factors Related to Offending and Victimization. *Deviant Behaviour*, 29(2), 129-156.
- Hinduja, S., and Patchin, J. (2009). Cyberbullying Fact Sheet: What you need to know about online aggression. *Cyberbullying Research Center*. Retrieved 04 April 2014, from [http://www.cyberbullying.us/cyberbullying\\_fact\\_sheet.pdf](http://www.cyberbullying.us/cyberbullying_fact_sheet.pdf)
- Hu, Y., and Choi, H. (2004). Packet filtering to defend flooding-based DDoS attacks [Internet denial-of-service attacks]. *Sarnoff Symposium on Advances in Wired and Wireless Communication*, 39-42.



- Joinson, A. (2001). Self-disclosure in computer-mediated communication: The role of self-awareness and visual anonymity. *European Journal of Social Psychology*, 31(2), 177-192.
- Joinson, A. (2003). *Understanding the Psychology of Internet Behaviour*. New York: Palgrave Macmillan.
- Joinson, A., McKenna, K., Postmes, T., and Reips, E. (2007). *Oxford Handbook of Internet Psychology*. New York: OUP.
- Katelyn, Y., McKenna, A., and Bargh, J. (2000). Plan 9 From Cyberspace: The Implications of the Internet for Personality and Social Psychology. *Personality and Social Psychology Review*, 4(1), 57-75.
- Katz, A. (2013). The Suffolk Cybersurvey. *Suffolk County Council*. Retrieved 03 April 2014, from [http://www.suffolk.gov.uk/assets/suffolk.gov.uk/Your%20Community/e-Safer%20Suffolk/Suffolk%20Cybersurvey%202013\\_FINAL.pdf](http://www.suffolk.gov.uk/assets/suffolk.gov.uk/Your%20Community/e-Safer%20Suffolk/Suffolk%20Cybersurvey%202013_FINAL.pdf)
- Kiesler, S., Siegal, J., and McGuire, T. (1984). Social Psychological Aspects of Computer-Mediated Communication. *American Psychologist*, 39(10), 1123-1134.
- Kiesler, S., Zubrow, D., and Moses, A. (1985). Affect in Computer-Mediated Communication: An Experiment in Synchronous Terminal-to-Terminal Discussion. *Human-Computer Interaction*, 1(1), 77-104.
- Klandermans, B. (1997). *The Social Psychology of Protest*. Oxford: Blackwell.
- Konig, A., and Gollwitzer, M., and Steffgen, G. (2010). Cyberbullying as an act of revenge? *Australian Journal of Guidance and Counselling*, 20, 210-224.
- Lea, M., O'Shea, T., Fung, P., and Spears, R. (1992). Flaming in computer-mediated communication: Observations, explanations, implications. In Lea, M. (ed.), *Contexts of Computer-Mediated Communication*. New York: Harvester Wheatsheaf.
- Lessig, L. (2000). Code is Law: On Liberty in Cyberspace. *Harvard Magazine*. Retrieved 08 January 2012, from <http://harvardmagazine.com/2000/01/code-is-law.html>
- Lessig, L., Post, D., and Volokh, E., (n.d.). Privacy: Self-Help: Anonymity, Part 2. Retrieved 07 January 2012, from <http://www.lessig.org/content/articles/works/cyberlessons/lessons/priv12.html>
- Livingstone, S. (March 2014). Online risk, harm and vulnerability: Where's the harm? *The Association for Child and Adolescent Mental Health Annual Conference*. Retrieved 07 April 2014 from <<http://www.lse.ac.uk/media@lse/research/EUKidsOnline/EU%20Kids%20III/PDFs/ACAMHMarch2014.pdf>
- Lorenz, K. (1996). *On Aggression*. New York: Harcourt, Brace & World.
- Lorenz, K., (1950). The Comparative Method of Studying Innate Behavioural Patterns. *Symposia of the Society for Experimental Biology*, 4, 221-268.
- Mann, L., Newton, J., and Innes, J. (1982). A test between deindividuation and emergent norm theories of crowd aggression' *Journal of Personality and Social Psychology*, 42(2), 260-272.
- McCown, J., Fischer, D., Page, R., and Homant, M. (2001). Internet Relationships: People Who Meet People. *Cyberpsychology and Behaviour*, 4(5), 593-596.

- McKenna, K., and Bargh, J. (2000). Plan 9 from cyberspace: The Implications of the internet and for personality and social psychology. *New York Personality and Social Psychology Review*, 4(1), 57-75.
- Melvin, J. (2012, January 20). SOPA stopped after unprecedented online protests. *National Post*. Retrieved 04 April 2014, from <http://news.nationalpost.com/2012/01/20/sopa-stopped-after-unprecedented-online-protests>
- Mesch, G. (2009). Parental mediation, online activities and cyberbullying. *Cyberpsychology & Behaviour*, 12(4), 387-393.
- Millie, A. (2008). Anti-social behaviour, behavioural expectations and an urban aesthetic. *British Journal of Criminology*, 48(3), 379-394.
- Moore, R., Ducheneaut, N., and Nickell, E. (2007). Doing Virtually Nothing: Awareness and Accountability in Massively Multiplayer Online Worlds. *Computer Supported Cooperative Work*, 16(3), 265-305.
- Orlanoff, D. (2011, December 30). Anonymous posts threat against Sony (and Justin Bieber) over SOPA support. *The Next Web*. Retrieved 06 April 2014, from <http://thenextweb.com/insider/2011/12/30/anonymous-posts-threat-against-sony-and-justin-bieber-over-sopa-support/>
- Pettalia, J., Levin, E., and Dickinson, J. (2013). Cyberbullying: Eliciting harm without consequence. *Computers in Human Behavior*, 29(6), 2758-2765.
- Postmes, T., Spears, R., and Lea, M. (2002). Intergroup differentiation in computer-mediated communication: Effects of depersonalization. *Group Dynamics Theory Research and Practice*, 6(1), 3-16.
- Ragan, S. (2013, Jan 20). Anonymous forces DOJ and several others to protest SOPA/PIPA. *The Tech Herald*. Retrieved 05 April 2014, from <http://www.thetechherald.com/articles/Anonymous-forces-DOJ-and-several-others-to-protest-SOPA-PIPA/16056/>.
- Shanklin, W. (2011, Dec 30). Anonymous targets Sony over SOPA, Nintendo quietly withdraws support. *Geek*. Retrieved 09 April 2014, from <http://www.geek.com/games/anonymous-targets-sony-over-sopa-nintendo-quietly-withdraws-support-1454047>.
- Stallman, R. (2010, Dec 17). The Anonymous WikiLeaks protests are a mass demo against control. *The Guardian*. Retrieved 06 April 2014, from <http://www.theguardian.com/commentisfree/2010/dec/17/anonymous-wikileaks-protest-amazon-mastercard>.
- Spears, R., and Lea, M. (1994). Panacea or panopticon? The hidden power in computer-mediated communication. *Communication Research*, 21(4), 427-459.
- Sproull, L., and Kiesler, S. (1986). Reducing Social Context Cues: Electronic Mail in Organizational Communications. *Management Science*, 32(11), 1492-1512.
- Suler, J. (2004). The Online Disinhibition Effect. *CyberPsychology & Behaviour*, 7(3), 321-326.
- Tanis, M., and Postmes, T. (2005). A social identity approach to trust: interpersonal perception, group membership and trusting behaviour. *European Journal of Social Psychology*, 35(3), 413-424.
- Turkle, S. (1997). *Life on the Screen: Identity in the Age of the Internet*. New York: Simon & Schuster Inc.

- Wallace, P. (2001). *The Psychology of the Internet*. Cambridge: Cambridge University Press.
- Walker, I., and Smith, H. (2002). *Relative Deprivation: Specification, Development, and Integration*. Cambridge: Cambridge University Press.
- Walther, J. (2006). Anticipated Ongoing Interaction Versus Channel Effects on Relational Communication in Computer Mediated Interaction. *Human Communication Research*, 20(4), 473-501.
- Walther, J. (1992). Interpersonal Effects on Computer-Mediated Interaction: A Relational Perspective. *Communication Research*, 19(1), 52-90.
- What is spam? *Microsoft Safety and Security Centre*. Retrieved 06 January 2012, from <http://www.microsoft.com/en-gb/security/resources/spam-what-is.aspx>.
- Wong, D., Chan, H., and Cheng, C. (2014). Cyberbullying perpetration and victimization among adolescents in Hong Kong. *Children and Youth Services Review*, 36, 133-140.
- Ybarra, M., Mitchell, K., and Lenhart, A. (2010). Cyberbullying research in the United States in Mora-Merachán, J. and Jäger, T. (eds.) *Cyberbullying: A cross-national comparison*. Landau: Verlag Empirische Pädagogik.
- Zheng, R., Burrow-Sanchez, J., and Drew, C. (2010). *Adolescent Online Social Communication and Behavior: Relationship Formation on the Internet*. Hershey: Information Science Reference.